Exploring Practices and Understandings of Designing Inclusively

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Abstract

The concept of inclusion in design is increasingly well known. It raises awareness and supports how a greater diversity of people can bring value to the creation of new buildings, spaces, services, and products. Yet, uptake is said to be limited in practice. Although well-researched, the numerous ways to describe and understand inclusion are unsettled, and often paradoxical. To learn more about the real-world practices and conceptualisations of inclusion, this research explores (i) how practitioners advocate for and navigate inclusion in design projects, (ii) their driving motivations and mindsets, (iii) inclusion’s prevalence during project negotiations and trade-offs, and (iv) the opportunities to improve inclusive practice.

A review of existing literature helped formulate preliminary notions to guide discussions conducted with practitioners recruited across different domains. These semi-structured interviews helped evolve the notions further to better bridge inclusive practice and theory. Further analyses and inquiries conducted with practitioners also led to discover relationships between notions and uncovered other underlying themes – or aspects – to designing inclusively. Findings revealed concerns raised by participants about governing project development processes and the influence of team dynamics. Regarding inclusion, practitioners provided further insights into the types of user involvement and details about recruitment, compensation, and facilitating their participation in the process. Testimonials also helped capture cautionary tales and best practices that can be used to iteratively improve inclusive practice from one project to the next, resolve some of the paradoxical tensions reported in theory, and argue the positive and negative ripple effects of enabling or omitting inclusion. Findings were further analysed using different frameworks that continued to bring theoretical findings closer to practical application. Ultimately, results were transformed into an Overlay for Designing Inclusively. It was evaluated by practitioners who reported on the clarity, relevance, and value of this practical contribution. Findings suggest that the overlay provides insights that can support uptake across different disciplines of design practice, roles, responsibilities, and levels of experience with designing inclusively.

In sum, this research was designed to help untangle the issues surrounding inclusion that matter to practitioners. It revealed key concerns and strategies to designing inclusively across different phases of the project development process and proposes a practical contribution that supports uptake of inclusive practice.

Keywords: inclusivity, inclusion, design practice, involvement, accessibility.
List of Publications

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Zahedi, M., Leblanc, T., Lamirande, M. (2018); Bootcamps as a pedagogical success story; Conference on Supporting Student Success; Université de Montréal; Montréal.

2018
Presentation
Zahedi, M., Lamirande, M. (2018); Design Bootcamp: A path to Praxis; Design Principles and Practices Conference; ELISAVA University; Barcelona.

2018
Presentation
Lamirande, M., Zahedi, M. (2018); Why change what still works; Design Principles and Practices Conference; ELISAVA University; Barcelona.
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Chapter 1: Introduction

1.1. Introducing Inclusion

This research was first motivated by a statement from the European Institute for Design and Disability (2004, p. 1) that “good design enables, bad design disables”. Two reflections are taken from this. Starting from the second half (bad design disables), they suggest that the outcomes of different design projects – such as buildings, spaces, services, products, etc. - can be disabling, inaccessible, or unusable by people who interact with them in their everyday. These projects may have been poorly designed and do not consider the scope and intersection of needs for different people within a physical model of accessibility – such as neurodiverse, mobility-impaired, or ageing users; As Clarkson and Coleman (2013, p. 2) suggest, “capability levels are multi-faceted and interact with each other. [...] it is likely that young blind people will have very acute hearing to supplement a low level of visual information, whereas older people are likely to have reduced levels of both vision and hearing, perhaps coupled with reduced mobility and cognition”. According to Imrie and Luck (2014, p. 1315), neglecting diverse capabilities in everyday life design can impact independence:

From the shape and size of cutlery and crockery to the width of doors and corridors, the design of everyday artefacts is an indispensable, and constitutive, part of people’s functioning and significant in shaping their levels of independence and well-being. The reality is, however, that much of the designed environment is inattentive to the needs of many people, and this is particularly so for individuals with different types of impairment. It is well documented that for many disabled people the design of objects may inhibit their independence.

When designs are ‘bad’, they seem to disable users and compromise their abilities to work, live, and navigate life independently. Holmes (2018, p.4) describes mismatches between ourselves and the world within which we are trying to interact: “Mismatches are the building blocks of exclusion. They can feel like little moments of exasperation when a technology product doesn’t work the way we think it should. Or they [marginalised or (dis)abled users] can feel like running into a locked door marked with a big sign that says, ‘keep out’. Both hurt.” Bad designs do not seem to match with user needs or access requirements that allow individuals to engage or interact with the design. These mismatches are described as “a by-product of how our world is designed” Holmes (2018, p. 4).

The first half of the statement (from the European Institute for Design and Disability) proposes that “good design enables”. The Institute likens good design to solutions that function and consider all users. Specifically, these designs react to the growing diversity of abilities, conditions, and contexts that form users’ everyday lives: “human diversity in age, culture and ability is greater than ever. We now survive illness and injury and live with disability as never before. Although today’s world is a complex place, it is one of our own making, one in which we therefore have the possibility – and the
responsibility – to base our designs on the principle of inclusion” (p. 1). The statement insists that inclusion is a key catalyst to the development of ‘good’ designs. Inversely, “When the lived experience of underrepresented communities is omitted from the product development cycle, the usefulness of the technology becomes biased towards one group” (Kapor Capital Commitment, 2015 in Constanza-Chock, 2020, p. 70). This thesis therefore proposes an investigation into inclusion within design practice to understand and support its uptake – leading to more ‘good’ designs.

1.2. Context of Research

There is significant interest in up-to-date research about improving inclusion and accessibility across the design of public buildings, spaces, services, and products. This project was completed through a global pandemic, lockdowns, social (in)equity movements, and tensions with returning to our ‘normal-lives’. Amidst these, there has been an urgency to instil equality, diversity, inclusion, and accessibility across our society. For instance, this includes the redesign of public policies in the United States to redistribute police funding to social initiatives like housing, healthcare, and community support (The Guardian, 2020). In another case, public spaces such as retail stores, restaurants, cafés, and office spaces considered significant reforms to mitigate health risks and adhere to government rules on social distancing. Designers are working to answers questions such as “what does the future of air travel look like?” (Design Week, 2020a), “how can the design of homes improve work-life balance?” (Design Week, 2020b) or “how can we continue to teach students during and after lockdown?” (Dezeen, 2020). Many institutions and organisations are embedding inclusive goals within their mission statements (see Open University, 2022; Nike, 2022; Arup, 2022). To support these inquiries and endeavours, research on inclusive practices highlight the importance of two central concerns:

The inclusive design knowledge base breaks down into two discrete areas: understanding end users from many different perspectives, and understanding the information needs of the knowledge users (e.g. designers) who are involved in promoting and delivering inclusive design solutions. Much research has focused on the end users, but in recent years, understanding the needs and the characteristics of knowledge users has added a new dimension to the research task. (Dong et al., 2013, p. 284).

This highlights the continued development and refinement of theory about inclusion in design and its practice. The process of inclusion is proposed to recognise a designs’ more marginalised and vulnerable groups. It seems underscored by the involvement of marginalised users (or potential users), and practitioner abilities to effectively facilitate their participation and embed their views into design criteria. However, while the concept of participation seems well known in design, there
still appears to be some significant, complex, and diverse barriers to its uptake in practice (Luck, 2018a; Heylighen et al., 2017).

First, the theories of inclusion are often paradoxical. Clarkson and Coleman (2013, p. 1) reported that Inclusive Design “sought to link design and social need, and to challenge misguided but deep-seated assumptions about ageing, disability and social equality” [2] (p. 2). More recently, an understanding of Inclusive Design has evolved into a way to “ensure that […] products and services address the needs of the widest possible audience, irrespective of age or ability” (Bianchin & Heylighen, 2018, p. 1). Yet, as the target audience broadens, a focus on those most marginalised or excluded from everyday designs is lost – downplaying the value of inclusion (Hamraie, 2017). In other words, although there is a growing view that inclusion addresses all needs and abilities, its success is argued through an intentionally exclusionary process which focusses on specific minority, or marginal needs (Tonkinwise, 2018).

Second, the perspectives and abilities of practitioners cause concern. Some practitioners explain that inclusion slows the design process, delays time to market, is expensive, or stifles creativity (Franz et al., 2010, Dong et al., 2003). Others say user involvement raises daunting questions like ‘who is included (and forcibly excluded), when are they involved in the process, and how does the team decide on a fair outcome for everyone?’ (Tonkinwise, 2019; Palmås & von Busch, 2015). To bypass these issues, some designers rely on their intuition and empathising with the abilities and situations of users themselves (Van der Linden et al., 2019). However, without directly including those affected by the design outcomes in the process, designers and planners likely fail to learn about their lived experiences and the expertise it can provide (Pullin, 2009). The team may also have a short-sighted understanding of accessibility, developing a form of tunnel vision which focuses solely on regulations and legal compliance (Ielegems et al., 2019). Through its evolution, inclusion has also shifted from physical (dis)abilities (or a physical model of (dis)ability) to also include social concerns; Teams may overlook issues such as perception, discrimination, or marginalisation from cultural identity, gender, and sexuality – as highlighted under a social model of (dis)ability (Nieuisma, 2004; Bianchin & Heylighen, 2018).

Third, these glimpses into the theories and practice of inclusion are fragmented across several approaches which each purport to working inclusively. This includes Accessibility Design, Design for All, Inclusive Design, Participatory Design, and Universal Design to name a few. As Luck (2018b, p. 153) explains, an approach can be ever changing, “inherently unsettled, […] plural in the ways it is practiced […] and as a series of histories that are entwined”. This can be further complicated by the varying perspectives each person (who takes part in the design) may hold (Dong, 2005). In addition, despite defining characteristics, others acknowledge that practices like Inclusive Design, Universal
Design, and Design For All can be seen as interchangeable, or synonyms (Heylighen et al., 2017, p.510). The lines between different approaches are blurred and definitions are hazy and entangled.

Finally, the interpretations and practice of inclusion can be equally nuanced by the different contexts in which it is articulated. For instance, observations about different design scales show how practitioners engage with inclusion differently – or more specifically, how users engage with the designs. Whereas architects consider how users experience a large space, objects are perceived as much smaller; controlled and handled within the hands of a user (Krampen, 1984). Thus, different project scales influence how users and designs interact. Practitioners also work within different project ecologies (otherwise often referred to as ecosystems): self-making networks of internal and external ecological, social, and technical concerns (van der Bijl-Brouwer & Malcolm, 2020). The context of a project influences which internal and external factors affect inclusive design practice. For example, manufacturing designers must adhere to ISO standards (ISO.org, 2022), architects must be registered and comply with national accessibility building codes and regulations (see UK Government Building Regulations, 2010, 2016 ed.), and UXUI (User experience, user interface) designers refer to online accessibility standards (see Web Content Accessibility Guidelines (WCAG2, 2022). Practitioners may also focus on specific users within their ecologies. For instance, Schelings & Elsen (2017) focused on users with downs syndrome and their sensory requirements within specific public spaces. It seems the contexts - including scales, ecosystems, disciplines, and Intentions - of different practitioners can influence their approaches.

These differences, entanglements, and nuances can lead to complications, especially when conflicting or mismatched perspectives occupy a same project development team (Zahedi, 2011), As such, although there is a focus on inclusion, the research scope looks beyond Inclusive Design. To avoid conflation, this thesis refers to the general endeavours of working within inclusion as designing inclusively. This should help distinguish the research from the Inclusive Design movement uniquely or specific practices and reflect concerns with broader issues about the practice of inclusion in design projects. Moreover, while nuances emerge through studies based in different disciplines or practices, Ostroff (2011) posits that the similarities are more apparent. This research chooses to understand the uptake of designing inclusively as an endeavour that cuts across boundaries – to collate findings from Architecture, Design Engineering, Industrial Design, UXUI, among others. It will not attempt to draw lines between practices, but will instead focus on design practice more generally.

With all this in mind, this research recognises that designing inclusively can function across boundaries but the practical and theoretical nuances between disciplines can lead to different understandings and implementations. There is caution around the limitations to a proposal that
cuts-across disciplinary boundaries when deployed in practice. This research is first able to work across theoretical boundaries and inquire into different ways of working and understanding inclusion. Nevertheless, it does draw more attention to research about the architectural and industrial design of public buildings, spaces, services, and products – situated closer to candidate and supervisors’ domain. This means that the intended ways of working and practicing design proposed hereon exist within pre-formed frames. Then, as this research moves from theory to its application, inquiries with practitioners from a spectrum of practices and levels of experience with inclusion is done to gain a broader sense of whether the concepts proposed remain applicable to diverse backgrounds. This does not imply that the outcomes proposed function for every type of practice and manifestation of design, but rather embody and connect with the ways these specific practitioners apply inclusion to their work. The contributions amplify a limited number of practitioners perspectives and the knowledge that it useful, meaningful, and understandable to them. As such, outcomes intend to resonate with similar types of practitioners who apply their own nuances, scales, ecologies, practices, and processes to the outcomes.

1.3. Research Goals and Questions

These first glances into the context of research begin to highlight key research goals (RG) of this thesis. First,

RG1: to advance the design of more inclusive and accessible environments.

Inquiries will rely on the foundations established by theory but will focus on the practical uptake of inclusion within real-world design projects that better support a broader scope of users – especially those often unheard or marginalised. Since there is a proposed relationship between user participation and inclusion, a second goal of this research is:

RG2: to advance disability-led / accessibility-led engagement in design processes.

To lead these explorations into the theory and practice of inclusion in design, a few research questions (RQ) are proposed:

RQ1: What are the understandings of inclusion for design practice?

RQ2: How do practitioners advocate for and navigate inclusion in design projects?

RQ3: What are the driving motivations and mindsets?
RQ4: Which parts of designing inclusively are (most) prevalent in project development and in the negotiations and trade-offs within the project?

RQ5: What opportunities do these findings offer for improved inclusion across a project development process?

These questions acknowledge the value of practitioner input, inquiring not only on their motivations, but the implementation of inclusion within their own project development processes. This is an exploratory engagement with the topic of inclusion – the theoretical landscape is effervescent, the means and methods of inquiring into practice are varied, and the practices themselves continue to evolve. As such, the following chapters include explorations across theory, qualitative investigations into practice, novel inquiries that analyse data and conclusions that intersect designing generally, stories of working within real-world project development processes, and attempts therein for the uptake of inclusion.

1.4. Chapter Overview

To first help make sense of the structure of the thesis, the figure below illustrates the relationships between RQ and thesis chapters. The dot at the end of each line indicates that the RQ is answered as a conclusion to the chapter. For instance, RQ4 (prevalent parts of designing inclusively) is answered at the end of Chapter 6: Further Analysis, Inquiry, and Insights. RQ1 uses brackets to indicate that it is answered throughout the thesis. Learning about the understandings of inclusion in design practice is an overarching research question that drives the thesis and inquiries forward. It is explored throughout the thesis to build a growing understanding of the diverse, vast, and unsettled landscape.
Chapter 2: Exploring Theory about Inclusion

There are several interpretations and understandings of designing inclusively. Chapter 2 explores different approaches to see the broader context of inclusion in design research. To help make sense and distil the theoretical landscape, a series of notions are proposed. These seven notions are a first attempt to embody theories around designing inclusively and serve as a starting point for data collection and analyses.

Chapter 3: Methodology

This research attempts to continue to make sense of designing inclusively. This project chooses to explore practice further through qualitative inquiries with practitioners who purport to designing inclusively. Chapter 3 will present the approach to inquiry and design of the research – including recruitment, data collection methods, and subsequent analyses. This includes an outline of well-
established methods – including semi-structured interviews - and well as other methods of coding and modelling results – such as participant cocreated probes (further details below).

Chapter 4: Practitioner Accounts of Designing Inclusively
Following data collection, summaries – supported by excerpts from testimonials – are provided for each semi-structured interview with practitioners. Chapter 4 reports on their personal first-hand experiences engaging with others in design development processes and how they advocate and support the uptake of designing inclusively. At the end of the chapter, RQ2 and RQ3 are answered.

Chapter 5: Notions and Aspects Underlying Inclusive Practice
To provide a more accurate representation of design practice, participant interviews were coded to evolve the proposed notions and search for underlying themes. The journey from initial notions to their fifth version is explained (evolving the notions). Equally, the chapter presents results from an open coding of transcripts (open coding and thematic clustering). These underlying themes are referred to as aspects that support uptake and are presented under three main themes – project development, working as a team, and designing inclusively.

Chapter 6: Further Analysis, Inquiry, and Insights
Coding the data provided a clearer understanding of notions to designing inclusively. Throughout the analysis, they seemed to interact, and impact the design process differently. To explore this more deeply, further analysis and inquiry were designed to uncover resonances between them and their prevalence in current real-world practice. The first is an analysis that models the building blocks of Open Innovation (Valkenburg & Sluijs, 2012) to identify shared enablers and barriers between notions. The second is a co-created inquiry with participants from the first interviews to discuss the prevalence of notions across each stage of their own design processes. At the end of the chapter, RQ4 is answered.

Chapter 7: Contribution to Practice – Overlay for Designing Inclusively
Following the review of theory, data collection, results, and analysis, an answer to RQ5 begins to form. To support practitioners and contribute to their efforts at designing inclusively, a design method – or “attempt to bring rational procedures into the design process” (Cross, 2021, p. 43) – is proposed. This chapter explains how the method (referred to as an overlay) was created and presents an evaluation of its clarity, relevance, and value according to practitioners. Research participants from Chapter 4, as well as participants new to the study and from varying practices were asked to evaluate the overlay. Chapter 7 presents the overlay, results from inquiry, and recommendations for next steps. This chapter ultimately answers RQ5.

Chapter 8: Conclusion
In the final chapter thoughts and concluding remarks are proposed. This includes a summary of research, personal thoughts about findings, an explanation of the validity to this research, limitations, and pathways for further inquiry.
Chapter 2: Exploring Theory about Inclusion

The theoretical landscape of (and around) designing inclusively is unsurprisingly vast. It was reported that several different approaches contribute to the advancement and uptake of inclusion in design practice. The purpose of this chapter is to first form a conceptual understanding of theory about inclusion. Its contents are driven by, and embody the question:

RQ1: What are the understandings of inclusion for design practice?

This conceptualisation embraces the inherent complexity of inclusion, wherein diverse, diverging, and sometimes paradoxical perspectives are held across the theoretical landscape. To try and account for this complexity, the review explores and learns from neighbouring approaches of inclusive design. The approaches were selected as they share in the goal to better represent and embody inclusion. Specifically, they share in the concern to account for the needs of those who will make use of the final design but who have been often marginalised within the mainstream design of public buildings, spaces, services, and products.

This chapter first outlines the process of inquiry that led to selecting each approach. Those reviewed were (i) Accessibility Design, (ii) Design for All, (iii) Super Normal Design, (iv) Appropriate Design, (v) Feminist Design, (vi) Universal Design, (vii) Participatory Design, (vii) Inclusive Design, and an emerging view on inclusive design which this research will refer to as (ix) (Neo) Inclusive Design. Second, these nine approaches are explored in greater depth. Third, a brief exploration of research about the uptake of designing inclusively and discrepancies between theory and practice is presented. Through this and alongside RQ1, understandings of design practice begin to form. This will later help answer subsequent RQs in later chapters.

A combination of scoping review and thematic clustering is used to form and present seven preliminary notions to designing inclusively. These notions are key to the research, forming a first understanding of designing inclusively (derived from theory), and evolving through subsequent chapters: data collection, analyses, and further insights and inquiry (about practice, and often involving practitioners). The term ‘notion’ is explained in greater detail later in the chapter.

2.1. Process of Inquiry

A scoping review is undertaken in order to explore relevant literature about the practice, implementation, and uptake of inclusion and to uncover or form conceptualisations about designing inclusively. Inquiry is performed as a scoping review since the body of literature “exhibits a large,
complex, or heterogeneous nature not amenable to a more precise systematic review” (Peters et. al, 2015, p. 141). Scoping reviews are iterative and allow for deviation from a review protocol if necessary. This is unlike systematic reviews which predominantly report on or through specific keywords and single, precise questions (Munn et al., 2018). According to Peters et. al (2015, p. 142), “a typical systematic review aims to answer a specific question or series of questions according to a rigid set of a priori delimiting factors detailed in the protocol, a scoping review will have a broader approach, generally with the aim of mapping literature and addressing a broader research question”. Indeed, the nature of a scoping review also aligns more closely with research intentions: to provide a summary or mapping of findings from a broad area of study intended to help practitioners unable to undertake the research work (about inclusive practice) themselves (Antman et al., 1992).

Arksey and O’Malley (2005) propose a six-step process to performing a scoping review: Identify research question; Identify relevant studies; Study selection; Charting the data; Collating, summarising, and reporting the results; and Expert consultation.

Step 1 is formulating research questions that address the population, concept, and context of the inquiry. This inquiry focusses on research questions (RQ) 1,2,4 and 5, broadly summarised into:
What is known and prevalent about designing inclusively, improving its uptake in practice, and amplifying the voices of marginalised users/groups when designing public buildings, spaces, services, and products?

Next (step 2), in order to identify relevant studies, the scoping review draws on (i) inquiries within existing networks, and conferences, hand-picked publications from key journals, (ii) looking through reference lists, and (iii) searching across electronic databases. The research supervisors first recommended three hand-picked publications to help draw out different initial interpretations of designing inclusively across the theoretical framework at the outset of this project:


By studying these papers and investigating references and keywords, new pathways within the theoretical framework formed. For instance, Luck (2018) refers to Heylighen & Nijs (2014) to help characterize inclusive design and designing for (dis)ability. This led to searching databases and reading through publications by Ann Heylighen which in turn revealed a publication about the uptake of inclusive design (Heylighen et al., 2017). The diagram below illustrates that these three
initial publications expanded and reached other notable works for this review. They were selected as representations of the landscape since they embody several – most - characteristics within each approach and took part in next steps for the scoping review (collating, summarising, and finally reporting the results in Section 2.4).

![Diagram of the theoretical landscape]

**Figure 2: Overview of the explored Theoretical Landscape**

Luck (2018b, p. 96) explains that “the inclusive design movement aims to bring about change, to redress through design the many situations in everyday life that do not accommodate the diverse capabilities of people with (dis)abilities”. Whilst (dis)ability experiences are proposed as central to inclusive design, other researchers have used the term interchangeably with approaches like Universal Design and Design for All and reformed its meanings:

Several design approaches aspire to take into account the largest range of users possible during design. These approaches include, for example, universal design, inclusive design, and design for all. Despite their different place of origin and some semantic distinctions, all these approaches share a similar purpose. In this article they will therefore be considered interchangeably and henceforth referred to as inclusive design. This term is chosen over the other two because it directly reflects the common ambition of these approaches to include as many people as possible (Heylighen et al., 2017, p. 507).

Despite this position, others disagree and maintain that these are distinct approaches whose guiding principles are not interchangeable. Although this definition broadens the number of people who
may benefit from a design, Hamraie (2017) criticises that this kind of generalisation downplays the significance of the approach and in fact outcasts disability. These tensions and paradoxes supported an inquiry further into Inclusive Design, Universal Design, Design for All.

In the same breadth, according to Treviranus, “Universal design is one-size-fits-all, Inclusive design is one-size-fits-one” (in Holmes, 2018, p. 53). Holmes uses this to outline possible improvement to the design of medical assistive technology which lack a personal and bespoke quality. This resonates with Pullin (2009) who explores designs that are both unique and attuned to disability, but hold translatable benefits to other users. More recently Pullin (2019) proposed that these unique products could fit into an approach of Super Normal Design, wherein users should feel a natural familiarity with a design. This led to further explore Super Normal Design as one of the nine approaches.

Next, through the review of literature, Jos Boys emerged as a relatively radical researcher of architectural inclusive design. They recently published a call to action, insisting that (dis)ability should be done differently in Architecture:

> While other identities are at least explored to some extent in architectural discourse and practice, disability as a concept and disabled people as a constituency continue to be assumed as completely separate from social or cultural politics—as merely a catalog of unproblematic functional categories (e.g., deaf, blind, and wheelchair user). Unlike gender, race, or sexuality then—and the feminist, postcolonial, and queer studies that underpin associated scholarship and debate—it seems that we assume “disability” to be unable to bring any kind of criticality or creativity to the discipline of architecture. (Boys, 2014, p. 170).

Boys broadens the outlook of (dis)ability, intersecting with other characteristics protected by the Equality Act (1998). Similarly, Nieuxma (2004, p. 13) outlines a review of different approaches to give “designers an opportunity to think about how their work might be directed as wisely and fairly as possible”. In this paper, Nieuxma outlines several approaches to help construct their proposal. These explorations pushed into neighbouring approaches including Universal and Inclusive Design, as well as Feminist, Socially Responsible, and Participatory design. They culminated these views into their own approach, Appropriate Design. The research follows in the broadened outlook to include Feminist, Socially Responsible, Participatory, and Appropriate Design.

Boys also begins to unpack some issues around the marginalization of (dis)abled communities and their compartmentalization. This likely refers to codes and regulations such as the UK Government Building Regulations (2010, 2016 ed.) Document M: Access to and Use of Buildings, or Document K: Protection from Falling, Collision, and Impact. These provide measurable and quantified dimensions for access and use of space. Sanoff (2010) seems to trace a line between these regulations and accessibility movements in the 60’s and 70’s that formed an approach of Accessibility Design.
The tensions between Boys (2017) and Heylighen et al. (2017) also lead to explore internal paradoxes within Inclusive Design. Though attempts to erode the rhetoric of US and THEM – a stark separation between the mainstream and marginalized – two versions of Inclusive Design are sensed. To help separate these, this review into the theoretical framework will refer to them internally as Inclusive Design, and (Neo) Inclusive Design; the final of these nine approaches.

In Steps 3 and 4, publications are retained or rejected for the review, then charted “for synthesizing and interpreting qualitative data by sifting, charting and sorting material according to key issues and themes” (Arksey & O’Malley, 2005, p. 26). In total 120 publications emerged during the review. A deadline was set to avoid overflow and allow for enough time to complete the review. This eventually excluded some approaches or references that could have been considered. Still, since the review was devised to set a foundation in theory to support inquiries in practice, it is expected that practitioner contributions will fill in or highlight significant gaps. Their insight is set to evolve the proposed notions distilled from the review and allow for new and refined conceptualisations to emerge. Each publication was analysed to identify answers for RQ1, RQ2, and RQ5 (understandings of inclusion in design practice, the ways practitioners advocate for and negotiate inclusion in their projects, and ways of improving uptake), later contributing to answer RQ4 (prevalent parts of designing inclusively). When seemingly valuable insight into the research questions was presented, it was quoted in an excel spreadsheet to be considered as part of the review. For example:

<table>
<thead>
<tr>
<th>Source</th>
<th>Approach</th>
<th>Quote</th>
<th>Comments</th>
</tr>
</thead>
</table>
Studies show that inclusive design is understood by architects and other built environment professionals in multiple ways [10, 12]: inclusive design is considered as a set of good intentions, a basic attitude that seems to be associated with accessibility and functionality; it is also considered as utopian [16], since its goal to design for everyone is impossible to reach. (p. 507) | Architectural professionals  
Good intentions  
Functionality, Accessibility  
Seen as utopian... |

*Table 1: Example entry from study selection and review*

In total, roughly 175 entries were made into the spreadsheet, and 78 publications were used to form this chapter (and the scoping review). This included:

- Academic literature (such as case studies, theses, journal editorials, and systematic reviews)
- Books (such as reviews about (dis)ability, or curated presentations of different projects about inclusivity)
- Laws and regulations (such as the American with Disabilities Act, and UK Building Regulations)
• Workshops and Conversations (including a workshop by Anna Farley at the 2019 EXPLORERS Conference)

As part of charting data, entries were sorted into themes. The following chapter will collate, summarise, and report findings (scoping review, step 5). This includes an overview of the exploration into the nine approaches (Section 2.2), and a closer look into research about designing inclusively (Section 2.3: discrepancies between theory and practice, concerns, and strategies for uptake). Finally, an attempt at clustering the landscape is made (Section 2.4: proposed notions). The notions are later scrutinised and evolved with practitioners as part of scoping review procedures (Step 6 Expert Consultation).

2.2. Exploring Nine Approaches to Inclusion in Design

2.2.1. Accessibility Design

Accessibility design emerged from accessibility movements of the 1960’s and 1970’s when (dis)abled communities began to advocate for a more universal access to public spaces (Sanoff, 2010). It was a social movement of citizen participation that ignited a growing sense of social responsibility in creating accessible public physical environments. A key moment for accessibility design was the Capital Crawl held in 1990 in Washington D.C. which, according to Hamraie (2017), secured the movements’ uptake. People with disabilities portrayed their accessibility issues and the divide between law makers and the accessibly marginalised.

Figure 3: Capital Crawl (Hamraie, 2017)

These advocates and protesters moved out from their wheelchairs or mobility supports to crawl up the hundreds of steps leading to the American Congress. This poignantly illustrated their struggles and power imbalances with government by forcing staff to step over or around them. This demonstration served as a catalyst to the enactment of the Americans with Disabilities Act (1990). The Act provides guidelines to designing public spaces according to more diverse levels of mobility,
not just for able-bodied citizens (Hamraie, 2017). Architectural changes that followed included ramps, lifts, and larger public toilets (Nieuwma, 2004).

Given its strong ties to the capitol crawl, the approach is often interpreted as a practice bound by the concept of wheelchair accessibility; Welch (1995) explains that more recent research in other approaches such as Universal Design distance themselves from Accessibility design to push beyond the concept of wheelchair access. Reflections by Welch and Hamraie lead to suggest that Accessibility Design is used to provide access to environments regardless of physical mobility issues, but is most often associated to mobility challenges, namely wheelchair access.

### 2.2.2. Design for All

It seems the term 'Design for All' appeared as part of the Stockholm Declaration by the European Institute for Design and Disability in 2004. It was an evolution from Scandinavian research on “A society for All” which advocated for improved socio-political welfare policies during the 1960’s. The approach works to acknowledge the importance of social inclusion and reflect this back on the designs introduced into society (EIDD Stockholm Declaration, 2004, p. 1):

> Across Europe, human diversity in age, culture and ability is greater than ever. We now survive illness and injury and live with disability as never before. Although today’s world is a complex place, it is one of our own making, one in which we therefore have the possibility – and the responsibility – to base our designs on the principle of inclusion. [...] To achieve this, the built environment, everyday objects, services, culture and information in short, everything that is designed and made by people to be used by people must be accessible, convenient for everyone in society to use and responsive to evolving human diversity.

Design for All advances the design for human diversity, social inclusion, and equality, aiming to “enable all people to have equal opportunities to participate in every aspect of society” (EIDD Stockholm Declaration, 2004, p.1). The declaration equally advanced that “the practice of Design for All makes conscious use of the analysis of human needs and aspirations and requires the involvement of end users at every stage in the design process” (p. 2). This presents a deeply complex practical challenge of designing for the convenience of all cultures, abilities, and ages. Despite the concern for representation and inclusion, there is the inevitable issue that “on the one hand, they prescribe to address the needs of the widest possible audience in order to take into account human differences. On the other hand, taking human differences seriously seems to imply that nothing can be designed that meets the needs of everyone, so that ‘the widest possible audience’ may turn out to be severely restricted” (Bianchin & Heylighen, 2018, p. 2).

Design for All is often paired with Universal Design, Accessibility Design, and Inclusive Design. According to Newell et al. (2011, p. 18) it is part of “a number of initiatives [that] have been launched to promote a consideration of people with disabilities within the user group in product
development teams, with titles including: ‘Universal Design’, ‘Design for All’, ‘Accessible Design’, and ‘Inclusive Design’”. Clarkson and Coleman (2013, p. 1) echo the Design Council’s view that they are continental shifts, where Inclusive Design in the United Kingdom is “also known in Europe as Design For All and as Universal Design in the USA”. Bianchin and Heylighen (2018, p. 2) equally refer to the Design Council to explain that the differences are continental and choose Inclusive Design as an umbrella term since they all aim to “ensure that [...] products and services address the needs of the widest possible audience, irrespective of age or ability (Design Council 2009)”.

As outlined, although Design for All shares in many aspects of Inclusive Design and Universal Design (further discussed below), its endeavours can complicate uptake - perceived as utopic, paradoxical, or simply too complicated to achieve in practice (Steinfeld & Tauke, 2002; Heylighen et al., 2017). Through exploring the landscape, this review could summarise and interpret that Design for All asks of designers to involve end users along the development process to achieve a design outcome that is equally accessible and convenient for every age group, cultural background, and level of ability.

2.2.3. Universal Design

Universal Design emerged as part of the accessibility movement; American Architect (and wheelchair user) Ronald Mace (1985) proposed Universal Design as “a way of designing a building or facility, at little or no extra cost, so that it is both attractive and functions for all people, disabled or not”. Their proposed approach stems from lived experiences as a wheelchair user. Universal Design was a matter of creating solutions within real-life design constraints (namely financial) that provided both (dis)abled and able-bodied people with functional, desirable, and accessible environments.

Universal Design evolved into an approach that aimed to satisfy everyone; according to Covington and Hannah (1997, p.14) “Universal Design is the idea that everyone should have access to everything, all of the time”. Hamraie (2015) explains that Universal Design became more about good design for everyone, and in turn outcasted the disability community: “encouraged was this idea of disability as a hinderance to design rather than a resource, therefore disability became a liability [...] for what could be counted as good design and that’s still a very dominant conception of universal design today that is problematic”. Nieusma (2004, p. 15) also comments on these conceptions of Universal Design, saying they “are conceptually problematic, because they imply that trade-offs and compromises need not be made. [...] Trade-offs are always required and redirecting design towards the needs of those marginalised by specific physical conditions means other priorities go unmet”. Universal Design - as Nieusma proposes here - seems to disengage with the practical challenges of project development and the complexities of design practice, namely negotiating design objectives and outcomes. Problematically, Ostroff (2010, p. 1.6) points out that “the term universal design has
been inappropriately adopted by some architects, especially in the US, as a trendy synonym for compliance with the Americans with Disabilities Act”. Hamraie (2015) adds to this by saying:

Phrases like all users or everyone should also give us a little bit of pause, because, so often, these ways of talking about users actually flatten the differences between instead of appreciating the differences that are significant or that would require different access needs. There’s actually nothing about terms like universal or all users that ensures that designers will remain accountable to disabled users, and nothing that recognises the political demands of marginalised users.

It appears that what started as a social movement for disabled users broadened to include everyone (disabled or not) and developed a utopian character that some, adversely, said could be achieved by simply complying to established regulations. Ultimately, Mace’s proposal - to create functional and attractive solutions for disabled people that require no extra costs in the design process - faded.

In 2014, Imrie and Luck reframed the problems of Universal Design. In one way, they showed how it could have “a major role to play in rehabilitation by fostering environments that work well, by facilitating independence, and as a means for people to act in spontaneous, proactive ways”. This echoes Imrie and Hall (2001, p. 16) who proposed that “the principles of Universal Design are important [...] in seeking to restore disabled people’s self-esteem, dignity, and independence”. In reforming the utopian character of Universal Design, Imrie and Luck (2014, p. 1316) challenge status quo practices and re-establish an awareness of the complexities to designing with Universal Design; they explain that

Products are not perfect or able to respond to every possible variation in bodily interactions with design. They highlight, however, that any notion of “one size fits all”, or the rationalities of a design culture driven by scale economies and product standardisation, is tantamount to social exclusion, and likely to create inequalities of access to, and usage of, the designed environment. This underlying proposition is a universal ethical imperative against design that undermines the capacities of people to facilitate their ease of movement through, and use of, different elements of the designed environment.

Their reframing embraces the utopian character of Universal Design, not as a standard but as something to work towards through proposed principles of Universal Design: Equitable, Flexible, Simple and Intuitive Use, Perceptible Information, Tolerance for Error, Low Physical Effort, and Size and Space for Approach and Use (for details see Connell et al. The Principles of Universal Design, 1997). Imrie and Luck (2014) also lead into the ethical dimensions of social inclusion, wherein Universal Design can confront consequences from the design process and outcomes that impact the end user. Universal Design principles can draw attention to interactions between design solutions and diverse human conditions: “Such interactions, and their manifold complexities, can be understood as part of a universal human condition, of people struggling to be part of the world in ways whereby their self-respect and dignity may be enhanced” (Imrie & Luck, 2014, p. 1316). The principles, and interactions between users and artefact can help articulate shared values and
resonance between users. As Kelly (2018) points out, Universal Design has less to do with consequentialism – which is often linked with democratic practices and decision making according to a majority, or the status quo – and more to do with virtue ethics that reflect on the values behind individuals and their actions.

Ultimately, Universal Design has multiple interpretations; it can be proposed as a paradoxical and utopian approach that satisfies every possible need, desire, and ability, as a bespoke approach driven by the values and contexts of users, or sometimes as an accreditation to following regulatory accessibility guidelines (a trendy synonym of Disabilities Acts). Amidst the many characterisations, this research proposes Universal Design as a way to confront common accessibility challenges and propose solutions that not only resonate with a greater diversity of users, leading to their improved independence, but does so within value-driven constraints to offer users a functional and attractive solution.

2.2.4. Participatory Design

Participatory design shares intrinsic characteristics with inclusion – namely to amplify and acknowledge diverse voices within decision-making processes. According to Suchman (2011, p. vii), Participatory Design has a “central and abiding concern for direct and continuous interaction with those who are the ultimate arbiters of system adequacy; Namely, those who will use the technology in their everyday lives”. Indeed, Participatory Design seeks to engage users, designers, and other decision makers into “an attitude about a force for change in the creation and management of environments for people [that] cuts across traditional professional boundaries and cultures” (Sanoff, 2010, p. 12).

With an interest for collective decision making, Participatory Design has been underpinned by democratic processes. Sanoff explains two forms of democracy within the approach: Participatory and Deliberative. Participatory democracy upholds a traditional democratic philosophy wherein everyone is given the opportunity to voice their views within governing systems (Olsen, 1982). At the best of times, all citizens take part, first learning the required skills to “effectively participate in various ways in the making of all decisions that affect them” (Sanoff, 2010, p. 13). Yet, the real-world use of participatory democracy has been criticised to misrepresent an evolving society wherein established governing practices are less tolerant to deviations from the cultural norm (Rosener, 1978). As it is scaled up to represent large groups, participatory democracy can fall into Hamraie’s (2017) warnings: to persistently alienate marginalised groups and uniquely represent majority perspectives. In this way, fairness is put at risk by failing to actively recreate, represent, and realign societal values. Deliberative democracy is guided by Atlee’s (2003) concept of collective intelligence;
a shared insight negotiated through group interaction. According to Fischer et al. (2005), the development of shared outcomes is partly responsible for favourable participatory design. As Sanoff (2010, p. 14) explains, the approach is “based on the ability of groups to sort out their collective experience in ways that help to respond appropriately to circumstances—especially when faced with new situations”. This approach also shifts the scale from systemic to localised (and often community-based) participation (Atlee, 2003). Finding consensus within a deliberative democracy framework is said to improve a sense of community and empowerment, where participants (users, citizens) sense they have greater control over their affairs (Rapoport, 1987).

Frauenberger et al. (2014, p. 99) highlight the importance of understanding the collective views and values of those involved (users, practitioners, and other stakeholders alike) such that “careful reflection on practices and decisions is required in order to understand the impact of these values on a design process”. Sanoff explains that framed participation, objectives, and outcomes play a significant role in Participatory Design’s success (2010, p. 15):

The planning that accompanies the development of any participation event should first include a determination of objectives to, for example, generate ideas, identify attitudes, disseminate information, or review a proposal. The list of possible participation objectives will differ from time to time and from issue to issue. Once the objectives of community participation are stated, it becomes clear that participation is perceived according to the type of issue and people involved. If differences in perception and expectations are not identified at the outset, and realistic objectives are not made clear, the expectations of those involved in the participation program will not have been met, and they will become disenchanted.

The value of user engagement is compromised or lost when participation is not well framed – organised or guided. However, others criticise that this approach outlines vested designer interests, and can undermine participants and their experiences (Palmas & von Busch, 2015). It is argued that navigating user insight through framed participation will contribute little to the innovative potential of participant-led design practice (Kelly, 2018). It is difficult to say where a line should be drawn. Van der Linden et al. (2019, p. 82) sympathise with the designer’s challenge and note that from an individual perspective “juggling with different social actors’ expectations can feel like being caught between four fires’ [user, designer, stakeholders, manufacturing, ...]. Given all these different parties involved - with or without a voice in (particular stages of) the project - making decisions for the benefit of ‘the user’ can be hard”. Still, it is not really defined how these equal opportunities take form. Some agree that users and their lived experiences should play a central, direct, and continuous role in the arbitration of a design process, yet the level of direct and continuous interaction is largely debated (Suchman, 2011). Although they may have expertise in their lived experience, this does not readily translate to an expertise in devising design objectives and solutions. As (forms of) Participatory Design evolve towards an increasingly user-led approach,
Tonkinwise (2019) raises important questions like ‘Who is included, how are they involved, and how are they recognised or compensated?’.

In summary, Suchman (2011) asserts that users and their lived experiences should play a central, direct, and continuous role in the arbitration of a design process. This review can interpret from research that the level of direct and continuous interaction, however, is largely debated. Designers, users, and other decision-makers must agree on a shared understanding of the goals, means of achieving them, as well as the roles, responsibilities, involvement, and compensation of participants (especially users). Within a thoughtfully framed design context where users (citizens, participants) are central to the process, Participatory Design can improve outcomes, foster a sense of community and empowerment in people, and enable social justice. Although, achieving consensus across a broader society through deliberative democracies (that still represent a majority) is in many ways incompatible with principles of fairness. As Tonkinwise (2019) points out, successful inclusive practices are often exclusionary and undemocratic, positioning marginalised groups ahead of mainstream or majority needs.

2.2.5. Feminist Design

Feminist Design criticises the gendered oppression (of women) within society and further through the design of our everyday (Nieusma, 2004). Feminist design theorists argue to transform and dismantle dominant perspectives that position women as oppressed and marginalised within society; As Campbell (2000, p. 50) proposes, Feminist Design is used to transform entrenched patterns of social understanding, or governing mentalities, which “guide prevailing interpretations of events and evidence [and] are the cultural processes of formation and figuration that shape public policy debates and outcomes”. This approach argues that our designed environment is underpinned by dominant (male) perspectives and values. According to Cockburn and Ormrod (1993, p. 159), “technology is gendered. We collectively gender it of course; but in turn, it individually genders us”. According to Vostral & McDonagh (2010), designs are (predominantly) made for able bodied male users..

Given the pervasive and embedded nature of governing mentalities, there are no straightforward solutions to mobilising design for social change. Reforming governing mentalities requires a deep understanding of entrenched thinking, of naturalized definitions of ‘women’ and ‘womanhood’, and of the ways design priorities are determined (Nieusma, 2004). According to some feminist designers and design advocates “egalitarian architectural forms cannot simply be superimposed on a pre-existing social order and be transformative in themselves” (Wajcman, 1991, p. 126). This first leads to dismantling social hierarchies that underlie power inequalities. For Rothschild (1999) this involves
amplifying women’s voices across the design landscape – from highlighting their contributions to the field, forming an explicit understanding of their needs, and empowering them in ways that cut across normative gendered lifestyles. These efforts clearly resonate with other approaches that work to improve the social inclusion, representation, and agency of marginalised groups. Indeed, as Nieusma (2004, p. 19) mentions, “there is an important and long-standing tradition within feminist theory claiming that all processes of marginalisation, not only the marginalisation of women, are the subject of feminist analyses”. Yet, recent practical examples of successful feminist design are difficult to find: “There have been few examples of feminist work in industrial design since the year 2000. This shortage limits this body of work by preventing depth and breadth of discussions” (Prochner, 2016, p. 2656). McCann & Kim (2010) argue that it is ever-changing: according to the time, place, and context of each feminist critique. It is difficult to delimit a design as explicitly feminist or not. Prochner (2018) also explains that current feminist design research is often reflective, explaining the essence of an approach, rather than explicit design criteria. Overall, Feminist Design can be described as a discourse for transforming or dismantling governing mentalities that lead to the oppression or underrepresentation of marginalised people (specifically women) in mainstream society.

2.2.6. Appropriate Design

Nieusma (2004) presented an important paper for this Ph.D. research called Alternative Design Scholarship. Their paper defines and details many approaches such as Feminist Design, Universal Design, and Participatory Design. In outlining various characteristics, Nieusma proposes an approach that encompasses significant features from each. Appropriate Design is explained as an analysis into “how technologies and other designed artefacts are implicated in larger social problems, such as rampant consumerism, sexism, ecological abuse, lack of user participation and autonomy, and restricted access to built environments, among others” (Nieusma, 2004, p.12). This proposed practice reflects on entrenched patterns in society “specifically with regard to thinking about how social power operates in design, and how it should operate to more adequately address the needs of marginalised social groups” (p. 23). Interestingly, Appropriate Design inquires on behaviours that warrant social concern and transcends the boundaries of an individual (i.e. gender, age, sexual orientation, disability). Nieusma proposes four elements to Appropriate Design (2004, pp. 23-24):

1. **Appropriate design accounts for diversity and disagreement.** Designers should account for as much diversity as possible when conceptualizing users, but they also should recognize that some interests conflict and that trade-offs must be made. Assuming there will be disagreement about desired ends, and then squarely addressing the
disagreements, is more likely to empower users than is avoiding potentially contentious areas.

2. **Appropriate design accepts and copes with uncertainty.** Designers should avoid command-and-control approaches. While striving for greater robustness in design is a worthy goal, designers should be wary of claims to comprehensiveness. Rather, by anticipating uncertainties and then systematically preparing to cope with them, designers will be better prepared when nasty surprises surface.

3. **Appropriate design recognizes the importance of governing mentalities.** Designers should understand that the forces shaping dominant design norms run deep. The governing mentalities that shape what is “good,” “right,” and “true” are the most difficult to identify and the most important to challenge. While governing mentalities cannot be rejected outright, they can and should be continuously challenged in design practice.

4. **Appropriate design theorizes agency-structure tensions.** Design practices are constrained both by design ideologies and by macro-structural conditions, especially market forces. Within constrained spaces, however, lie opportunities for creative acts. Designers should recognize both the extent and the limitations of these constraints: some constraints can be avoided; others can be turned into productive stimuli. The trajectory of design careers, like that of designed artefacts, is neither fully free nor predetermined.

Appropriate design seems to share core characteristics with other approaches in the theoretical landscape and nicely addresses some key challenges and complex responsibilities designers should embed into their decision-making: This includes drawing exclusionary lines to user involvement (Tonkinwise, 2018), allowing for more mutable design processes (Connell et al., 1997), working alongside or against deep rooted societal values (Campbell, 2000), and achieving design solutions within practice-based boundaries (i.e. time to market, stakeholder satisfaction, economic viability, ...) (Dong et al., 2003). Nieusma ultimately recognises the resilient, pervasive, and diverse barriers to social change. Namely, designers feel paralysed and over constrained by dominant incentives and structures, and they lack the scale of projects to create broad social change. In the end, Nieusma (2004, p. 24) believes “designers are faced with a double bind, which requires humility and diligence, more than anything else, to negotiate”. This review has outlined that Appropriate Design is devised to tackle dominant design and societal norms, and advocate to help groups marginalized by social behaviours and issues, all within practice-based constraints.
2.2.7. Super Normal Design

The ethos of Super Normal Design focuses on the intrinsic parts of our everyday lives that are both essential, yet implicit. Just as inclusion, it proposes that designs should seamlessly fit into our everyday: Designers Fukusawa and Morrison (2007, in Brown & Pullin, 2019, p. 594) introduced the term “super normal” to describe the commonplace normality of things: “Objects become super normal through their use and feel of natural familiarity, becoming iconic archetypes”. They embed themselves into the fabric of societal culture and practice. According to Morrison (2015):

Super Normal began with an understanding or rather a gradual noticing that certain objects, usually the more discrete type, and mostly, though not inevitably, anonymously designed, outperform their counterparts with ease when it comes to long-term everyday use. Why that should be seems worth understanding if we are to design more real, lasting, and pleasing things and avoid the designer’s trap of placing too much importance on how things look.

Morrison completes this idea by explaining that super normal objects have an instinctive quality that naturally guides their use. They are intended to be taken for granted and “attach themselves to our everyday existence in a way that would leave us at a loss without them” (Morrison, 2006). Design researchers Brown & Pullin (2019) adopt the concept of Super Normal as a distinct approach to designing for disability that calls on designers to embrace the everyday. It is a proposed manifesto for future researchers and designers; a way of delivering new ideas that will embed themselves into society and promote a sense of acceptability from disabled users in their social and physical environments (Pullin, 2020). Designers would reflect on interpretivist models of disability which are constructed from the complex physical and emotional lived experience of disabled people in society. It draws attention to the subtleties of context, individual, and object in a way that “the reality of an object is only perceived within the meaning of the experience of an individual” (Creswell, 2007, p. 59). Inspired by Dieter Rams, Pullin (2020, p. 7) proposes that Super Normal resonates with the philosophy behind the Ten Principles for Good design to advance that “good Design is as little Design as possible”. A Super Normal Design approach plays out different across dominant cultures and contexts to propose solutions that adapt to the specific needs of disabled users and seamlessly embed themselves into the contexts in which they are used.

2.2.8. Inclusive Design

The term ‘Inclusive Design’ was introduced by Roger Coleman (1994, p. 251) “arguing that needs and abilities change throughout the life-course and that by taking account of this in the design process, products, services and environments can be improved for the majority of customers in ways that are not associated with negative perceptions of age or disability”. More recently, the British Council
(2009) highlighted that the uptake of Inclusive Design was attributed to an ageing population and growing interest to better integrate disabled people in mainstream society.

There are several examples of Inclusive Design in practice and research. Schelings & Elsen (2017) presented the redesign of a town hall informed by experiences of people with Downs Syndrome in the space. Luck (2018a) reported on the design of a wheelchair bumper for football players, and the Photoworks Gallery (2019) in Brighton designed an exhibition (and process) alongside the artist who identifies as a neurodiverse autistic adult. These examples use Inclusive Design to redress the disadvantages older and disabled people face in society. The efforts work to transform governing practices and designs that can outcast what are considered minority groups (Vermeersch et al., 2018). The examples equally show that disability is diverse. In this way, some researchers advance the idea that users are temporarily abled-bodied, and their abilities change over the course of their life; Heylighen et al. (2017) explain how curb cuts can benefit older users with walking aids, wheelchair users, parents using trolleys or prams, or younger people with temporary injuries. It seems designing inclusively through disability has far reaching benefits. At the EXPLORERS conference (2019), Anna Farley presented a workshop on barriers they faced as a disabled artist, from accessing spaces, to applying for grant applications. During the workshop, participants were invited to make improvements to an online application form. After deliberating, multiple changes were proposed to make the form easier to manage which all agreed would benefit every applicant. Design changes can however create concerns for other users: although curb cuts are “important for wheelchair users and resonating with the needs of people with a pram or trolley, [they cause] problems for pedestrians who are vision impaired and who rely on a sharp curb to detect the edge of the sidewalk” (Heylighen et al. 2017, p. 510). According to Steinfeld & Tauke (2002), these complex issues are the designers’ responsibility, who “should be able to design an environment that will benefit everyone, not just temporarily able-bodied people.

These paradoxical issues are well observed and vex designers who struggle to draw inclusive lines to involvement, which adversely exclude certain users and abilities. To mobilise Coleman’s proposal of Inclusive Design, it could be interpreted as the design of environments and artefacts according to the concerns of ageing and disabled people, informed by contextual cues from the design objectives. In other words, it consists of designing everyday objects and spaces with users or potential users from often marginalised minority groups (specifically ageing and disabled people) according to their impairments.
2.2.9. (Neo) Inclusive Design

(Neo)Inclusive Design should not be considered as a distinct practice or approach but is used in this research to delimit Inclusive design as it progressed into a broadened understanding of social inclusion, marginalisation, and disability. It is similar to saying post-inclusive design to indicate a process of elaboration, evolution, and change.

Clarkson and Coleman (2013, p. 1) observed that social inclusion has progressed into a broader understanding of (dis)ability: “These developments have progressively shifted the focus from THEM - the elderly and disabled in academic parlance - to US”. This proposes an increasingly inclusive practice that transcends age and ability. It aligns with directives by Laslett (1989, p. 22) that “we have to conduct our lives as far as possible not simply in remembrance of our former but in the presence of our future selves” including hopes and aspirations. This seems to resonate with an empathic approach where the designer makes use of their “intuitive ability to identify with other people’s thoughts and feelings – their motivations, emotional and mental models, values, priorities, preferences, and inner conflicts” (Fulton, 2003 in Koskinen et al., 2011, p. 52). Although embedded in a paper that considers Inclusive Design, Universal Design, and Design for All as interchangeable, Heylighen et al. (2017, p. 510) report that “more recently, Inclusive Design has evolved towards a wider understanding of diversity beyond age and ability [and] include[s] cultural and social differences, gender, sexuality, and the intersection thereof”, although, it is difficult to say where the lines are drawn here as their references equally rely on Universal Design, or intermix inclusion, usability, and universalism. Regardless of possible entanglements with Universal Design and Design for All, a shift from ageing and ability – commonly associated with biological and biomechanical impairments – is evident in Inclusive Design. It is a broadened approach that transforms the rhetoric into both usable and socially accessible. Clarkson and Coleman base this on interactions with an environment and resituate (dis)ability as “a social model in which people have disability thrust upon them by inadequate design, inconsiderate services and environments, and cultural stereotype”. Disability is given a new dimension that recognises possible contextual marginalisation. These new perspectives agree with parts of Queer Theory design that, according to Myers & Crockett (2012, p. 60) “recognis[es] that hegemonic normative identities inevitably ‘require and produce degraded others’, thus normalization of marginalized identities is problematic insofar as it reinforces stigmatization of subaltern groups and appropriates (potentially) resistant identities into the hegemonic system”. This equally echoes challenges cited in Feminist Design when confronting governing mentalities and advocating for marginalised groups which work to break down or transform the status quo. Constanza-Chock (2020, p. 72) link these ideas of appropriation to continued industry practices: “Many laud the benefits of “diverse teams” for capitalist profitability.
Sexist and racist discourse and practice within the technology industry are nearly always delinked from broader and deeper critiques of the ways that tech reproduces white supremacy, heteropatriarchy, capitalism, and settler colonialism—not only through employment practices, but through all aspects of technology design”. They highlight the diverse intersections of marginalisation beyond ability and explain how – despite a frame of “employment diversity” – many organisations do not engage deeply with their own oppressive outlooks and approaches (Constanza-Chock, 2020).

It seems that in broadening the concepts of accessibility and disability, Inclusive design gains a socio-contextual and interpretivist dimension. Inclusive design recognises human plurality and a character of equality across society, specifically for users and potential users of environments and artefacts (Arendt, 1958). This may have led to broad generalisations that Inclusive Design is “to include as many people as possible” (Heylighen et al., 2017, p. 507), which equally explains the view that Inclusive Design, Universal Design, and Design for All are interchangeable. The concept of equality has also caused concern in creating ties with Participatory Design. Inclusive Design has more recently gained a dimension of fairness and justice often associated with the democratic foundations of Participatory Design (see Bianchin & Heylighen, 2018; Tonkinwise, 2019). However, again as Kelly (2018) explains, consequentialist ethics serve a majority and do not align with value-driven virtue ethics that can underpin Inclusive Design. After all, the approach is drawn to include and advocate for the needs, values, and lived experiences of marginalised and sub-altern groups that fall outside of a status quo.

Inclusive design’s strength may reside in its contextual awareness of accessibility and marginalisation. It understands that “there is no boilerplate design solution or (co-design) process that can be cut-and-paste from one situation to the next (Lee, 2012, 2014), nor reliable characteristics for a ‘type’ of disability (Hendriks et al., 2015)” (Luck, 2018b, p. 100). It also advocates for an informed design process where designers create knowledge using more than their intuition: “let people speak for themselves, to document their own experience, to tell their own stories revealed through a range of ethnographic methods” (Dewsbury et al., 2004). These practices place user knowledge and experience at the centre of Inclusive Design practice. Dong et al. (2013) agree that current Inclusive Design research continues to broaden and deepen our understandings of user involvement. They equally pointed out a growing focus on the roles and responsibilities of practitioners to engage effectively with inclusive practices: “Asking questions about knowledge needs and the characteristics of knowledge users [i.e. designers] added a whole new dimension to the research task” (Dong et al., 2013 p. 284). Indeed, research points out the responsibilities of designers (practitioners) to strike the complex balances between marginalised and governing mentalities: “the politics of every, each different, design situation hinges on our treatment of
individual and collective views” (Luck, 2018b, p. 98). Even so, others report on the critiques that hinder uptake in practice: (i) it lacks scalable solutions (Heylighen et al. 2017), (ii) it is unrealistic in addressing the needs of all (De Cauwer et al., 2009), and (iii) continues to rely on intuition and assumptions about the lived experiences of marginalised groups (Van der Linden et al., 2017).

To establish a practical understanding of Inclusive Design today, this research proposes the following: Inclusive Design has broadened its understanding of (dis)ability and accessibility to allow for contextual challenges faced within everyday life by diverse marginalised groups. It makes use of their lived experiences to improve the quality of life of individuals amidst a collective setting. This sometimes implies complex negotiations between governing mentalities and marginalised views. Designers must empathise and explore diverse needs, values, and abilities to strike a balance that is often unique and difficult to scale or readily translate to other contexts. Nevertheless, it is believed that continued systematic use of Inclusive Design will lead to a more socially and physically accessible world for a growing number of people.

2.3. Research About Designing Inclusively

Amidst the broad and complex theoretical landscape, many research projects have already investigated the uptake of designing inclusively. As a reminder, the term designing inclusively is used in this research to cut across the different outlooks, practices, and approaches that advocate for improved inclusion. Although, many have focused more closely on the theorisation of inclusion. The following section looks into research about inclusive practice. Specifically, these studies report on the gaps between inclusive design theory and practice, investigate practitioner understandings of inclusion, and report on strategies to increase uptake. Some of these discrepancies, perceptions, and strategies are described in further detail below.

2.3.1. Discrepancies Between Theory and Practice

Through learning from design, architecture, and design engineering firms, researchers have already highlighted some of the notable disconnects between designing inclusively in theory and practice. Whilst involving users in the design development stages is considered essential to designing inclusively, accessing users is not always straightforward (Dong et al., 2003). According to Heylighen et al. (2017), user involvement is not yet common practice in architecture. Problematically, clients are not often the ultimate users of a design or space (Zeisel, 1984). Ielegems et al. (2019) suggest that designers can be quite disconnected from users – informed instead by clients who provide their own testimonials or data about their target audiences. Although focus groups can inform designers about user needs, “the results from focus groups can be contradictory and are not always useful and
reliable. It is difficult to find informative user representatives” (Dong et al., 2003, p. 112). Recruiting users who accurately represent a given group is rarely guaranteed. These issues also affect the overall time and budget – using resources to identify users, recruit and organise data collection, and develop strategic questions and prototypes that inform the user, but protect client confidentiality (Heylighen et al., 2017). Many have already highlighted the importance of user involvement from the outset of a project and along each stage of the process (EEID, 2004; Sanoff, 2010; Suchman, 2011; Van der Linden et al., 2019). Yet, the development process itself is not always designed to incorporate these practices. As Pirkl (1994) illustrates, some markets are not formatted to learn about users:

![Figure 4: Pirkl’s (1994) Market Equation (as illustrated in Dong et al., 2003, p. 112)](image)

The new equation is proposed to accommodate the process of designing inclusively by allowing space to further understand the design problem, rather than respond exclusively to a market. Overall, researchers seem to boast the value of user contact in theory yet underestimate the challenges to do so in practice. User involvement includes thoughtful recruitment, effective data collection methods, accurate means to analyse and distil data, and most importantly clients who are interested and eager to allocate time and money to conduct the research.

### 2.3.2. Concerns about Designing Inclusively

The different concerns about designing inclusively held by designers, clients, and other stakeholders in a project can significantly hinder uptake. Chapter 1 already highlighted the nuances between Architects and Industrial Designers disciplinary differences; or differences when working with different scales (Krampen, 1984) or within different ecologies (van der Bijl-Brouwer & Malcolm, 2020). As projects become increasingly complex and include various parties, some may not have any direct contact or interest in user needs: Their roles are bound within a specific design stage or responsibility (Chiocchio et al., 2011). For example, materials engineers may exclusively focus on the stresses, resistance, or durability of a product. Although these criteria may have derived from user testing, they are distilled into requirements that focus on the material, not the user. As Holmes
(2018) suggests, stakeholders work within different degrees of inclusion (or exclusion). Moreover, it’s suggested that the importance of user involvement is set aside as teams grow:

As an individual or a member of a small team, you might have a high degree of control over all of the elements in this cycle. With practice, you can learn to recognize and remedy exclusion at your own pace. Larger organizations often have a harder time coordinating the elements of this cycle. Sometimes the elements are isolated silos that are disconnected from one other. This issue is aggravated when leaders try to build inclusion through only one element of the cycle. (Holmes, 2018, p. 24)

Depending on their roles, responsibilities, and the size of projects, the impact of attempts at inclusive practice may be lost. Many within a larger team may not find value in designing inclusively and consider it overly time consuming and expensive (Dong et al., 2003). This comes despite the value of broader relevance, or translatable benefits from one user group to the next (Clarkson & Coleman, 2013).

Designers may also find they have limited knowledge about including and learning from users within marginal groups. They may avoid involvement altogether for fear that they inadvertently offend during discussions (Dong et al. 2003). Designers may instead rely heavily on regulations and standards which provide objective and quantified ‘facts’ to accessibility (such as minimum heights, and threshold dimensions) (Heylighen et al., 2017). Yet, these provide little insight into the reasoning behind specific dimensions, sometimes leading to erroneous application (Manley et al., 2011). This can encourage a ‘tunnel-vision’ or siloed approach to inclusion and access that undermines its value (Ilegems et al., 2019) According to Holmes (2018, p. 46), designers also often use their own abilities to design: “there is a natural inclination to use yourself as a shortcut to make assumptions about the people that you’re designing for”. Holmes (p. 46) refers to this as an ability bias – “a tendency to solve problems while using our own abilities as a baseline. When we do so, our solutions end up working well for people with similar abilities and circumstances but can exclude a much wider group of people”. These biases can also influence how we interact with users. Focus groups and questionnaires can sway according to predetermined outcomes held by the designer or facilitator (Dong et al., 2003). These can negatively impact the value of inquiring upon users, to no fault of their own.

Looking beyond the scope of inclusion, concerns about perception clearly resonate with research on general multidisciplinary team-based design. For instance, in multidisciplinary project development, team members are often already experienced with designing and teamwork. Their expertise supports the project, and they have learned through experience to work more effectively as a group with shared design objectives; they may share languages and ways of working across the project that facilitate communication (Bucciarelli, 1994). While participants (users/stakeholders/beneficiaries) hold contextual expertise from their lived experiences, their role in the design process in not always
clear. Kleinsmann et al. (2007) explain the value of shared understanding and negotiating different perspectives as a critical part of effective teamwork, and (Rosen, 2007) underscores the importance of enablers to collaboration like community, trust, communication, constructive confrontation, and sharing.

2.3.3. Strategies to the Practical Uptake of Inclusion

Despite the proposed discrepancies between theory and practice, and negative perceptions that affect the uptake of designing inclusively, some supporting strategies are proposed. First, it can be argued that clients should align with the growing interest and trends to design for improved equality, diversity, inclusion, and accessibility (Clarkson & Coleman, 2013; Luck, 2018b). Designers and researchers alike propose different practical contributions to uptake. Gerrike et al. (2017, p. 102) report that many companies view design methods, guidelines, tools, and methodologies as “central for their activities and enable them to be innovators in their field”. Yet, there are concerns about very limited uptake in industry (Jagtap et al., 2014). In this respect, Van der Linden (2017) proposes that designers and architects – interested in designing inclusively - should shift from rigid procedures to open-ended inquiries into users’ spatial experiences. This requires an ability to listen to stories from users, understand their experiences, and distil them into usable design objectives and criteria (Van der Linden et al., 2019, p. 67):

Rather than prescriptive rules or extensive reports, architects preferred open-ended information on experience-related aspects relevant to the design; they particularly appreciated information that is hands-on, visual, rich, structured and reliable; they valued insight into underlying questions, contextual guidance and relation to clients’ motivations as these support decision-making; they appreciated face-to-face communication; and recognised the need for additional sources and tools to engage with users.

Their suggestion still aligns with prescriptive formats, but rather as generalised guidance than strict procedures, or descriptive models that report on best practices (Blessing & Chakrabarti, 2009). They go on further to suggest defining characteristics to these kinds of practical contributions that would be “more compatible with designers’ solution-oriented ways of working” (Van der Linden et al., 2019, p. 67):

Exploratory, since a design proposal looks for something new that transcends the obvious; emergent, since relevant features emerge in putative solutions; opportunistic, since the process is influenced by what is learned along the way; rhetorical, since it aims at developing a compelling argument; and risky, since it involves making a personal commitment (Van der Linden et al., 2019, p.67)

This suggests that design contributions should provide space for exploration and novelty, flexibility in their use, clear compelling arguments to support uptake, and recognition of stakeholder responsibilities and dynamics. According to Daalhuizen & Cash (2021, p.2), these contributions
should “act as information carriers, conveying how to perform specific design practices, through the processing, interpretation, and subsequent change of behaviour by their users”. In the case of designing inclusively, a change of behaviour could focus on supporting an iterative, and reflective approach to learning about user needs.

In the early design stages, Dankl (2013) recommends that this involves a holistic approach to the design brief that aligns with users’ everyday. To support designers in practice, Holmes (2018, p. 48) recommends three skills: (i) Identify ability biases and mismatched interactions between people and world, (ii) create a diversity of ways to participate in an experience, and (iii) design for interdependence and bring complementary skills together. According to Tonkinwise (2019, p. 7), designers should continually widen the scope of those involved: “demanding in every project a widening of the scope of who counts as a stakeholder – including marginalized peoples, by race, class or ability, but also including a wide range of non-users, people from across the whole-of-life supply chain”. They promote an outlook that considers future participants – including those who maintain, dispose of, or reset the designs (i.e., new buyers, tenants, or maintenance staff).

Overall, it seems that designing inclusively is enabled by a greater understanding of users and a reflective and iterative process that refines designer skillsets. It encourages practitioners to take time and learn from everyday users to gain a more accurate and intersectional outlook of access requirements. This focusses on current contexts, but equally considers a look ahead into future possible uses of the design.

### 2.4. Proposed Notions

A broad scope of inclusive practices was explored through a review of the theoretical landscape. Despite the reported complications, conflicts, and paradoxes, there is still interest and need to better understand designing inclusively to support its uptake in practice. This section is a continuation of the Scoping Review to collate and summarise findings (Arksey & O’Malley, 2005). An open coding procedure and thematic clustering (Creswell & Creswell, 2018) was used to form a set of guiding notions distilled from theory. The Cambridge Dictionary (2022), defines notion as “a belief of idea”, and synonymises it with construct, concept, or idea. In more detail, Merriam-Webster provides 3 definitions: (i) An individual’s conception or impression of something known, experienced, or imagined, (ii) An inclusive general concept, and (iii) A theory or belief held by a person or group. A search for the word notion in the literature used to form the theoretical landscape identified 39 papers that used the term “notion”. Examples include:
Reference: Amakali (2017, p. 15)

Quote: Inclusive design is also known as universal design or design for all. The notion of broad inclusive design is that designs consider all the people to the greatest extent possible.

Interpretation of the use of the term: concept, or definition

Reference: Bardzell et al. (2012, p. 293)

Quote: In doing so, we hoped to encourage those interacting with our designs to explore a new, and possibly uncomfortable, world view. We expected that our designs would be quite provocative and elicit strong notions of gender and role in the home and health club. However, study participants reacted otherwise.

Interpretation of the use of the term: ideas, or impressions

Reference: Cain (2005, p. 141)

Quote: One designer opposed the notion that designers should involve users in designing, saying that it depended upon where the designer’s professional remit started and ended. This individual was strongly of the opinion that market research information from professional agencies was the best.

Interpretation of the use of the term: idea, or belief

Reference: Constanza-Chock (2020, p. 38)

Quote: He acknowledges that culture and experience serve to “highlight” some affordances for a given user, but states that this is not “integral to the notion” of affordances. However, there are much stronger claims to be made about the ways that standpoint shapes affordance perceptibility.

Interpretation of the use of the term: conception, or definition

Reference: Van der Linden (2018, p. 167)

Quote: This notion is operationalized in design to think about, e.g., ‘correct’ versus unintended use. In the context of architecture, I use ‘affordance’ to refer to how a space lends itself for a particular interaction with a particular person, in a particular situation.

Interpretation of the use of the term: description, or understanding

Reference: Dong et al. (2004, p.5)

Quote: The results showed that most of the notions of universal design were widely known among all industries in Japan, but the tendency to introduce the idea into its own products varies from sector to sector.

Interpretation of the use of the term: ideas

Reference: Luck (2018a, p.3)

Quote: The notion of attachments emphasises the dynamic relationships formed around issues, which is in contrast with the notion of “frames,” which are usually characterized as relatively stable entities (e.g., entrenched authority structures).

Interpretation of the use of the term: understanding, or characterization

Table 2: Examples of uses of the term “notion” across the reviewed literature.

Across the review, researchers use the term notion to refer to – among others – understandings, ideas, descriptions, beliefs, and conceptions of or about something. It was found that the literature did not reveal any uses of the term outside the definitions proposed by Cambridge and Merriam-Webster Dictionaries. Thus, this research adopts the same general understanding of the term “notion”. It will describe conceptions about the practices and enactments of inclusion in design and project development. It is not assumed that the notions represent the breadth of the practice, rather that they embody more notable and prevalent conceptions of designing inclusively across
design domains, leading towards an answer for RQ4. The following section outlines how clusters were formed and distils the theoretical framework into a first set of preliminary notions.

2.4.1. Clustering the theoretical framework

To make sense of designing inclusively, several approaches were explored and described as part of laying out the theoretical landscape. As a contribution to RQ4, this thesis proposes to identify notions that collect overarching characteristics which cut across the theoretical landscape. This includes different disciplines and practices such as Architecture, Design, Design Engineering and Human-Computer Interaction. Given that their development is exploratory and emergent, a qualitative approach is preferred – the use of open coding and thematic clustering is adopted (further explanations on qualitative approaches to inquiry and open coding in Chapter 3: Methodology). In essence, an open coding process first identifies keywords within documentation, then performs an analysis to cluster keywords into themes (Creswell & Creswell, 2018). These clusters should readily transform into the proposed notions. Thematic clustering focuses on the essence of keywords and allows for shared underlying themes to emerge. This contrasts to other approaches like discourse analysis which “emphasize[s] the constitutive function of language, and address[es] the ways in which power relations are reproduced in narrative accounts” (Cosgrove & McHugh, 2008, p. 78). Such approaches would not suit since each individual, project, and attempt at inclusion can hold different framings of the intentions, goals, and means of achieving them (Dong et al., 2013). Moreover, some conceptualisations of inclusion use keywords interchangeably (Heylighen et al., 2017), whilst others discuss the same issues through considerably different idioms, jargon, or discipline-based languages (Bucciarelli, 1994). Open coding should help cut through these issues and propose a more holistic representation of the landscape.

As part of the analysis, a table was created to collect key passages about inclusion which was used to identify a first series of keywords. The table below provides an excerpt of this step:

Reference: Campbell (2000, p. 50)
Approach: Feminist Design
Quote: Feminist Design is used to transform entrenched patterns of social understanding, or governing mentalities, which guide prevailing interpretations of events and evidence [and] are the cultural processes of formation and figuration that shape public policy debates and outcomes.

Reference: Luck (2018b, p. 100)
Approach: Inclusive Design
Quote: There is no boilerplate design solution or (co-design) process that can be cut-and-paste from one situation to the next (Lee, 2012, 2014), nor reliable characteristics for a ‘type’ of disability (Hendriks et al., 2015).

Reference: Suchman (2011, p. vii)
Approach: Participatory Design
**Quote:** Participatory design has a “central and abiding concern for direct and continuous interaction with those who are the ultimate arbiters of system adequacy; namely, those who will use the technology in their everyday lives and work.

**Reference:** Heylighen et al. (2017, p. 509)

**Approach:** Universal Design

**Quote:** The design of products, environments, programmes and services to be usable by all people, to the greatest extent possible, without the need for adaptation or specialised design.

**Table 3: Examples of Keywords from Open Coding Process**

This process led to the identification of several keywords across the theoretical landscape. In the table above (Table 3), keywords (or statements) are boldened in red, and include governing mentalities, no boilerplate design solution, direct and continuous interaction, and usable by all people. Such keywords were considered as formative conceptualisations, definitions, or key statements about the practice of designing inclusively – framed within the nine approaches. Next, these keywords were collated and analysed to try and form thematic clusters. The figure below illustrates 49 keywords (after removing repetitions) and how they formed overarching notions. – explained in the following section. In the diagram, circles surround each proposed notion and illustrate some of the overlaps. Indeed, there was a sense that some notions shared different conceptualisations about designing inclusively. Just as the theoretical landscape, lines between notions are blurred. This justifies that the notions remain preliminary and open to further iterations – notably through discussions and evaluations with practitioners.
2.4.2. Preliminary notions

Through exploring the publications and forming thematic clusters across them, seven notions emerged that seem to embody notable characteristics or parameters to designing inclusively. They are not proposed as a final understanding or interpretation. Rather, they are a first iteration to ground the research as it moves into inquiries within practice. Whilst reading through the notions, a sense of hierarchy or interconnection may emerge. This is explored later in Chapter 6: Further Analysis, Inquiry, and Insights. At this stage, the notions are simply devised to embody particularly notable parts of the theoretical landscape to inclusively designing public buildings, spaces, services, and products. The seven notions are:

**Governing Mentalities:** formed by the widely shared values, norms, expectations, and assumptions that hegemonize society (Campbell, 2000). In Nieusma (2004, p. 19), it is explained that “governing mentalities shape how people interpret macro socio-cultural phenomena and how they think about their own lives and identities”. In designing inclusively, practitioners advocate for the inclusion of
often unheard voices while reflecting on whether to work alongside, transform, or dismantle governing mentalities / status quo (Holmes, 2018).

**Marginalisation**: also described as oppression, the unheard voices, or sub-altern(ate) groups in society (Nieuisma, 2004; Van der Linden et al., 2017). Lines are drawn between the inclusion and exclusion of specific groups (Tonkinwise, 2019). Several publications reported - often as case studies - of the impact of marginalisation on the well-being of users in the framework of inclusive design (see Lee & Bichard, 2008; Goodall, 2020; Vermeersch, 2013). This notion includes concerns for marginalised majorities (the inadequacy of a design for all, or the resonance between different users), and marginalised minorities (specifically targeted marginalised people) (Sanoff, 2010; Hamraie, 2017; Preiser, 2011).

**Accessibility**: looks at how an approach is concerned with peoples’ (dis)abilities or access requirements, and the contextual issues of access in the design process (like financial ability, knowledge about disability regulations, time dedicated to inclusive design research) (Boys, 2020). Heylighen et al. (2017, p. 510) report on the impact and nuances from “different degrees of impairment” that influence accessibility. Many inclusive design approaches work to advocate for users with physical and cognitive disabilities as well as the complexities of their participation in the process (Luck, 2018a; Schelings & Elsen, 2017). As the theoretical landscape grew, a social model of ability highlighted how social impairments are diverse and can come from gender, sexual orientation, social status, or cultural views, amongst others (Vermeersch, 2013; EIDD, 2004).

**Involvement**: Defining user involvement was noted as an often-significant challenge to carrying out a design development process and including diverse user groups (Frauenberger et al, 2014). While some report on the importance of users as central to the design process (Suchman, 1987), others highlight debates in practice about the relevance of their involvement (Cain, 2005). This reveals tensions around the type of users and translating their lived experience into useful contributions to the design development process (Sanoff, 2010; Van der Linden, 2018). Questions are also formed around the enablers and barriers from decisions on who is included and excluded from (different parts of) the design process, and how they are eventually compensated (Tonkinwise, 2018).

**Design Stages**: Researchers report on the different uptakes of inclusive depending on its introduction in particular design stages. Inclusion is advocated for at various points in the development process. Some report on its value from outset: “If differences in perception and expectations are not identified at the outset, and realistic objectives are not made clear, the expectations of those involved in the participation program will not have been met, and they will become disenchanted” (Sanoff, 2010, p. 15). Others advance the importance of a continued effort
throughout the process as “more than just an outcome or end result; it is a design strategy that spans the entire design process” (Ielegems et al., 2019). According to Van der Linden et al. (2019, p. 82) the success of involving users and adopting an inclusive approach can depend on both participation and contributions during specific stages of the process: Given all these different parties involved - with or without a voice in (particular stages of) the project - making decisions for the benefits of ‘the user’ can be hard. This notion therefore recognises that the impact of inclusive practice can depend on its implementation at different stages of the design process.

**Scale of Change:** Different approaches work to improve the lives of users from systemic changes to individual / localised ones; From deliberative democracy within a community (Sanoff, 2010) to the feeling like a project was designed “just for me” (Thomas & McDonagh, 2013, p. 3). The scale of a proposed change – from collective to individual - can characterise the approach and become a point of discussion that influences the goals, design process, limitations, and outcomes. Some researchers discuss the importance of design transferability: highlighting how a design intervention for the least able can equally benefit others (Holmes, 2018; Heylighen et al., 2017). Others highlight the importance of bespoke solutions for particular users (Luck, 2018b). Finally, Coleman (1994) recognises that a design can change over time and adjust to different needs as user abilities evolve.

**Fairness:** The arguments around fairness and equality are diverse and difficult to settle (Tonkinwise, 2018). It concerns the ideas of ‘what is fair, and how to strike a balance?’ (De Cauwer et al., 2009). According to Devon & Poel, 2004, p. 461), “design is quintessentially an ethical process” which Chan (2018) contextualises as the need to manage trade-offs between often equally relevant ideas. Researchers also highlight the concept of justice: appeasing the needs of a majority, or designing for specific conditions (Bianchin & Heylighen, 2017). This is also seen when reflecting on how team members perceive the inclusion of marginalised groups, and their responsibilities in the design process (Ielegems et al., 2019). This notion draws attention to the negotiations about fairness, or its dismissal.
Chapter 3: Methodology

Designing Inclusively has valuable social impact yet is beset by an entangled theoretical landscape with sometimes unrealistic expectations that lead to issues on its uptake in practice. Different interpretations of theory – both its content and form - are reported as often foreign to practitioners, incompatible with their ways of thinking, or too confusing and paradoxical (Van der Linden et al. 2019). This is also sometimes further complicated by the nuances to designing inclusively in different disciplines and practices, or the ecologies in which the project takes place (van der Bijl-Brouwer & Malcolm, 2020). To help enable inclusion, this research turns to a broad scope of practitioners to learn about their real-world experiences as a foundation to uptake. This leads to report on testimonials about what is happening in practice, where – unlike theorisations - projects are launched and decisions around inclusion must be made. The research objectives helped form five research questions that guide the methodological inquiry. The first is an overarching endeavour to gain a better understanding of inclusion in design practice. It motivates the thesis and helped to form subsequent questions. Thus, the following chapter will explain the approach to inquiry, and the research design used to explore and attempt to answer these questions:

RQ2: How do practitioners advocate for and navigate inclusion in design projects?

RQ3: What are the driving motivations and mindsets?

RQ4: Which parts of designing inclusively are (most) prevalent in project development and in the negotiations and trade-offs within the project?

RQ5: What opportunities do these findings offer for improved inclusion across a project development process?

Specifically, this chapter will first explain the use and value of qualitative inquiry, situate it within the scope of applied design research, and outline how it is validated. Then, the research design will report on sampling, recruitment, data collection through semi-structured interviews, and the methods used to analyse and organise the data. Finally, explanations are provided on the data coding process, and further analysis, inquiry, and insights that were created to help answer the research questions in greater depth.

3.1. Approach to Inquiry

The proposed questions are framed as exploratory research, open to discoveries through talking with participants. This takes on a qualitative approach to inquiry to uncover, characterize, and understand social behaviour (Van der Maren, 1996). In essence, qualitative inquiry collects data to
explore and describe a phenomenon – eventually to either contribute to existing theories, or develop new ones (Morse, 1991). Although there are different qualitative approaches to inquiry – such as narrative, ethnographic, phenomenological, grounded theory, and case study – overall such approaches collect and distil data about people’s actions, behaviours, and interactions (Creswell & Creswell, 2018). For instance, narrative research interprets data, restorying it according to a given theme or subject (Clandinin & Connelly, 2000). Ethnographic approaches describe learning patterns shared across the beliefs, practices, languages, and behaviours of a culture-sharing group (Harris, 1968). In phenomenology, Moustakas (1994) proposes to develop clusters of meaning from significant statements within the data. Meanwhile, grounded theory codes the data against existing research to generate or discover new theories (Strauss & Corbin, 1990). Finally, case study performs an analysis of themes within a bounded (specific) context, or sample (Yin, 2014). These approaches appreciate that research about people is subjective; according to Bamkin, Maynard, & Goulding (2016), qualitative research is about telling it like it is.

This research chooses to learn about the lived experiences of practitioners who are attuned to designing inclusively either from their own disabling experiences, their roles within a project or company, or their self-motivated advocacy for those disabled by buildings, spaces, services, or products. This exploration tries to make sense of their experiences or interactions during a design development process, and the deeper meanings behind them. It is deeply embedded in a qualitative approach, where findings take shape as testimonials and in-depth discussions about personal experiences of designing inclusively. Similarly, like exploratory qualitative inquiry, “research in design is not concerned with the true, but with the real” (Godin & Zahedi, 2014, p. 14). Despite best intentions, or a clear understanding of opportunities for inclusion in theory (the true), practitioners face complications and barriers to achieving their goals (the real).

As mentioned, real-world experiences (the real) succumb to different complications than theory (the true). Amongst them, Zahedi (2011, p. V) explains that “problems typically arise when the design process is undertaken by multi-disciplinary groups of experts as well as non-experts because they do not share a common vision about the user’s needs, do not have identical goals related to the task, and do not have a common language to have productive dialogues as the design process progresses”. Today, it is well accepted that projects require multiple team members and stakeholders since “design problems require more knowledge than any single person possesses” (Arias et al., 2000, p. 86). Multiple competencies and experiences from different disciplines or backgrounds are brought together to solve these problems (Detienne, 2006). Design is integrated, wherein outcomes are developed across multiple disciplines, stakeholders, and practices (Chiocchio et al., 2011). Their goals, intentions, ambitions, and values do not always align. Indeed, as Bucciarelli
(1994) posits, design as a social process. Each team member has their own object world, or “worlds of technical specialisations, with their own dialects, systems of symbols, metaphors and models, instruments and craft sensitivities” (Bucciarelli, 1994, p. 162). These object worlds are “furnished with methods, techniques, values, and perceptions that connect the real world to past experiences and knowledge.” (Lamirande, 2020, p. 8). Thus, the testimonials from practitioners go beyond what is true and enhance these theoretical understanding by reporting on the real experiences to improving the uptake of designing inclusively, informed by their own object worlds.

Inquiring beyond the theoretical framework, and through real-world practitioners can lead to an understanding of how the uptake of designing inclusively is possible. By trying to both better understand and identify opportunities for uptake, this research transforms the preliminary notions – proposed in the theoretical framework – into something useable for design practitioners. As Findeli et al. (2008, p. 74) explain:

> Expressed in conventional terminology, the researchers’ community is interested in ‘fundamental’ or ‘theoretical’ knowledge, the practitioners’ community in ‘applied’ and ‘useful’ knowledge [...]. This means in particular that there is no point carrying on design research if it does not end up improving the act of designing and consequently the lives of those addressed by the act.

Just as many qualitative inquiries, this data will be captured through (semi-structured) interviews and takes form as verbal narratives or discussions between researcher and participant (Poggenpohl & Sato, 2009). Data is then analysed to uncover clusters, themes, or codes that help answer the research questions; namely, which notions are prevalent, what are the motivations and mindsets that drive them, and what kind of opportunities do they present to improving the uptake of designing inclusively. Learning from practitioner experiences and capturing data qualitatively should provide a rich unpacking of how designing inclusively is mediated throughout the development process.

Before sharing qualitative design research outcomes as theoretical and practical contributions, a rationale must demonstrate how or whether the findings (and their modes and forms) are valid. This research will evidence how findings answer the research questions, are accurate or representative of collected data, and contribute back to practitioners. More commonly, academic research can rely on reproducibility, or “that which can be regularly reproduced by anyone who carries out the appropriate experiment in the way prescribed” (Popper, 1959, p. 23). Given that this research considers the unique conditions of a project and the varying perspectives of those involved, it is unlikely that exploring the idea of designing inclusively with different practitioners would yield the same results. Zimmerman et al. (2007, p. 499) explains that “[t]here can be no expectations that two designers given the same problem, or even given the same problem framing, will produce identical
or even similar artefacts”. Thus, subsequent codes or clusters from open discussions with various practitioners about their design projects would likely differ. Instead, this research can rely on recoverability, meaning “the process is recoverable by anyone interested in subjecting the research to critical scrutiny” McNiff (2013, p. 18). Recoverability is about evidencing clear and strong logic to research outcomes (Biggs & Büchler, 2007). Thus, if a project evidences a strong chain of reasoning from forming the research questions to proposing an ‘answer’, then the process is considered rigorous, and subsequent research outcomes are valid (Godin & Zahedi, 2014). To support recoverability throughout data collection, Pedgley (2007, p. 473) provides researchers with some recommendations:

- **Chronology**: “Describe work in the same sequence that it occurred, ideally as bullet-points”;
- **Clarity**: “Keep entries intelligible, insightful and honest”;
- **Focus**: “Keep entries succinct; they should not be a crafted essay”;
- **Record images**: “Record still and moving images of developing and completed physical models”;
- **Out of hours**: “Account for instances of ‘out of hours’ designing in the next day’s diary”;
- **Diary admin**: “Ensure that all diary sheets are numbered and dated”;
- **Modelling admin**: “Ensure that all modelling outputs are numbered and dated to aid cross-referencing (e.g. ‘LB1:22’ refers to log book 1, page 22)”.

Most of these recommendations serve as reminders to good recordkeeping. In addition, Pedgley (2007) reminds researchers that good documentation requires (i) solo effort, (ii) endurance, (iii) subject delimitation, and (iv) mobility. Research that collects data through interpreting and understanding practitioners is often done alone (a solo effort). Thus, the sole researcher must ensure that what’s reported is verifiable. This leads into the second recommendation that the researcher has the stamina, or endurance to collect data over several months, if not years. To help capture data effectively, the subject of research should be very well framed, or delimited. In this case, it is bound by the subject of inclusion and its use and uptake in real-world design practice about public buildings, spaces, services, and products. This will help avoid data overload which can leave a researcher confused or overwhelmed by insights that do not suit the project. Finally, useful data is not exclusively bound by the direct interactions with participants. A researcher is mobile and understands that verifiability relies on the capacity to collect data outside of framed sessions with participants. This can include discussions with other researchers, or whilst attending conferences, workshops, or other social activities where inclusion is central. The flexibility to remain mobile suggests that the boundaries of research are not exclusively framed within the initial context and participants. Skilful research therefore insists upon critical flexibility in subject delimitation. Other activities around the subject of designing inclusively can influence research insight and perspectives, especially when data collection is completed over several months and undergoes iterative developments – as is the case with this research (spanning from October 2020 to January 2022).
3.2. **Research Design**

This research is guided by approaches to qualitative inquiry and design research. It aims to uncover the deeper meanings and shared patterns (codes, clusters, and themes) of practitioner actions and interactions when designing inclusively. Specifically, this research looks to uncover their impact in design practice and find opportunities to support the practical uptake of inclusion. The design of this research is presented in four parts: (i) semi-structured interviews, (ii) coding the data, (iii) further analysis, inquiry, and insights, and (iv) creating a contribution to practice.

Part 1 addresses the main method of data collection with practitioners: open discussions - or semi-structured interviews – guided by cues from the preliminary notions. The recruitment process, participants, timeline, interview format, approach, and main research questions are explained. These explanations support Chapter 4: Collected Data which provides a full description of discussions conducted with participants. The goal of data collection is to better understand the proposed notions (distilled from inquiries into theory about inclusion - Chapter 2) and transform or evolve them through discussions about how they manifest in action (real-world design practice).

Part 2 explains the processes and approaches to coding data in two different ways. A first approach evolves the notions, while a second explore the data’s potential as a practical contribution. The section outlines methods and procedures for coding data whose outcomes are presented in Chapter 5: Key Notions and Aspects Underlying Inclusive Practice. Finally, as this research is interested in the practical uptake of designing inclusively, two inquiries were devised. Part 3 explains how each was constructed. The first is designed to further analyse the notions within a practical framework. The building blocks of Open Innovation – Viability, Feasibility, and Desirability (Valkenburg & Sluijs, 2012) - are transformed into a model used to report on enablers and barriers within each notion. The second involves discussions with each participant from Part 1 to discuss the notions further and assess their impact against the participants’ own design development process. A table was co-created with participants to report on the prevalence of notions within each of their proposed design stages. Part 4 brings together findings from the thesis into a proposed contribution to practitioners that would support the uptake of inclusion. It summarizes the results and analyses into a two-page document that is designed as a reference to use alongside practitioners’ design processes. The document is evaluated by the original study participants as well as new recruits with
varying degrees of experience with designing inclusively. The figure below provides an overview and details of the process as it sits within the overall research:

![Figure 6: Illustrating the Methodology](image)

### 3.3. Part 1: Semi-Structured Interviews

#### 3.3.1. Recruitment

Before setting out to recruit participants and learn more from their experiences, the project required The Open University Human Research Ethics Committee approval. A formal request was submitted to the committee and included documentation to support and explain the research, a risk assessment checklist, and information sheets and consent forms that outline the value, contribution, anonymity, and renumeration to participants. The project was accepted in September 2020, allowing recruitment to begin.

To recruit effectively, selection criteria for subject delimitation were proposed: Each participant is actively engaged in designing projects that intend to be accessible to an open public audience (any potential user). Their roles and responsibilities varied, but each declared an active advocacy to designing inclusively in their respective projects. The projects offer a single space, building, service, or product that is made to suit a diverse range of people and abilities.

30 individuals and organisations were initially identified. They are predominantly British (and a few Canadian and European) and work in architecture, or industrial, product, or service design. They
were identified either through (i) an immediate design network, (ii) search engines using variations of the keywords design, architecture, inclusive design, inclusion, accessibility, and disability, (iii) recommendations from building managers through exploring the city (London) for inclusive architecture, or (iv) their presentations at events and conferences on inclusive practice. After reading through their employee profiles, browsing through project portfolios, and conducting a few emails correspondences, 16 participants were considered particularly suitable. They were contacted by email and introduced to the project through attached information sheets and consent forms (Annex 1).

Despite an interest in the project, many declared concerns that either complicated, or prevented their participation. Given that participants would refer to their own experiences during design projects, some worried about client interests. They were bound by non-disclosure agreements, or client confidentiality. In other cases, they had already experienced interactions with academic research and were disenchanted by the amount of time needed to dedicate, or a sense that their contributions did not pay off – meaning that they did not gain from the outcomes of the research. In this way, some research attempts can appear tokenistic (Rose et al., 2003). Otherwise, Sangaramoorthy (2014) warns that participants in specialised sites (including private organisations) may have suspicions towards outsiders. Participation may equally compromise their employment by breaching client goodwill or intellectual property. It is also possible they felt disconnected from the subject matter. To address their concerns the decision was made to keep the participants’ contributions anonymous so that what they impart could not impact their role or relationship with clients. After successful contact and discussion, 1 pilot study participant and 6 main study participants from different fields of architecture and design took part in the study. Their roles and areas of work are detailed in Table 4 below:

<table>
<thead>
<tr>
<th>Participant</th>
<th>Role:</th>
<th>Sector:</th>
<th>Clients:</th>
<th>Point of Contact:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pilot Study Participant (P0)</td>
<td>Design Communications Lead</td>
<td>Event design, public and virtual spaces</td>
<td>National government and affiliated organisations</td>
<td>Personal immediate design network</td>
</tr>
<tr>
<td>Participant 1 (P1)</td>
<td>Architect, and Lead of inclusion and access team</td>
<td>Multidisciplinary engineering, architecture &amp; interior design</td>
<td>Hospitality chains, mid-to-large scale corporations (office spaces)</td>
<td>Email to organisation; search engine results</td>
</tr>
<tr>
<td>Participant 2 (P2)</td>
<td>Industrial Designer</td>
<td>Manufacturing, park structures</td>
<td>Private themed parks and public (government) urban planning</td>
<td>Personal immediate design network</td>
</tr>
<tr>
<td>Participant 3 (P3)</td>
<td>Curator/ Director of Inclusion</td>
<td>Event design, galleries, and museums</td>
<td>Private and publicly owned indoor and outdoor art spaces</td>
<td>Direct email; met at a conference on inclusive practices</td>
</tr>
</tbody>
</table>
### Table 4: Participants from Part 1 Semi-Structured Interviews

#### 3.3.2. Interview Format, Approach, and Questions

The semi-structured interviews were designed to ask practitioners about their own experiences and advocacies for improved inclusion within real-world project development, although these were presented as talks or discussions to encourage an informal tone. Central to this research, interviews can help create detailed accounts of the interactions between people, places, and processes (Sangaramoorthy, 2020). Semi-structured interviews rely on cues to create fluid conversations and open-ended discussions between interviewer and participant (Yin, 2014). These kinds of semi-structured interviews can take the form of in-depth or focussed interviews. While both encourage informal tones, focussed interviews usually serve to corroborate a hypothesis whilst in-depth interviews rely on participant stories and experiences, usually discovered over multiple sessions or interactions (Creswell & Creswell, 2018). In-depth is chosen as it better suited to the research questions, leading to greater explorations and deeper insight. Throughout data collection, participants were interviewed or contacted for input one to four times. Multiple interactions with a same person can make them a ‘key informant’ (Yin, 2014). While this can be very useful, researchers should be “cautious about becoming overly dependent on a key informant, especially because of the interpersonal influence -frequently subtle- that the informant may have over [them]” (Yin, 2014, p. 107). To mitigate this risk, precautions were considered such as reminding participants of the goals of the study at outset, separating personal conversation and interview, and remaining aware of guiding questions and cues. Ultimately, these recommendations encourage objectivity and professionalism to allow participants to express themselves without influence from the researcher or pre-existing relationships. However, rapport or even deep connection between participant and researcher felt necessary. A sense of social camaraderie and trust could help overcome concerns about client confidentiality and facilitate sharing emotional or challenging experiences relating to
their practice / experiences (Rosen, 2007; Sangaramoorthy, 2014). The interaction style was informal, encouraging participants to share beyond the research subject to develop stronger social ties that enable deeper, more personal conversations about their experiences.

The interviews took place between October 2020 and January 2022 (interviews from Part 1 took place between October 2020 and June 2021). Given that interviews were conducted during several COVID-19 lockdowns, they were done remotely using Microsoft Teams. This allowed to video record sessions for transcription, review, analysis, and interpretation. Recordings were a helpful way to remain engaged in the conversation, rather than focus on exhaustive notetaking during interviews. In compliance with Yin (2014) interviews were conducted in a space where participants could safely and openly share their views. They avoided external disruption, such as distracting noises, curious colleagues, or phone notifications. Each semi-structured interview lasted between 45 to 60 minutes. This allowed participants to provide enough depth without feeling rushed and did not try to impose on their time and availability. In total, six participants and 8 semi-structured interviews were completed (Participants 1 and 2 were interviewed twice to gain deeper insight on their practices, and to inquire into some subjects that were not initially part of the interview framework).

Although interviews are often an exclusively verbal conversation, the subject of this research – to design more inclusively – insisted that the formats and means to conduct interviews were open to changes. As Holmes (2018) recommends, participants should be provided a diversity of ways to take part. During this interview series, one participant was not entirely comfortable with the “pressure” to sit and talk about their practice. As a helpful distraction, we each prepared and made bread during the interview. The interview was held in our respective kitchens and still completed over Microsoft Teams. According to the participant, the process of mixing, kneading, and manipulating dough allowed a more natural flow in conversation. In another case, a participant was aided by a support worker. Although the interview was a private verbal conversation, their facilitator was available in another other room to come and provide technical support, set up the meeting, and assist the participant when needed. An open schedule for data collection was key to ensure compatible availabilities between researcher, participant, and support worker.

The initial questions explored and tried to understand how participants design inclusively, and the motivations and mindsets behind them. In addition, cues inspired by the notions discussed in Chapter 2 were used (i.e. governing mentalities, marginalisation, accessibility, involvement, design stages, scale of change, and fairness). After Human Research Ethics Committee approval, and pilot study testing, questions were formulated to gain a sense of participants’ experiences designing inclusively. Examples include:
• How do you understand Inclusion?
• Can you think of a project where designing inclusively went well / went poorly?
• Was anyone excluded; how do you draw that line of who is, or is not included?
• How does your approach align with inclusion [and accessibility]?  
• How does your ethos influence the development process?

Then, throughout interviews with participants, new questions would emerge:

• What motivates clients to be apprehensive or reluctant to push inclusion further?
• What are the motivations to dismiss your ideas?
• What else could you present that may motivate a client?
• Are there parts [of inclusion] from past projects that influence your current practice?
• How do you recruit participants or find appropriate users with helpful experiences?
• What kind of restrictions or opportunities did the timeline create?
• What kind of features made this product more accessible than your previous ones, or market competitors?
• Who has final say on whether you can move forward with an [inclusive] idea?
• Outdated documentation is often to blame, what do you think does and does not help your cause in current regulations and guidelines?
• Could you see this idea being scaled up into a more universal offer?

After each session, new ideas and understandings about the subject emerged. These helped to review interview questions in order to learn more about specific subjects or notions and conduct the interviews more effectively (removing or adapting questions that may not inspire participants).

To help illustrate an idea or explain themselves, participants referred to documentation, archival records, or artefacts such as sketches, prototypes, mock-ups, or final designs (Yin, 2014). This included websites for their buildings, spaces, services, or products, and images, mock-ups, or specifications to expand on decisions and negotiations made during the project. These supports helped “in such ways that the ‘invisible’ and unspoken elements of everyday life emerge as research knowledge” (Pink & Morgan, 2013, p. 353).

Overall, this series of interviews produced 9 hours of conversation that helped better understand participant practices. They often relied on examples and stories from their own experiences – either as designers or users – to help argue their decisions and perspectives. Insights were gained about how they conduct and understand designing inclusively, as well as their motivations and mindsets.
3.4. **Part 2: Coding the Data**

The interviews provided a rich unpacking of how participants think and design inclusively in real-world practice. To help further understand and create value from the collected data, these discussions underwent two separate qualitative coding processes. The first process focused on an iterative evolution of the initial notions distilled from the proposed theoretical landscape. The second process focused on the identification of underlying themes relating more specifically to design practice that emerged independently from the notions. Since this research reported on both the value of a theoretical foundation and its paradoxical issues which entangle practice, both processes are devised to help support the uptake of inclusive practice respectively; a first that grows through theory, and a second that emerges uniquely through real-world practice. Consequently, the first (notions) seem to explain a broader understanding of inclusion, while the second pertain more closely to relevant and applicable aspects of practice.

The first process was iterative, and the understanding of the notions evolved from one interview to the next. Tesch (1990) proposes an 8-step procedure for data organisation, coding, analysis, and interpretation; This research supplements their process (illustrated by dashed lines in Figure 7) to represent the reflective and iterative nature of this study.
3.4.1. **Evolving the Notions**

This study relies on participant testimonials to evolve notions distilled from the theoretical framework. Discussions served as a sounding board about the relevance and accuracy of notions, and to better describe or adapt them according to lived experiences in practice.

Coding transcripts involved highlighting sections of text that embodied or enhanced the understanding of a given notion. Notes were taken that explained the decision behind a coding or explored and questioned what was discussed during the interview. The reviewing process not only included commentaries and reflections, but also relied on a notebook to help process each interview, and a qualitative codebook (Guest et al., 2012). These tools helped to manage data overflow and ensure appropriate recordkeeping and subject delimitation (See Annex 2 for an example from the notebook). To code data, the notions were considered *predetermined codes*, each with their own assigned colour (see table 5). Equally, the coding was open to *emerging codes*, *surprising codes*, or *codes of unusual or of conceptual interest* (Creswell & Creswell, 2018). They
were coded as unclassified until reviews to the notions would embody and better represent the content of each interview.

<table>
<thead>
<tr>
<th>Governing Mentalities</th>
<th>Design Stages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marginalisation</td>
<td>Scale of Change</td>
</tr>
<tr>
<td>Accessibility</td>
<td>Fairness</td>
</tr>
<tr>
<td>Involvement</td>
<td>Unclassified</td>
</tr>
</tbody>
</table>

**Table 5: Colour Classification of Each Notion (Version 1)**

Thus, throughout the analysis, new themes, definitions, or notions could emerge. Each time the coding process significantly rescoped or refined the description of a notion – or the emergence of new notions – a new version of the qualitative codebook was created. The transcripts were freshly analysed multiple times; The analysis was done on unreviewed transcripts and reanalysed according to the most recent version of notions. This iterative process was repeated until each transcript was fully coded, and there were no indications of unclassified codes. Overall, this was achieved after 4 significant reviews (or 5 versions) of the notions, and transcripts. The term ‘significant’ is used since some refinements were made between evolutions from one version to the next, but did not yet influence transcript codings. For instance, during Version 2, it was found that Governing Mentalities were not limited to macro-socio-cultural settings, but also micro socio-cultural ones (i.e. a small team working on a project could form a distinct governing mentality). This improved an understanding of the notion but did not change how transcripts were coded. Examples of significant changes are explained later in Chapter 5. In the example below, a same section of transcript is analysed and explored four times, according to versions 1, 2, 3, and 5 of the notions:

<table>
<thead>
<tr>
<th>Version</th>
<th>Transcript</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>From there we provide tiered advice; three tiers. So the first tier is the minimum regulations or codes. Things like accessibility standards, the codes of conduct, so anything that needs to be minimally required so the building is in some way compliant to code. The second tier is best practice which is mainly advice based on case studies to give an idea of what works. And then on a third tier, we push past all of this and start providing information from user feedback (user groups) give them insight on some of the trends that are happening and thinking about what is fit for purpose throughout the life cycle; from construction to end of life (considering that the building has a fifty year life span). So we are proposing something that is not just useful now, but will have value later. One of the considerations of these last two tiers is the problem of documentation; since documentation is from quite a long time ago. So when the 60s and 70s were about calculating the averages and accessibility standards and standards for sizings that have become since quite out of date. So the minimum requirements aren’t even really minimum in that the best practice (tier 2) should be standard.</td>
<td>Where does this fit in? It is their practice...and the tiers of inclusion. Demarcates what they believe plays a part in the practice of inclusive design. Sort of scale of change, but more to do with the project after the development process.</td>
</tr>
<tr>
<td>2</td>
<td>From there we provide tiered advice; three tiers. So the first tier is the minimum regulations or codes. Things like accessibility standards, the codes of conduct, so anything that needs to be minimally required so the building is in some way compliant to code. The second tier is best practice which is mainly advice based on case studies to give an idea of what works. And then on a third tier, we push past all of this and start providing information from user feedback (user groups) give</td>
<td>Scale of change because the tiers represent different &quot;scales&quot; of impact and inclusion in a project. Question: What does this kind of proposal look like? Is it a brief, a presentation, and you mention...</td>
</tr>
</tbody>
</table>
them insight on some of the trends that are happening and thinking about what is fit for purpose throughout the life cycle; from construction to end of life (considering that the building has a fifty year life span). So we are proposing something that is not just useful now, but will have value later on. One of the considerations of these last two tiers is the problem of documentation; since documentation is from quite a long time ago. So when the 60s and 70s were about calculating the averages and accessibility standards and standards for sizings that have become since quite out of date. So the minimum requirements aren’t even really minimum in that the best practice (tier 2) should be standard.

**Table 6: Example of 4 Versions Coding the Same Excerpt**

The example above shows how the transcripts were analysed, and changes that incurred from one analysis / version to the next. *Unclassified* sections indicated that further refinements were needed and motivated the development of new versions (more accurate codes). This kind of process allows more accurate codes to emerge and does not attempt to force existing codes onto transcripts (Braun & Clarke, 2006). As shown, each phase provides an increasingly precise analysis of the transcript (Chapter 5 (Section 5.1) describes the evolutions, changes, and final versions of each notion). Rich descriptions of the changes are provided to demonstrate rigor and reliability (see Section 3.1), and subjective group consensus is used, wherein a group of individuals relevant to the study or topic agree with the proposed coding (Merriam, 2009). At outset, preliminary notions cited in Chapter 2 were subject to scrutiny with research supervisors. They were also presented during a conference workshop and discussed with academic peers (Lamirande, M. (2020). Inclusion and the New ‘Normals’ of Design Practice. Paper presented at the DIS 2020 Workshop on RdI in Situ: Discussing the Domains and Impact of Design Research, Hawaii, U.S.A.). This supported the final step in the scoping review process: Expert Consultation (Arksey & O’Malley, 2005). Next, given that notions
were evolved through participant testimonials, some practitioners (those available) reflected on the final summaries of each notion (Version 5). Their thoughts and recommendations are presented as part of an inquiry made in Chapter 6. Later, they and new participants evaluate the design overlay produced to contribute to future practice, which includes the proposed notions. Participants reflected on clarity, relevance, and value to their own practices (presented in Chapter 7). This further validates outcomes from the process and refines the notions into an increasingly accurate reflection of designing inclusively. Findings were also reported in a peer-reviewed conference paper and presentation in June 2022: Lamirande, M., Luck, R., Alexiou, K. (2022). Notions of Designing Inclusively from Practitioner Perspectives; DRS 2022; Bilbao, Spain.

3.4.2. Discovering Aspects (Underlying Themes)

After coding and organising the notions, another analysis was done to explore underlying themes within the data. This kind of exploratory approach can be considered open coding. According to Bamkin, Maynard, & Goulding (2016, p. 220):

“Initial” or “open” codes are applied to a word, sentence, or paragraph to reflect actions and processes in the text being analysed. These codes are spontaneous annotations, that is, responses from the researcher to the data, which form the backbone of the research (Charmaz, 2006). Data are then abstracted and generalised through a system of gathering the codes into categories (Goulding, 1999). The categories are not derived from theoretical concepts which were devised before the data collection, but develop from the nature of the initial codes. Finally, those categories are linked to form a cohesive structure for the information (Charmaz, 2006).

This study was created to discover themes that emerge through the actions and concerns of practitioners within design practice. As such, coding focussed on actionable recommendations, insights, or cautionary tales to support practitioner’s own uptake to designing inclusively. Excerpts from testimonials were organised according to their assigned code (notion) and reassessed to reveal key themes (Annex 3). To distinguish them from the proposed notions, and reflect their action-based qualities, they are referred to as aspects (features of designing inclusively).

In Chapter 5, these aspects are presented under table 16 categorizing them into (i) project development, (ii) working as a team, and (iii) designing inclusively. These groupings reflect recommendations made during peer review for publication of findings. They also reflect comments from practitioners who reported on the influence that a process and multidisciplinary teams can have on the uptake of inclusion. Finally, groupings also resonate with conceptualizations from theory that acknowledge design as a social process (Bucciarelli, 1994). Details on clustering the aspects and grouping them is provided in Chapter 5 (Section 5.2).
Findings were also the subject of a peer-reviewed journal publication in June 2022: Lamirande, M (2022) Aspects of Designing Inclusively from Practitioner Perspectives; Architecture (2) Special Issue: Contemporary Issues in Participatory Architecture. pp. 497-517.

3.5. Part 3: Further Analysis, Inquiry, and Insights

The coding and analysis discussed above (Part 2) led to new insights and more accurate descriptions of notions underlying the practice of designing inclusively. Yet, these were found to not fully answer the guiding research questions. Namely, their prevalence along the design process and application to design practice would benefit from further research (RQ4). To address this, two additional studies were devised and carried out that focus on the prevalence of each notion across design practice, looking further into the practical enablers and barriers to designing inclusively, and reflecting on the interconnections, resonances, and relationships between notions. Their purpose is to go beyond the initial methodological scope and provide additional perspectives to the data through which deeper understandings of the notions, their relationships and prevalence, and introductions into practice are explored. This was necessary to understand the interactions with practice, and the links between project development processes and inclusion.

These further analyses, inquiries, and insights are considered experimental as the studies either rely on original methods of analysis or were partly cocreated with participants. In summary, the first analyses the prevalence of notions across three themes of design practice proposed by the model of Open Innovation (Valkenburg & Sluijs, 2012) which articulates in real-world practice, and is particularly attentive to the social aspects of new product development such as amplifying marginalised voices, creating impact for unheard groups, and placing human needs on equal footing with other project concerns. In the second, participants discuss the prevalence of each notion after completing a table modelling their own design processes against the proposed notions. Together these inquiries solidify an initial understanding of the impact and ways that the proposed notions manifest and interact in their application on the design process or the prevalent themes therein. Each intends to provide new insight to answer the guiding research questions.

3.5.1. Notions through a Model of Open Innovation

The first analysis sought to reorganise the notions according to a model of Open Innovation. In Chapter 6, several resonances between Open Innovation and Designing Inclusively are made to explain the value of its use as a further inquiry. Namely, this includes a shared navigation of uncertainty, embracing and creating transformative behaviours, involving a more participatory network, and facilitating end-users as part of the design process. The open innovator creates
positive impact towards social issues and user experiences whilst navigating complex multidisciplinary project development processes – just as many of those who work to improve the uptake of inclusive practice. Overall, Open Innovation is aligned with the foundations of inclusion since both draw attention to the advocacy of marginalised or unheard users through new solutions (further justification on the use of this model is provided in Chapter 6). but goes further by proposing a way to articulate this in practice, as well as visualise and balance 3 key building blocks that intersect with values of inclusion and its application in practice: human desirability, financial viability, and technological feasibility Valkenburg & Sluijs (2012, pp. 30-31):

![Building Blocks of Design Driven Open Innovation](image)

**Figure 8: Building Blocks of Design Driven Open Innovation (Valkenburg & Sluijs, 2012)**

**Building Block 1: Human Values;** The core of innovation lies in the people that will eventually use, experience and buy the innovation. Therefore understanding the value for society and people is crucial. It is important to consider this from a future viewpoint. Innovation is always about the chances of the future. You have to imagine the future and its opportunities by a thorough investigation of trends, scenarios and people within this future world. A designer should not only connect to the desires of current users, but take into account the future developments that may change the drivers for people, or their behaviour. Innovation is therefore value driven: how well an innovation complies with the wishes and value of people will eventually determine its success. Additionally the value gained by other stakeholders has to be taken into account. The combination of value for individuals, society, and the planet will eventually lead to more sustainable and meaningful solutions. The way you take society and human values into account as a building block for innovation determines the **desirability** of the solution.

**Building Block 2: Technology;** New technologies change societies. The realisation of sewers allowed cities to grow to the important hubs they are nowadays. The introduction of cars extended people’s coverage beyond walking distance, introducing many possibilities. The current increase of [information and communication technologies] transforms society in many ways. From sharing information, actively participate in innovation, to taking responsibility for public affairs and social initiatives. But even though important and irreplaceable, technology is
considered to be enabling and problem solving. The main crux is therefore to know how technology can be applied in the future context. What are the future applications of technology and when will new technology become available in a feasible way. This may very well be one of the core competences of a designer, imagining new solutions through new technologies. Users cannot predict new technologies, or their own changing behaviour when adopting them. Breakthrough innovations [...] require a strong vision on future social needs and a creative imagination of the non-existent. The way you take technology into account as a building block for innovation determines the feasibility of the solution.

**Building Block 3: Business;** The third fundament is business. When you focus on the creation of sustainable solutions you also need a business acumen. When you are creating new solutions, the business development requires business modelling. This will determine the commercial viability of the solution. In the case of open innovation this business model should show value gain for all stakeholders within the participating network to be sustainable on the long term. Creating and realizing innovation is never done within the walls of one organization. Networks of organizations and companies have to work together. Acting within an open and collaborative network creates both anxiety and new challenges. The way you take business into account as a building block for innovation determines the viability of the solution.

These 3 building blocks were transformed into a model that could support the analysis of data (Figure 9 below). The model transforms the proposed building blocks into three spheres that are overlapped as a Venn diagram to produce a mapping strategy that would identify where practitioners’ enablers and barriers to designing inclusively are situated.

![Figure 9: Transformed Model of Open Innovation](image)

To make use of the model, the transcripts coded for each notion were analysed (these were the same transcripts used to thematically cluster and form the proposed aspects – Section 5.2). Each segment of transcript was labelled as an enabler or barrier within the proposed model of Open Innovation. An enabler supports the uptake of designing inclusively, while a barrier hinders or limits uptake. For example, P5 reported that:
Costs that aren’t in the case, hospital costs of the injured person, trauma of staff, counselling costs. All of that outside the immediate business case. It does reputational damage. Then those involved will have a ripple effect on their immediate friends, co-workers or family concerned about the issue.

In this case, acknowledging the costs and human emotional damage caused by design oversights supports the uptake of designing inclusively. Clients were more motivated to integrate inclusive practices namely because of the safety risks and potential reputational damage associated.

Specifically, this is an example of an enabler that touches the intersection of viability and desirability in the proposed model of Open Innovation. This suggests that both values of financial viability, and human desirability played a part in the argument proposed by P5 to support to uptake of designing inclusively within their project. Thus, the diagram would illustrate the following:

<table>
<thead>
<tr>
<th>Viability</th>
<th>Feasibility</th>
<th>Desirability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Costs that aren’t in the case, hospital costs of the injured person, trauma of staff, counselling costs. All of that outside the immediate business case. It does reputational damage. Then those involved will have a ripple effect on their immediate friends, co-workers or family concerned about the issue.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 7: Example 1 of the Analysis of Notions through a Model of Open Innovation

<table>
<thead>
<tr>
<th>Viability</th>
<th>Feasibility</th>
<th>Desirability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Costs that aren’t in the case, hospital costs of the injured person, trauma of staff, counselling costs. All of that outside the immediate business case. It does reputational damage. Then those involved will have a ripple effect on their immediate friends, co-workers or family concerned about the issue.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Here, all sections in white are not prevalent, while the section in orange indicates that the intersection of viability and desirability only (i.e. not including the intersection with feasibility) enables uptake.

In some cases, there is overlap between the enablers and barriers of a given notion. For example, the table below shows that the intersection between Viability and Feasibility (excluding the overlap with desirability) is both an enabler and barrier within the notion for project constraints. In this case, different transcripts were identified as both supporting and hindering uptake. In the example below, the sections highlighted are either orange (for enablers) and blue (for barriers). This is simply done for reader clarity. For example:

<table>
<thead>
<tr>
<th>Viability</th>
<th>Feasibility</th>
<th>Desirability</th>
</tr>
</thead>
<tbody>
<tr>
<td>[Enabler:] Although we spent more time developing the inclusive play structures and setting things in place, at the end, we projected that it would cost us less because we would need less people to deal with it after. (P2)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Here, P2 developed a solution using new manufacturing processes in response to the project manager who asked that it should be not only technically feasible, but also more financially viable than the current design. In this case, they were able to improve the uptake by addressing both values. In contrast, P2 also reports that they were unable to explore “great” new concepts as they lacked the time and resources (budget to pay staff, manufacturing processes, and materials) to develop ideas further. Here, they were hindered by the viability and feasibility set within the project constraints.

Next, Chapter 6 summarises the entries analysed within the given notion and illustrates this as an overall summary of the respective enablers and barriers for each. It also includes two compelling examples from data analysis to help situate readers who cannot review the entire dataset. An example is provided here:

<table>
<thead>
<tr>
<th>Enablers</th>
<th>Barriers</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Governing Ways of Working</td>
<td>Viability</td>
<td>Feasibility</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Table 8: Excerpt of the Analysis of Notions through a Model of Open Innovation**

The example above is a compilation of the excerpts analysed that helped form the notion “Governing Ways of Working”. The enablers model (in orange) shows that excerpts highlighted one or another intersection of either (i) Viability and Feasibility, (ii) Feasibility and Desirability, (iii) Desirability and Feasibility, or (iv) the intersection of all three. Whereas, the barriers model (in blue) shows that excerpts highlighted either (i) Viability, (ii) Feasibility, or (iii) Desirability exclusively. This
also implies that there were no recorded barriers that involved the intersection of any of these three blocks. The full analysis and list of entries is provided in Annex 4.

After reorganizing the findings, interpretations were made about shared patterns between notions that revealed relationships between them. Then, an overall comparison between the number of occurrences in each sphere was done to highlight and explore which parts of the spheres were most disabling to practitioners, and which seemed to enable them most. These reflections helped to identify prevailing issues when designing inclusively, as well as opportunities to improve uptake. These findings were subject to a peer reviewed conference presentation in July 2021. The paper was titled Guider le Design vers une approche plus inclusive (translated to: Guiding Design Towards a more Inclusive Approach): Lamirande, M. (2021). Guider le design vers une approche plus inclusive. Paper presented at the 86e congrès de l’ACFAS: colloque Design par le care, Sherbrooke, Canada.

### 3.5.2. Notions throughout Practitioners’ Development Processes

The second was primarily focussed on exploring the prevalence of each notion across design development processes and reflecting on opportunities to improve the uptake of designing inclusively. Initially, the study was devised as an analysis of data – reporting on the impact of each notion throughout the development process based on collected data from participant discussions. For this study participants from the main data collection phase were invited to take part in completing the table and conducting semi-structured interviews. To support the inductive approach to inquiry, participants were asked to complete the table themselves, rather than provide peer review. To encourage a more accurate representation of their views, participants were equally
consulted - before completing the table – to provide the design stages of their own development processes and practices. Thus, each participant completed a bespoke table that more accurately represented their own real-world practice. In the example below, a participant favoured the use of RIBA stages to complete the activity:

Figure 10: Example Illustrating Impact of a Notion Across a Design Process.

The answers were compiled and a distilled version of their processes was proposed; Four main parts that embody the breadth and nuance of each process - The early or preparatory stages ((1) “Prepare”, the (2) “Design” stages, the making stages ((3) “Make”), and the design in use or (4) “Use” stages. Their answers illustrated in a table that compares the prevalence of each notion against the four proposed stages accompanied by comments and reflections from the semi-structured interviews (see example below).

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Proof of Logic</td>
<td>++</td>
<td>+</td>
<td>++</td>
<td>+</td>
<td>Important to determine a vision in the early stages, a brief or commitment that follows throughout the process. Important guide during construction (Make) when things get value engineered out / deviate.</td>
</tr>
<tr>
<td>Governing Ways</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>Client and architect expectations frame the project from outset.</td>
</tr>
</tbody>
</table>

Table 9: Excerpt of Analysis of Notions using the Proposed Four Main Parts of a Design Process

This series of semi-structured interviews took place between September 2021 and January 2022. As before, interviews were conducted remotely using Microsoft Teams, recorded, and transcribed. Interviews lasted between 45 and 60 minutes and were guided by the ‘answers’ provided in their respective tables. They discussed their understandings and application of each notion along a design process, as well as its prevalence – or not, throughout their own practices. Due to limited availabilities, three participants took part fully, two provided brief email correspondences, and one was unable to take part. Through discussions with the participants, some notions were reported as particularly prevalent. Their insight also provided details about the relationships between each notion and the processes and practices of designing inclusively.
3.6. Part 4: Overlay for Designing Inclusively

In the thesis, Part 1, 2, and 3 (outlined above) help to answer most of the guiding research questions. They have helped to form better understandings of inclusion for design practice (RQ1), a description of ways and reflections on how practitioners advocate for and navigate inclusion (RQ2), some of their motivations and mindsets (RQ3), and a view on (the most) prevalent parts of designing inclusively in the negotiations and trade-offs during project development (RQ4). Since this thesis is concerned with the uptake of designing inclusively, research must also provide an answer to:

RQ5: What opportunities do these findings offer for improved inclusion across a project development process?

Part 4 helps to construct and evaluate a means to translate findings into a useable contribution to practitioners interested in improving the uptake of inclusive practice within their own design projects. First, an introduction into developing a practical contribution is provided alongside an outline into the proposed overlay. This is followed by details on recruiting participants to evaluate the contribution.

3.6.1. Developing a Contribution to Practice

The purpose of some academic research – such as this thesis – is to discover and transform findings into contributions that support real-world practice and practitioners. There is debate and confusion on the terms used – as some may refer to these as methods (in general), or consider methods as a specific kind of contribution among others; Gerrike et al. (2017, p. 102) explain:

This looks like it should be an entirely straightforward question, and from the individual perspective of many engineers and designers it is an entirely straightforward question. But answers differ. The notion of method causes a surprising amount of confusion among engineering designers in industry and academia; and this confusion adversely affects efforts to introduce new methods into industrial practice. […] The terms methodology, method, and tool are used with an explicit or implied overlap in meaning. The meanings these terms can have range from a loose collection of heuristics to detailed procedures supported by well-developed computer tools and guidelines. This range of possibilities and the range of potential meanings of the term ‘method’ affect the scientific claims made for the methods by researchers as well as the expectations of practitioners.

The purpose of this section is not to break down or draw lines around the meaning of a ‘method’, but rather to learn from others who’ve used the term and describe some of the practical challenges to their uptake in design projects. This will help in characterising and constructing a proposed contribution based on findings from this research later in the thesis. As implied above, the term ‘method’ is unsettled and sometimes used either in overlap with other kinds of practical contributions, distinct from others, or as an overarching term. Cross (2021, p. 44), provides a general idea of a design method (as overarching): “[they can] be any procedures, techniques, aids, or ‘tools’
for designing. They represent a number of distinct kinds of activities that the designer might use and combine into an overall design process”. Whilst design methods may take form, Wallace (2011, p. 239) summarises some of the critiques that “methods tend to be too complex, abstract and theoretical; too much effort is needed to implement them; the immediate benefit is not perceived; methods do not fit the needs of designers and their working practices; little or no training and support are provided”. These observations challenge the value of methods derived from research findings. Yet, while some state that methods are not used in industry, “many companies claim that design methods are central for their activities and enable them to be innovators in their field” (Gerrike et al., 2017, p. 102). Gerrike et al. then propose three factors that can influence method uptake to bridge academia and design practice:

- **Method development**: insufficient method evaluation, insufficient communication of the value of methods, lack of an understanding of user needs, a discouraging reward system in academia;
- **Method (attributes)**: user friendliness, cost, format;
- **Method use**: attitudes of users, improper use, awareness of design research.

These factors can help identify the missing links between research and practice. Researchers who intend to transform their findings into practical contributions are likely more concerned with the “real” rather than the “true” (Godin & Zahedi, 2014). This means that academic contributions should be transformed from their original formats or style and respond to the real-world contexts within which they are meant to be used. This can also imply that research outcomes should take project ecologies, design contexts, and the everyday of project development processes into consideration. Section 2.6 provided some characteristics that could be used to form a method – used later in Chapter 7; Namely, contributions should help practitioners explore, discover novel yet relevant solutions, ease them into what can be seen as risky decisions (to change current practices), and provide clear and convincing statements (Van der Linden et al., 2019). There are also different kinds of contributions, from rigorous procedures, to general guidelines, to tools used within specific conditions, or a combination therein (Gerrike et al., 2017). In any case, they should consider how a practitioner will use the contribution in the context of their work, as well as provide a useful means to organise, shape, and display the information all while ensuring that the contribution truly helps them achieve an intended goal (Daalhuizen & Cash, 2021).

Through research on contributions to design practice an opportunity is identified to provide practitioners with an *overlay* to their practice. The purpose of the overlay is explained therein as:

This sheet is presented as an overlay to your own design development process to help take on more inclusive practices when developing public buildings, spaces, services, and products. The insights can be used independently or together along different stages of the process. They are
not presented in a specific order and should be used to suit your needs, roles, and responsibilities.

The overlay was constructed by intersecting data from the thesis into a concise two-page document. (details about how the overlay was constructed are provided in Chapter 7). The overlay presents an overview of the final proposed notions followed by insights provided along a four-stage design process (presented in Chapters 6 and 7). To verify its relevance, a series of inquiries were done with academics and practitioners. Academics helped as a sounding board during development of the overlay, whereas real-world practitioners were consulted to determine its value as a practical contribution.

To evaluate the proposed overlay, semi-structured interviews were organized with existing and new participants to explore its transferability across design practices and degrees of experience in designing inclusively. Participants were asked about the clarity, relevance, and value of the overlay. The following sections present the recruitment process, and approach for inquiry.

**3.6.2. Recruitment and Interviews**

The purpose of this study was to determine whether the overlay provided could be helpful to practitioners in their uptake of designing inclusively. This suggests that the overlay should have broader relevance to different practitioners (their backgrounds, disciplines, projects, and degrees of experience with inclusion). Selection criteria maintains that they should be actively engaged in designing projects that intend to be accessible to an open public audience (any potential user) but may practice inclusion at varying degrees. In total, 9 participants took part in the study (excluding some academics who helped assess the first drafts): an original pilot study participant, two participants from previous activities (well experienced in designing inclusively), and six who declared varying degrees of experience. Practitioners’ roles and areas of practice are presented below.

---

**Existing Participants (well experienced)**

<table>
<thead>
<tr>
<th>Role</th>
<th>Sector</th>
<th>Clients</th>
<th>Point of Contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design Communications Lead</td>
<td>Event design, public and virtual spaces</td>
<td>National government and affiliated organisations</td>
<td>Personal immediate design network</td>
</tr>
</tbody>
</table>

---

Pilot Study Participant (P0)
Interviews transcribed before.

**Participants**

1. **Participant 1 (P1)**
   - **Role:** Architect, and Lead of inclusion and access team
   - **Sector:** Multidisciplinary engineering, architecture & interior design
   - **Clients:** Hospitality chains, mid-to-large scale corporations (office spaces)
   - **Point of Contact:** Email to organisation; search engine results

2. **Participant 2 (P2)**
   - **Role:** Industrial Designer
   - **Sector:** Manufacturing, park structures, Product design
   - **Clients:** Private themed parks and public (government) urban planning
   - **Point of Contact:** Personal immediate design network

**Participants with varying degrees of experience with inclusion**

3. **Participant 7 (P7)**
   - **Role:** Director of Design
   - **Sector:** User experience / user interaction design (UX/UI)
   - **Clients:** Private design firm creating a directory to future metaverses
   - **Point of Contact:** Personal immediate design network.
   - **Declared level of experience with inclusion:** Some knowledge from training courses. Inclusion is recognised as part of project concerns – but not central.

4. **Participant 8 (P8)**
   - **Role:** Interior Designer
   - **Sector:** Multidisciplinary architecture and interior design firm
   - **Clients:** Large luxury hotels and apartment buildings.
   - **Point of Contact:** Referred by contact within personal design network
   - **Declared level of experience with inclusion:** Little to none. Inclusion is not considered in projects, but participant would like to suggest it for their firm.

5. **Participant 9 (P9)**
   - **Role:** Architect and Community Design Enabler
   - **Sector:** Residential, community centres, community housing, city farms, ...
   - **Clients:** Private residents, industry, and local councils
   - **Point of Contact:** Contact through academic network
   - **Declared level of experience with inclusion:** Very comfortable – included in process

6. **Participant 10 (P10)**
   - **Role:** Architect
   - **Sector:** Public galleries, museums, libraries, and theatres
   - **Clients:** Local councils, private trusts, and Universities
   - **Point of Contact:** Email with reference from Academic Network
   - **Declared level of experience with inclusion:** Very comfortable – included in process

7. **Participant 11 (P11)**
   - **Role:** Industrial Designer
   - **Sector:** Medical Devices – Assistive Technologies for public use in hospitals
   - **Clients:** National Health Services and Local Community Groups
   - **Point of Contact:** Immediate Design Network
   - **Declared level of experience with inclusion:** Some experience- users help to test prototypes

8. **Participant 12 (P12)**
   - **Role:** Industrial Designer
   - **Sector:** Furniture design for public and private spaces.
   - **Clients:** Private collectors, Art Galleries, Museums, Various Businesses.
   - **Point of Contact:** E-mail with reference from immediate design network.
   - **Declared level of experience with inclusion:** Little to none – often relies on a few personas

---

**Table 10: Participants from Part 4 Semi-Structured Interviews**

This series of semi-structured interviews took place between December 2022 and January 2023. As before, interviews were conducted remotely using Microsoft Teams, but were not recorded or transcribed as participants were providing an evaluation rather than in-depth conversations. Interviews lasted around 20 minutes and were guided by cues on clarity, relevance, and value. In
addition to remote interviews – and due to limited availability – some practitioners corresponded by online messenger including text correspondences and voice notes. They eventually took part in semi-structured interviews but wanted to provide immediate reactions to the overlay that would support discussions later on. Participants discussed their own practices to assess their degree of experience with inclusion and reported on their thoughts about the overlay. Cues to encourage conversation included:

- **Context:** Do you practice inclusion in your process? Is it prevalent? What does it look like, and how does it play out? Can you provide examples?
- **Clarity:** Are you able to open the document and read it easily? What are your first impressions, does the overlay make sense to you? Do you understand the terminology, how does it relate to your practice / field?
- **Relevance:** Is the overlay applicable to your practice? Does anything feel particularly notable or new? Is there anything less relevant to you? Do you think something is missing?
- **Value:** Does it seem useful to you? How would you use it? Can you imagine yourself using this, or does it need changes? Who could make use of the overlay? Are there any oversights or alternatives to recommend?

Participants provided their views on the overlay which were collated into three tables that respectively summarised their views on (i) Clarity, (ii) Relevance, and (iii) Value. This helped to review their thoughts, the tensions between different recommendations, and the nuances between their ways of working. It also fuelled a reflection on next steps and proposals to improve the overlay. A final version of the overlay - based on one of the overall recommendations - closes the chapter.
Chapter 4: Practitioner Accounts of Designing Inclusively

To gain a better understanding about real-world inclusive practices, a series of semi-structured interviews were conducted with six participants. As mentioned, their practices and outcomes vary but each are experienced in designing inclusively and all design for public buildings, spaces, services, and products. Chapter 3 (Section 3.3) outlines their profiles as well as the questions asked during semi-structured interviews about their practices. These questions also relate to evolving the proposed notions into more accurate representations of real-world practice. For instance, participants discuss the governing mentalities at play during the development process, their design stages, concerns around marginalisation and fairness, accessibility, user involvement, and the scale of change of their inclusive practices. In sum, they each explain their experiences advocating for the uptake of inclusion within their respective practices, roles, and industries. The following chapter provides a description of each practitioner and an account of their interviews. This includes an overview of the discussions, details about follow-up questions and guiding cues, and direct quotes that breathe life into the practices and lived experiences of designing inclusively. At the end of the Chapter, RQ2 and RQ3 are answered:

RQ2: How do practitioners advocate for and navigate inclusion in design projects?

RQ3: Which parts of designing inclusively are (most) prevalent in project development and in the negotiations and trade-offs within the project?

A discussion to answer RQ2 reports on practitioner roles and responsibilities, the different ways that users are involved, and the scope of a project. In RQ3, reflections on their motivations and mindsets are captured and highlight the nuances between their respective business cases, key experiences about designing inclusively, and their personal advocacy for inclusion (how inclusion is at the heart of their designs). These answers reveal some of the nuances and overlaps between practices and traditions. Their testimonies also support the following chapter which reports on the iterative development of notions. Indeed, throughout the interviews, new understandings and definitions of the notions emerged which supported the interviews by encouraging continually deeper inquiries. Thus, Chapter 4 presents results from interviews with each participant, followed by the answers to RQ2 and RQ3, and a short discussion about the relationship between these answers and the proposed notions.
4.1. Participant 1 (P1)

P1 is an architect who works within an inclusion and accessibility consulting team for an international multidisciplinary building engineering, architecture, and interior design firm. They mainly reported on projects in hospitality (hotels) and large-scale office spaces. Their team assists external clients and internal project managers with inclusion and accessibility needs. This section will outline both interviews conducted with the participant.

4.1.1. Participant 1; Semi-Structured Interview 1

Their advice is usually tiered to provide (i) basic minimum requirements, (ii) improved access and examples from previous case studies, and (iii) recommendations to benchmark and advance inclusion beyond industry standards. The first tier provides a review of accessibility standards, codes of conduct and regulations to ensure the client is at least compliant to code (legally compliant). The second tier uses case studies to provide ideas and advice on best practices. Then, their third tier pushes beyond existing solutions and codes to provide personalised information from user feedback and site studies. They collect information to propose how the building can be fit for purpose throughout its life cycle (usually about 50 years): “we are proposing something that is not just useful now, but will have value later on” (P1). Lines between each tier are blurred in the document they provide to clients to encourage them beyond minimum requirements.

For some [clients] it’s a really easy conversation to get started with pushing beyond and advocating for some of the inclusion that we think needs to happen and that should be happening. But for other clients, and honestly the majority of them, it’s a lot bigger push back from their side because it is seen as a lower priority (P1).

There are a mix of clients who react well to further recommendations, usually motivated by translatable benefits or optimizations. For example, a wheelchair user is compared to someone with suitcases in a hotel or a mother with a pram. Also, better access to elevators can improve flow in a building, and seating near a hotel entrance can keep throughways to reception clear whilst people are waiting in the lobby. According to P1, “It’s less on numbers, but trying to get [clients] to have an understanding of efficiencies; the percentage of people and translating that to the lift discussion where you’re not just resolving this for the disabled community but also for others” (P1). Although a client may comply with regulations and standards, P1 tries to explain the value of personal experience and insight: “in terms of box-ticking everything was fine, but we wanted the company to think about the experience in the space for every user group. To substantiate that we relied on user experience and user feedback. Less on numbers, really the experiences that people had”.

Relying on these experiences reflects the view that documentation or regulations about standards to access and accessibility are not always appropriate to user needs:
The problem of documentation is that it is from quite a long time ago (1960s and 1970s). They were about calculating the averages and accessibility standards for sizing that have become since quite out of date. So the minimum requirements aren't even really minimum in that the best practice [tier 2 of their advice] should be the basic standard. (P1)

Clients who are more reluctant often argue that their existing portfolio meets specific criteria and there is no need to change. This comes even despite reasonings that identify a market niche or gaps in a client’s current offer which could explain underuse:

We tried to push an awareness and understanding that there is a shortage in accessible rooms in hotels across [redacted - location], and we presented that within the framework of their design. We showed them that they could stand out from the other competitors and there was a business case for it because there was a need for these particular types of rooms in [redacted – location] so they could be quite a reference, or beacon, or stand out for it outside the status quo in that way. To be able to offer this. We got quite a bit of push back, but the architects that were involved in the project were really great because they were able to fit some of the accessibility ideas into the footprint of the building and it didn’t really compromise on the room number or the dimensions. But the company gave us push back because ‘well we’ve always provided x% of rooms and that’s been fine so why would we change that’. We pointed out to them that a lot of their portfolio was historic buildings so it was a lot of retrofitting and that x% has been sufficient in that it meets the needed requirements, but this was a fantastic opportunity as a new build. But they argued that ‘well we don’t even meet that percentage of needs for the number of rooms that we have, so we’re not filling them up with the clients that would need them’. We even explained that the requirements weren’t really being met in the first place with the designs of their previous rooms in a lot of their buildings. I think the real reason behind their attitude came down to ‘but if we can get away with it, we’ll get away with it’ so they opted to not make any of the changes for accessibility rooms and move in that way.

Part of the approach involves embedding inclusive values into client objectives. P1 explains that this is enabled by the earliest possible involvement in the project: “we try to frame these values within their objectives. And that’s where the point of 'the earlier the better' because we can better embed this thinking into their frameworks and into the dialogues and discussions and have a longer talk across the project” (P1). In architecture, this begins at site selection to help determine and frame expectations. P1 explains that there should be an understanding of not only the use of a building, but its culture, and management strategies.

A large part of the cultural strategy involves the participation of potential and current users. This can help align the design more closely to their outlooks and needs – improving the value of a building or space. There are different ways in which P1 and their clients involve and recruit users. In some cases, users are “an extension to the team, and we have consistent dialogues with them” (P1). In other cases, users take part in consultations, either at specific checkpoints in the project, or more often to provide feedback on current developments (sometimes bi-monthly). P1 reports that some of the most impactful advancements in a project were led by disability experiences and when clients introduced their own participants for consultation. In government funded projects, local councils often form and manage groups that meet to review through their own access needs. These groups
often represent or embody key users. In other cases, P1’s team have successfully hired agencies to recruit potential participants - not just the loudest voices, but those unheard within even marginalized groups. Although, this was time consuming and required very precise criteria for the agency to follow. Finally, P1 reports on the challenges to negotiating the participation of specific groups within the equality act: “The hardest sell is the idea of social, culture, ethnicity, anything protected by the equality act that isn’t a physical disability because that’s not captured in codes and can’t really be captured in data or building regulations” (P1). They mention that the requirements of these groups do not conform or fit into clear accessibility guidelines. Thus, the cultural strategy is significant to outline their values and needs beyond physical capabilities (this was explored in greater detail in their next semi-structured interview).

4.1.2. Participant 1; Semi-Structured Interview 2

After reading through and beginning to analyse the first semi-structured interview, a follow-up was done to clarify a few topics – namely, details into their tiered advice, understanding the culture of a building, understanding accessibility solutions with hospitality clients, and reaching out and learning from marginalised groups. It followed the same guidelines as other semi-structured interviews in this research. Specifically, the discussion was constructed through questions (and cues) such as:

a. How are the tiers presented to clients (are they clearly marked or embedded into a single document?)

b. Can you provide a full example of the process; do you negotiate the brief, do you work with them, do you help manage the process (such as time and budget)?

c. Does anyone ever come to you exclusively for advice on tier 2 (best practices) and 3 (going further)?

d. What does it mean to design with a culture of a building in mind? How do you access this knowledge with clients?

e. What do you think are their underlying motivations to a clients reluctance?

f. What advice would you provide to find / reach out to marginalised groups?

g. How can the input, experiences and needs of marginalised groups be considered more readily in the design project?

In the first instance, P1 explains the differences between each tier. In the first tier, their recommendations are essential, “something in a buildings or space that directly discriminates, prevents them from accessing a facility, service or something that constitutes a health, safety of life risk.” (P1). The second tier focusses on best practices, but specifically explains “preferred items of best practice, what we should be aiming for” (P1). Finally, the third tier encourages clients to future-proof their designs, to lead “companies to adapt to the new futures, and think about their problems in a much more holistic way” (P1). An example of the third tier addresses changes to office design brought on by COVID and its effect on our traditional ways of working: “we’re talking about
normality but actually things can’t be the same as they were - so we’re getting commercial clients saying that “people probably aren’t going to want to rent office space in the same way as before” (P1). P1 had already explained that lines were blurred between tiers to entice clients, but explains further:

Blurring that distinction in the first instance I find helps to have the conversation with the team without limiting it and thinking beyond the box we may otherwise find ourselves [and] tiers are to frame the discussion for the budget and prioritizing the most important and add the most value to the experience overall” (P1).

During the discussion, P1 strongly agreed that as designers and architects, we frame advice in a clear way for ourselves, but sometimes need to change its format to better sway clients or make it more difficult to shrug off certain (inclusive) concepts. As part of the third tier, P1 expanded on the idea of the ‘culture’ of a building:

When working with a client, a lot of it is understanding how they operate and trying to get a clear idea of what that environment is like for whoever we are designing the space for. If I were to sit in their office for a day and see how they move in the space and are expected to interact with each other and in the space. That’s what we’re trying to get out of it, not necessarily sitting and watching them (like observations) but most of the time through the discussion with end users and people who are setting the policies and management strategies in place and getting feedback in that way. And part of that will be challenging whether it’s the right, maybe challenging is too strong but a discussion of whether or not anything in those policies can adapt to better reflect what they’re trying to achieve and who they’re designing for.

Next, P1 challenges a client’s reluctance to include more accessible rooms despite the benefits. In the previous interview, P1 recounted a project where the client refused to add accessible rooms to their new hotel despite proof of added benefits and opportunities. According to P1, “there was that very clear reluctance to even think about anything beyond the minimum standard. The client seemed only interested in profit” (P1). Following attempts to appeal to their business case, this client, just as many others shared concerns about the aesthetic qualities of an accessible room.

the operators [i.e. clients] expressed concerns on what accessible rooms look like or if it isn’t booked by someone who requires those features then is it going to be as attractive as the other rooms? So, there were lots of concerns hotel operators have expressed but again there are solutions we’ve worked together with them like demountable grab rails as an example. Very simple things that don’t take a huge amount of time to install if guests require and if there’s no need, no one is the wiser and rooms are just a bit bigger, and who doesn’t want a bigger bathroom. When the client is open to the discussion, there’s 9/10 a really good solution to address those design issues or concerns.

Finally, P1 expanded on the value and participation of marginalised users as consultants in the briefing and development phases of a project. First, they advance that client driven user participation often leads to more successful projects: “where it’s more successful, it’s been where it’s driven by the client than through us, because in those cases, there can be a very conscious effort to
involve the appropriate internal stakeholders to reach out to the community, to connect with a wider stakeholder group” (P1). To recruit participants, P1 and their team often reach out to local authorities and community groups but do sometimes employ agencies for specific profiles. This usually involves a first month to form a brief that identifies the needs and numbers, then “once they were clear on what it was and types of questions to ask to get the appropriate people, about a month afterwards that we had the attendee list” (P1). The brief is not always straightforward, as P1 explains through an example:

We’ve employed an agency to specifically help recruit people; the type of consultation we want. In that one, we were very conscious that consultations about cycling attract avid cyclists, not who we were looking for. So instead, we employed an agency to contact people who don’t cycle because those are the views we are after and people who lack the cycling infrastructure they need because that would likely be where implementation needs to happen. It’s making sure that the voices we hear are not the ones we always hear. The hard-to-reach stakeholders are only hard to reach because people probably haven’t bothered trying to get in touch with them. It was successful in this occasion having someone employed and specialising in reaching and contacting people.

Their brief outlined the need to avoid users, and instead identify people with specific backgrounds and qualities: marginalised users with an interest to cycle, but reluctance to adopt the practice. Their inquiry uncovered a more holistic understanding of the problem:

The media and advertising when you search for cycling, it is always this denomination, this kind of person. When you look at people in minorities, with disabilities or the ageing population, they aren’t represented in those formats. Cycling isn't really...the idea of where to access cycling as a diverse range is lost in practice when its offer to multiple users. The barriers, one of the big barriers that came up was institutionalised racism. The fact that they were nervous about going out because of their race and how their relationship would be with policing or with other road users. There was also another problem of physical safety; driving alongside motor vehicles, safety and visibility for recumbent bicycles. So the issue being that people don’t adopt cycling because they can’t even really explore the idea or explore practice put into cycling. Another issue was accessibility regarding price. The potential of hired schemes for options other than 2 wheel bikes, and not committing to purchase something when you aren’t sure you will adopt it in the first place. We had focus groups on specific aged and disabled groups and there was a start to support people within the spaces that they are limited in. The safety and visibility of those people. In our assessment, there was also an idea of issues like work commitments and families, especially with women. So they couldn't really use bicycles because they had too many family commitments.

Values such as safety, representation, and obligations were found to be key in improving the uptake of cycling within marginalised or underrepresented groups. The problem did not end at the design of bicycles, but rather considered the broader context of cycling that seems to neglect protected characteristics such as cultural background, age, race, and gender. These findings support the arguments from improved inclusion and are used in the conversations with clients.
4.2. Participant 2 (P2)

P2 is an industrial designer who works in the development and manufacturing of outdoor recreational structures for municipal public parks or privately owned theme-parks. The company is well established internationally and driven by business-to-business sales (wherein users are not the purchasers). P2 is not specifically trained or seated in an inclusion and accessibility role within the company but is self-motivated to find solutions for marginalized users (mainly children who cannot fully engage with mainstream park designs). This section will outline both interviews conducted with the participant.

4.2.1. Participant 2; Semi-Structured Interview 1

Their most recent project focussed on developing new inclusive principles for the design of children’s outdoor play structures. They conferred with the sales team to determine market gaps and identified a need to design structures that suited younger children (ages 0-5). In tandem, P2 wanted to advance a more inclusive approach to the design to suit not only ‘standard’ children, but a broader scope of users – including children with disabilities and their carers. Through discussions with the team, they explored further:

"We really focused on inclusive play, and what that meant when it came to [games and play]. My first focus was researching on inclusivity, and of course development milestones for that specific age group. Considering just the standard user, the child, and the family/caregivers who are always present because of the younger age so they're never playing alone. And of course, kids, or family members with special types of needs of different needs. We just tried to bring forward ideas and criteria that included every type of inclusiveness. So we focused on physical disabilities or disadvantages, and also cognitive ones. Our research included more of the cognitive types of disabilities such as Autism, overstimulation, and other types of cognitive disabilities. That's what we tried to shed light on, and we tried to establish design criteria that helped these types of user. What's interesting is that we were trying to design for very young users, and often older users with cognitive disabilities fell into that younger age group even though they were much older biologically. So it was really interesting to be able to venture into that."

They determined translatable benefits between their initial group of users, and others with varying needs. This included the family members, or caretakers who may interact with the children and structure as well as other children – namely older children with specific disabilities. They found resonance in designing inclusively for their initial younger group of children (ages 0-5), and children/young adults with disabilities (ages 0-15): “whatever overstimulates a 2 year old will do the same to an 8 year old with a cognitive disability (P2)”.

Despite the successes in understanding and valuing a broader outlook, testing with users and allowing them a central role in project development was difficult. When asked about formal user involvement, P2 replied: “There was none. We had to fight to have user tests, we had to fight..."
almost to have one user test. It was very difficult to organize, difficult to get done. It was always a hassle, begging to get tests done, nothing was user led” (P2). Despite the challenges, the company agreed to hire a child behavioural psychologist to consult on the project. This helped to understand the types of play each age group preferred. In summary, younger children were less adventurous and enjoyed ground-floor activities with lower intensity features such as textured walls and flowing water, while older children were apt to explore upper levels and higher intensity activities such as water cannons, climbing walls and water slides. The information led to prioritise three key features of the design: ground level activities, water effects, and material:

Through the research we realised that younger age groups or a child with cognitive disabilities would not feel like they wanted to go into an elevated structure because it scares. It’s very scary, with the water, the height, everything...they tend not to want to go inside because of everything that’s happening. That’s why we tried to bring games on a ground level. Rather than having water games or interactions inside the elevation, you didn’t have to go in, climb the stairs to go inside and have access to water games. Second, were the materials. We tried to play on tactile play, especially with the polymers involved. We had roto-moulded polypropylene and injected moulded polyurethane. We included textures that were really signalling where you would like to manipulate and play with the water effect. This was good with children who were blind or had any type of physical disability and 2- or 3-year-olds who are very sensitive to texture change and find it very soothing. Needless to say, water in itself is a very stimulating medium, so you don’t need to add much to it for someone to be fascinated especially a child. Which is why we reduced the water intensity to the bare minimum. There’s no splashing water or water coming from above. Everything is predictable but you can still interact with some features. Change the directions, or type of flow. Very small interactions, and it’s action-reaction. You do something and something happens right after. They’re very smooth. We also played with the scale of wetness. Very wet is high intensity, and not, low intensity. On a scale of 1-5 we stayed on the 1 and 2. And of course we played with the colours: pastel colour tones that were more welcoming, but we also added saturated colours on interactive elements. Anything to rotate, stimulate was in an accent colour.

P2 created user profiles for different children and translated behaviours and preferences into parts of the design. Beyond the data taken from sales teams and their consultant (child behavioural psychologist), P2 took initiative outside work: “I love to do observations, so I would take my lunch hour at [a park] and watch kids play, in a non-freaky way because I had my [redacted – company] T-shirt on and take notes”. The observations helped make sense of the data and understand how different users interact with specific features.

Although key stakeholders in the company showed interest in designing more inclusive structures, P2 often met challenges with co-workers. Their engineering colleagues were reluctant to make changes as there did not seem to be clear added value from an engineering perspective at first. These colleagues were gatekeepers to the next development stages.

Anything brought forward was always met with resistance [...] so we had to go through a lot of back and forth and start to include them in part of the ideation process to make them think the improvements were as much theirs as ours. This started to work. First it was met with ‘hell no’ then it was more ‘maybe this, maybe that’. It was maybe more collaborative at the end.
To entice these co-workers, several production and manufacturing improvements within the project were needed to advance the disability-driven ethos. The design was presented again under the premise that it not only provides more inclusive designs, but would equally reduce the amount of material needed, installation costs, and after-sale maintenance. The final designs were accepted and allowed the project to move forward with its disability-driven objectives - but only once paired with improvements that suited additional criteria set by other stakeholders and included their input and guidance.

Finally, clients were accustomed to creating their own ‘pick-and-mix’ designs; A list of structural configurations allows clients to add their own components such as slides, climbing walls, or water features. In some cases, this can compromise the appropriateness of a design for certain targeted users. To avoid this issue in the new inclusive play designs, products (structures) were sold in a single configuration as the design team proposed an 'ideal play experience’: “we used our research kind of like the argument. We specifically placed these things here, and that type of layout or configurations because this is the ‘ideal' play experience” and we sold them as pre-assembled modules” (P2). While its success is unclear - due to a COVID-19 halt in production and sales - their Inclusive Play product line had already received seven pre-orders, which is considered very high. P2 and the design team were happy to launch a new inclusive play structure despite several attitudinal and manufacturing challenges across the company and production team.

4.2.2. Participant 2; Semi-Structured Interview 2

Just as participant 1, a follow-up semi-structured interview was done to clarify a few topics – namely dynamics within the organization, user involvement, and the effect of time and budget. It followed the same guidelines as other semi-structured interviews in this research. Specifically, the discussion was constructed through questions (and cues) such as:

a. It seemed many team members were reluctant to take on new inclusive ideas, can you explain why that may be? Did you have allies in the organisation?
b. It seems users are involved in the final validation steps of a project, do they take part elsewhere in the process?
c. Do you see value in user involvement elsewhere in the process? And how could you entice the company to agree?
d. You mentioned that you were short on time…what would you have done with more of it?
e. We never really mentioned budget...What kind of restrictions and opportunities did the budget (or not) provide?

First, P2 expanded on the dynamics within their organisation, specifically to explore the reasons behind a reluctance to try new inclusive ideas. They explained two clear divisions within the group:
specialisation, and age. The team was described as segmented: “More technical people cared more about the technical issues, and the younger generation, or bachelor graduates rather than technical degrees were more concerned with inclusive issues” (P2). This division widened as the design team consisted of younger staff, whilst the technical team was predominantly older engineers. P2 believed that “it’s just a resistance to change in general; On a personal level, they don’t like change, that generation is used to something so if it works you don’t need to fix it. I think genuinely just a personal choice of theirs to not. Just to resist initially as a reaction, and then have to be convinced through the process” (P2). P2 compared their outlooks as “If it works you don’t need to fix it” versus “If it works, why not try to break it and make it better”. Despite trying to work alongside one another, P2 was sometimes pushed to force their hand and remind that their shared Chief Design Officer saw value in the inclusive endeavours and insisted on the attempts. P2 believes that the rift between their team stalled the uptake of inclusion.

During the first interview, P2 mentioned that users only participated in the final stages. Specifically, this meant “final fine tunings. There’s big assembly to park features, but there’s also small pieces like nozzles that could be machined within 2-3 hours and modified that were easy to fix. But pre-injected, thermoformed, rotomolded pieces were set in stone. So it was more for the details, the final experience” (P2). Importantly, the research from these fine tunings could play a part in future projects and support improvements: “it’s a living project so they’re still optimising and reverse engineering from a technological standpoint, as well as the play value for users” (P2). The next steps could include a broader understanding on inclusive issues:

it’s of course the first steps that we would need to inquire and learn about general user needs, and it’s not only about again - when it comes to play and children - it’s about the parents, carers, other children. A child is never on their own, you need to think about it as a group. So generally inquiring in the beginning because there’s nothing to test since there’s no product. But asking what are the needs, the nice to haves, the pet peeves, what frustrates you about what exists in general. Then when we get to layouts, the ergonomics of it, maybe testing it out with actual people with disabilities, cognitive and physical, and of course the water effects and play values and the end.

Despite their roadmap, time was a significant constraint to the project. Other priorities – predominantly affecting the company’s bottom line (financial threshold) - trumped their explorations into inclusive designs due to their limited time frame:

It was such an unnatural process given the time frame that, as is, no point in the process would user involvement have been useful because we skipped entire elements that we should have searched and tested. [...] It’s a structure, so it’s rather complex project; there would be safety, optimising some of the assembly, some of the materials, in general optimising on multiple levels. That would be the first priority. Yes, the play value is important, the user experience is important but also if the product is not optimised for the most efficiencies, let’s say the most ecological way to build it using existing products that we have or materials that are recycled,
that have been tested. So, there’s a bunch of different levels of optimisations that I would have liked to have had or done.

This provides insight on both the challenges to the uptake of inclusion, and the relationship between time and money. Timeframes constrain the design team to focus on specific aspects of the project before opening to inclusion. These aspects are predominantly financial concerns such as manufacturing and production costs - distinct from the budget of a project:

Money was not necessarily a big issue when it came to the design process, but when it came to the actual product that was produced. Since we’re R&D [Research and Development], we have a good amount of grants. We had a lot of extra money into the studio. The main issue was not having more money to pay for our time, it was having to produce products that really optimised pricing. I was never denied something for testing because of price but was denied going through production because it wasn’t logical from a business standpoint to have that included.

P2 demonstrated how aspects beyond generating ideas and proposing inclusive solutions can largely impact the uptake of inclusion. A large part of the challenges includes the dynamics and attitudes within a team, existing and longstanding manufacturing, and production processes, as well as timeframes. Yet, through efforts to design collaboratively, demonstrating financial value, and addressing all feasible changes, P2 and their team managed to create a new product whose technological changes have transferred into the entire production line. To accommodate some ideas, they redesigned the entire base structure which directly translated to and benefited their mainstream products. This shift demonstrated the value of their efforts and provided greater leeway to more inclusive endeavours in future projects.

4.3. Participant 3 (P3)

P3 is a practicing artist focused on children and play and currently holds the role of a curator / director of inclusion for an established public art gallery. Their role is to provide opportunities of engagement and connect those who are disabled with the gallery and its offers. There have been several successful events such as family art sessions, inclusive movie screenings, and sensory tours. Their approach is not directly centred on a business case and instead reinforces the values of community. Their view on inclusion in businesses is that:

Business models seem to be primarily about making money. And it seems that to make the most money, you have to act swiftly and in very uniform ways and I don’t think either of those things suit humans or human life or the development of people. [...] this isn’t going to be quick, or about mass production, or one-size-fits-all. But also, recognition that the payback is immense!
Rather than provide uniformly designed activities that suit a broad audience, P3 focussed on the design of a specific programme that would include otherwise outcast or marginalised families to attend art classes/sessions.

The role is very much about working in recognition of the fact that individuals - especially families with children with complex needs - were basically not visible, not attending the gallery. An acknowledgement that there was a reason behind that. And those individuals who form a huge part of our community were not feeling safe or comfortable or even aware that it was a space that existed, let alone a space that could recognise them and flex to their needs and presence in the same way it should for everybody. The core component was to implement and manage the new programme of activity. The intention was that it was equalising for families, artist-supported sessions. And so really dynamic activity that is shaped in such a way that a full family with one or more children with additional complex needs could enjoy, be stimulated, be comfortable, be recognised, be met, but also be safe.

These sessions were facilitated by consulting artists attuned to inclusive practices. Prior to attending, P3 provided information sheets about the families and their likes and dislikes to help the artist build a session around their preferences and abilities. As P3 explains, the sessions are “play-based, open ended, not seeking predetermined outcomes. And in a sense, our participatory artists who are not as fueled by a desire to very directly share skills, [...] it’s much more experiential. [...] It embodies the spirit of being an artist in terms of play with materials, handling them, being in stimulating creative environments” (P3). P3 also directly supported the sessions at key points. They were an inviting and consistent ‘face’ to the sessions at entry, during the sessions when participants struggled to engage (physically or emotionally), and at the end to help transition families out sessions. Before launching the programme, P3 reflected on the challenges and foundations to the sessions:

My role and this programme were new, so there was no track record, there was no trust, nothing to say to sell ourselves on, other than my words and character and the rapport I built with strangers in those starting weeks and months in the program. But for me it was about recognising that we needed to initially shape the various elements of it that needed to nurture a delivery team and culture of play and joy. And nurture the same feelings and values in the team and how we carried ourselves and supported each other as we were hoping to inspire within the encounters that we shape together. About really embedding and making sure those threads - like kindness, warmth, and respect - seeing each other as experts in our lives ran across the entire programme ethos. An awareness I had very acutely. I think it was about bringing it back down to basics; we needed a space, with an open door - you know physically and metaphorically - a space, or a sort of recipe that mixed up these core ingredients. [...] It was about thinking about those core ingredients and creating a foundation. I guess you could call it an access point, a very safe recognisable way in that families would hear the language about it and hopefully feel a resonance or immediate relevance and would have their needs met, be safe, have a positive encounter.

They understood the value and roles of each person within the space – their own impact as well as the artists, main users (children) and their families. The programme would best succeed through recognising the different expertise and abilities of each person: “we’re all very different people on different days and bring different parts of ourselves when we enter spaces” (P3). Their attitudes were equally important; a respectful, reflective, and empathetic approach to the design of these
encounters. The same ‘users’ continue to attend the programme and participate in the activities. P3 views this as a great success to the design of the encounters and spaces. This suggests that the gallery is building a strong community-driven case and successfully rescoping their target audiences to include those who were otherwise marginalized by the design of the events or spaces. P3 suggests a need to “have opportunities which recognize that sometimes, to create an equality of access - or your best attempt - you’re actually shaping very different opportunities”. As the gallery continues to broaden its offer and design new events and spaces that consider the varying needs and abilities of their community, P3 reflects on some of the risks when translating the frameworks and scaling up the programmes and activities for specific requirements.

There’s huge opportunity but it has to be handled with care and awareness that you’re not accidentally going down a route of ‘this is for these or these families, and this in the inclusive one because I’m sorry, this is the other the non-inclusive one, and it this how we want to operate’. You never know who is going to build their confidence or seek relaxed event access as a safe starting point or first connection with us and then go into build their confidence and desire to attend another event, join a program, attend a studio, or whatever it is.

In this way, there should be a clear outline of the offer:

It’s important to have a balance between very bespoke occasions with specific sensory adjustments where we can confidently say ‘at this point on this day with absolute certainty we can confirm that the hand dryers will be turned off in the bathrooms’ because for some families, that’s the only way they would use the toilets in a public space.

While P3 appreciates the growing number of offers, they question some of the intentions. In some cases, these inclusive or ‘relaxed’ events are designed as introductions into the gallery and offers. They are treated as a transitional activity into their mainstream schedule. P3 reminds that: “You’re not hoping to work with someone with access requirements to mend or change them. You aren’t seeking to say that the non-relaxed version is the standard, or normal, or one you’re aspiring to be comfortable in” (P3). While it is not an objective, they are pleased to see people open themselves up and attend different events. The goal is not to use these events as levers for participants to engage with mainstream activities nor to typecast them and create new access boundaries, but instead to allow people to enjoy (and continue to enjoy) within sensory conditions that are comfortable to them, in the same way as anyone else.

4.4. Participant 4 (P4)

P4 works as the design director and lead UXUI (User Experience / User Interface) designer for a start-up company with a physical activity app. The founding CEO instilled an ethos of inclusion and accessibility from the outset of their business. This was first incited by their own colour-blindness
and challenges with current app design. Although P4 is not specifically trained in inclusive practices, they agree that inclusion and accessibility are intrinsic to every stage of their design process.

The company developed an algorithm for workouts and attempted to design a game-based fitness app, but recently shifted towards inclusive activities for a wide range of physical bodies after noticing a market gap: “When we were product driven, we worked towards gamification rather than lifestyle because we saw the gap at that point, but now people as less likely to pay as much for a game than the social aspects” (P4). The new ethos is summarized as ‘movement for everybody and every body’.

We’re really aiming for one app fits all - movement for everybody, and every body. That’s the challenge I find interesting. We don’t want to segment our user base because they have special needs. We want to offer something that is useful and interesting for everyone. That’s why we’re designing with accessibility in mind, and not for each disability. Basically, integrating it into the design so it doesn’t hurt us [able-bodied], hurt anybody

Rather than develop workout capsules from conventional full body gym workouts such as lunges, they instead encourage people to stay active throughout the day with movement breaks. Aware of physical limitations, they suggest multiple options that can suit different capabilities such as taking the stairs, wall presses, or dancing. The latter was inspired by testimonials from a user who often relies on a wheelchair and is unable to practice standing movements:

We had a talk with our users and one of them who’s actually in a wheelchair; they like the app but they can’t use it. They can do the movement breaks and that’s about it so we’re thinking of trying to find ways to provide exercise or allow those people to have the same experience and advantage of moving every hour. So it’s a big concern that came up recently.

They broadened their user groups and began to consider those who may want to engage with physical activity but are not (or cannot be) fully committed to a gym-style approach: “The people we are aiming for aren’t exercise junkies but rather people who want to get into fitness or someone recovering, in physical therapy, those who are starting back working, or people who just don’t want to live a sedentary lifestyle” (P4). Broadening their scope and turning to a more inclusive outlook on users has equally created new business opportunities:

Our algorithm validates that you did the exercise (versus cheating). You can’t lie about the amount of movements you’ve made. This is how we got partnerships with insurance companies who want to promote healthy lifestyles. Since we validate their movements and activity habits, they can validate their people are exercising and offer reduced rates.

In the design of their app, P4 makes a clear distinction between accessibility and inclusion. First, they mention that accessibility is the crux of their work: Accessibility needs a lot of work on my end, like how we place things on the screen. P4 explains that accessibility is about ensuring that fonts are readable, contrasts are sufficient, and text can be read coherently with audio captions native to each phone.
We are currently working on the clarity of the app and redesigning it because it’s a rather complicated app. We are paying attention to the contrast for the visual aids, and also how the app is structured for closed captioning and blind users who read by blocks so when text is inside or outside a block it reads certain things first. We’re taking all of this and rethinking the app so it’s a good experience for people with disabilities.

They use websites that check for colour contrasts and refer to Apple store guidelines on button sizes and font types. Otherwise, “Inclusivity is about what’s in the copyright and the photos is how I understand it ... currently. Working with the marketing team, this is how they use it. The message they build in the app, the story of our app is managed by marketing, I apply it to the app, and we merge our stuff together” (P4). Inclusivity is viewed as an additional layer, it “is more of a social aspect. I find for myself accessibility is more important and inclusivity is a layer on top because it’s in the visuals” (P4). P4 explains that inclusivity is mainly to market the product using a more diverse range of users. Rather than pictograms of avatars, they include images of different users in anything from office wear to everyday streetwear practicing the movement break. These serve as visual cues to the ethos, but P4 explains that they focus to ensure the app is clear, coherent, easy to navigate and includes enough activities to suit every body type and physical condition.

They also confer with users to continuously improve their app with weekly updates: “We aren’t massive so we’re still at a stage where we can afford to test directly on our users and get feedback on them. But, for larger changes, we contact users; We select people and schedule video calls and will send prototypes which they can open on the computer or phone” (P4). P4 explains that the team is not focused on expanding until they are fully confident with app performance and suitability. The company instead “buys users for now” with gift cards for continued use of the app, and feedback through one-on-one testing with users. Their primary concern is to maintain a strong core of users (5000 per week) that can help them through feedback during tests and comments in the app store.

4.5. Participant 5 (P5)

P5 is a retired commissioner and design engineer for a major metropolitan underground transport network. They were not specifically trained to design inclusively, but were a strong advocate for improved safety, inclusion, and accessibility for all users during their employment. Today, they are seated within several disability advocacy groups and actively participate in the review of different national accessibility guidelines.

Across a few stories, they explain the benefits of including people who are disabled within the development stages of a project. For instance, a woman who normally uses ‘sticks’ (forearm crutches) to help her walk was invited to test a new reception hall in a building. By simulating a transaction, her inability to safely lean against the counter and set her ‘sticks’ down presented a
clear flaw in the design - it was mainly unusable. P5 exclaimed that “if an issue is put forward by someone disabled, it’s harder to argue with that person. If we are at the curb and I can’t get down, it’s an easy argument versus let’s say talking remotely about it” (P5). By this logic, specific users or knowledgeable consultants - like those with disabilities - should be involved early in the process: “If you had a visually impaired person [for instance] in the commissioning, that problem wouldn’t have happened. You don’t absolutely need someone disabled, but at least people who know about the issues of the disabled” (P5). P5 explains through personal experience that it is more important to settle on a well-designed project before construction as it is less costly than retrofitting:

When I started on the project, my boss explained: ‘I don’t care how much time you spend on getting the design right, providing you don’t go beyond the date, get the design right’. Because at that point it’s just words in a document or lines on a drawing. It doesn’t cost anything to change. It’s about getting the design right to start with. I’m a great believer that this should happen. Sadly, it doesn’t; We’ll very often find disabled people aren’t involved at the early stages. But if it suits the disabled person, chances are it’s going to suit everybody else.

They adhere to a universal design outlook on the project wherein starting the design from the perspective of a (dis)abled user should form a solution that suits all. In the case of retrofitting (redesigning, or improving upon an existing design), P5 explains the value of including varying abilities throughout the walk-through/ assessment of the space:

Taking an existing building and going through it with the people who have disabilities saying what are the problems. Most people equate disability to wheelchair use to access an entrance, but once inside the building, do I know where to go, how easy is it to find my way with learning difficulties or dementia which is now a more fashionable argument. It’s hard to access without signs, or a hearing loop in a room, can visually impaired “see” what they are meant to be looking at. Again, the easy one is restaurants with same colour flooring, chairs, walls and tables, no colour contrasting cutlery. It sounds silly, but in terms of visually impaired [it] affects about 1 million people in Britain, only 5% have no sight at all, most have a level of sight albeit very small. I’m about to start something on dropped curves and tactile paving. [Redacted location] has lowered curbs, no tactile paving. That’s actually more dangerous for visually impaired as they have no clue they are coming up to a crossing. It’s easy to drop the curve and it’s done, but it hasn’t had the design review process or commissioning process.

P5 connects every aspect of a building into an inclusive outlook. Each element, from overall access into the building, to navigating the spaces, to using them is unique to different abilities. The importance of including users with varying abilities is a key part of their process. P5 equally understands time constraints but argues that when building large-scale and long-term public projects, suitable designs that are submitted late are more valuable than flawed designs completed within schedule. Successful solutions consider disabled users. This helps avoid undue reputational damage and has a positive ripple effect across users, their families, their friends, and beyond. P5 reflected on an experience to explain the value of this broader perspective and further link inclusive objectives with the business case:
There’s been a comment recently on LinkedIn about a blind person walking off a [train] platform because it lacked tactile warnings. I then suggested you could use screens [screen doors]. She was an architect and said they are expensive. But...how much is a life worth? I’ve been through this argument. I know the accountancy method and the reality, but there are all these other issues to emphasize the reputational damage it does. [Redacted – Train station] has platform screen doors. So when I went over to [the project], it had been about a year, they tried to add screen doors, but failed. The chief engineer said, ‘well you’re in the business, give it a go’. The engineer knew it could happen, he was Malawi and had seen it in Singapore. Something about 99% of drivers who are involved in an accident like that (death on tracks) never drive again. You’ve got the loss of their training and the cost of training someone new, and the cost of disruption of service which can all go in the business case. You can also argue costs that aren’t in the case: hospital costs of the injured person, emergency service cost, the trauma of staff, counselling costs. All of that outside that immediate business case fall somewhere in the organization, and it does reputational damage. Those involved will have a ripple effect on their immediate friends, coworkers or family concerned about the issue. Finally, someone says ‘I’ve been on [redacted – train line], they have screen doors’, but why don’t they all have them?

Their testimonial reveals the importance of considering different users as well as their broader network whilst still closely aligning with a business case. The driving ethos of inclusion and participation for P5 can be summarized in 4L’s:

**Let Me Get There:** Transport and navigating spaces can be challenging and more labor intensive or stressful for those whose abilities do not align with common transport infrastructure. (Such as lacking step-free access, lifts, accessible taxis, ...).

**Let Me In:** Ensuring that spaces can be accessed readily. Usually enabled by visible signage, hearing loops, suitable dimensions or clearances, and step-free access within buildings.

**Let Me Participate:** Ensuring that people can interact with others and with the materials or tools in a meeting (such as prototypes and drawings) and use a space knowing they can escape / leave in case of emergency. There is also the attitudinal concern of “don’t put me in the corner and forget me because there’s nowhere else my wheelchair and I can fit” (P5).

**Listen:** Allow people to speak and have their concerns considered within the framework of a project. Distil their issues into existing or new design criteria. Offer the opportunity to express themselves outside of conventional dialogue (i.e., by navigating a space and reporting their concerns, by simulating a situation, or by asking them about their everyday experiences).

### 4.6. Participant 6 (P6)

P6 is foremost an artist who advocates for disability through their work, but has recently developed an inclusive methodology through their experiences leading the refurbishment of several public arts and theatre venues over the last few years. Their insight is seated within personal experience with disabling spaces.
When consulting with clients, P6 uses a 3-phase approach that addresses the minimum requirements, actionable changes, and long term strategies. P6 first explains phases 1 and 3:

We review everything happening - looked at identifying potential barriers and opportunities. The first group is really basic - Equality Act stuff that we weren’t going to touch but they had to sort out immediately. Things like you can’t access the toilet in a wheelchair because someone put a radiator there, or claiming an accessible toilet when really it’s way too small. It’s a marginally larger toilet, but definitely not an accessible toilet. So that [is the first] group, basic equality act stuff, then the longer-term strategic stuff [third group]: Things that are important to address but we aren’t going to be able to do in the life of this project straightforwardly - so things like they really need a changing places toilet which is a better standard of accessible toilet. That’s stuff you can absolutely work towards; you have space and can likely get funding but takes strategy and time.

The second phase focusses on the development of ideas and implementation of changes. The bulk of their efforts is invested in phase 2, working with individuals from the organisation to find inclusive solutions:

this phase in the middle that we think we can explore together and address through the process. We would then build teams from within [the organisation] for each of the ideas with cross-areas of working. People would have relevant experiences or responsibilities relating to that area. Then let’s think about those things creatively, come up with suggestions, test them out, and see what works.

Through working with the individuals from the organisation, specific solutions to their own real-world problems are brought to light, discussed, and potentially resolved through the process. In some cases, clients were reluctant to alter spaces – fearing they would lose useful parts of the building to inclusive initiatives:

What was interesting is when we first started talking about permanent chill out spaces in the building, we identified this really small meeting and initially there was the idea that they were losing the small meeting room but very quickly as soon as we had a prototype running, they realized they hadn’t lost a small meeting room, but gained this amazing space that was being used by audience members in really interesting ways.

Their reluctance faded and they could understand and witness the benefits these inclusive endeavours provided to their users. Better yet, the benefits translated to an improved business case, wherein their inclusive spaces were “attracting clients who were otherwise booking other venues because [the chill out space] was a facility this location had that lots of venues didn’t” (P6). P6 was not only able to amplify inclusive value into a business case, but use these successes to leverage future projects with prospective clients.

P6 insists that inclusive and accessible design can only be achieved when the strategies are not exclusively public facing. This leads to a development process that includes staff members, maintenance, performers, and audience members with diverse bodies and minds. They also have a network of ‘critical friends’ who help stress test venues during development phases and provide
feedback about the space according to their own access requirements. In probing the access needs and concerns of all those who interact with and within the space, more precise problems and richer solutions can emerge:

At every point we were looking at it from audience, performers, and staff. At no point was it just about doing something in a public facing way, but to look at it from all those areas. Relatively quickly people started talking about their own access requirements and having those conversations, people start thinking about it and applying it to their lives and to themselves and it was interesting that it opened up conversations and brought out talks that hadn’t felt as easy to have before.

This is a means for P6 to help break down normative practices and thinking. They explain that in designing for often quantified guidelines, practical issues are neglected. For instance, “it is very easy to install a radiator or place a rubbish bin in a turning space” making the proposed ‘accessible’ throughway unusable. P6 also proposes thought provoking questions centred on the people, not their disabilities:

**Question 1:** Could two people come into the kitchen as it’s designed, make a tea, and sit at the table to chat for a few minutes?

**Question 2:** Now, could those two be using wheelchairs?

These practical questions go beyond accessibility requirements to highlight the everyday needs of people who are otherwise seen as ‘navigators’: making it efficiently from ‘point A to point B’.

Accessibility is therefore seen as a continued effort, not an end goal assessed at project handover. These insights are formed by personal experiences of feeling outcast or forgotten:

Often for a disabled person the messages are negative and boil down to ‘we haven’t thought about you and your fire risk’. We want to change them to ‘we thought about you, we want you here, you are valued, you are welcomed’. This is sort of a radical welcome.

Through working with clients and learning more from designing new spaces, P6 discovered the roots of some client’s reluctance. Despite their interest in becoming more inclusive, P6 explains that: “I think there’s a lot of anxiety around getting it wrong with disability. We hear lots of places say they don’t want to get it wrong or think that’s ‘too specialized’ and somebody else is probably better at doing it than us. I think a big part is taking away that fear and showing that this is already part of your work” (P6). To help clients understand and practice inclusion and accessibility, P6 proposes three commitments that are explained as “simple to accept yet radical in the outcomes and benefits they create for diverse user groups”:

**No new barriers:** you may inherit barriers that take time and planning to dismantle and undo, but you should commit to not creating any new ones through thinking about a variety of bodies, minds, and perspectives. The thing I like about that is that it sounds quite simple, but it’s also quite radical because it means - especially for a creative organization - if you’re going to honor that, you have to think about everything in that layered way from the outset.


Equality of experience: for a long time, it was ‘as long as it was technically accessible to disabled people’. [This commitment moves] beyond just being technically accessible, to thinking in terms of the experience. It’s about using creative tools. The quality of experience is not about having things in the exact same way but having thought and given creative attention to the different ways people might access different elements.

Reduce Fuss: So much extra labour falls on disabled people and there’s often a lot of additional fuss around access requirements. That may mean that you arrive somewhere, and people may not know about hearing loops, or where to find the key for the accessible toilet. These may feel really small in of themselves, but cumulatively send the message that ‘you’re not welcome, not thought about, not valued’. This third commitment is just about embedding practice so that it is routine, and we take labour away from people.

4.7. Answering RQ2: Navigating and advocating for inclusion

RQ2 explores how practitioners advocate for and navigated inclusion. Notably, P5 reported that the most effective change happens through active participation and working for inclusion from within an organisation. Throughout discussions, it became clear that (i) practitioners’ different roles, (ii) the ways in which they involve users, and (iii) the scope of a project, all influenced their abilities to support the uptake of inclusion. These three themes are explored below. These findings help to form a better understanding of the proposed notions later in Chapter 5 (answering RQ4), as well as some of the opportunities that cut across practices to support the uptake of designing inclusively broadly (RQS).

4.7.1. Practitioner Roles

Practitioners reported on the influence of their roles and responsibilities. Some could lead a project, while others would guide significant developments stages, or take part as consultants. Either way, they all shared some notable similarities. With early involvement, practitioners felt better equipped to embed inclusive objectives and practices that could guide the overall project, process, and team members. According to P1, through early involvement “we can better embed this thinking into their frameworks and into the dialogues and discussions and have a longer talk across the project”. In practice, Heylighen et al. (2017, p. 514) report that early contributions can address critical spatial coordination issues: “At the scale of the building, the mere choice of the location already has implications for how many people are included: is there public transport in the proximity? Are there possibilities to park a car close by for people having difficulty walking?”.

Regardless of their role, each practitioner is influenced by constraints within the project, such as project deadlines, established design criteria, and even weather conditions to enable user testing. It was also found that certain key members in a team control whether an idea is implemented or brought into the next development phases. This is sometimes referred to as gatekeeping
4.7.2. User Involvement

User involvement has been well-reported as a significant part of designing inclusively (Sanoff 2010). Practitioners learn from the lived experiences of (usually marginalised) users and distil these into project objectives. Yet, it seems that their type of involvement can differ greatly. Throughout the discussions, 6 distinct types of involvement emerged – described in the table below:

<table>
<thead>
<tr>
<th>Involvement</th>
<th>Description</th>
<th>Concerns</th>
</tr>
</thead>
<tbody>
<tr>
<td>As Leader</td>
<td>Guide a project and drive an ethos of inclusion, perceiving every aspect of the project through their own access requirements.</td>
<td>Users are viewed as equal contributors and require the skillset to lead a team. Access requirements must be met to fully participate in a project. Users should be supported to fully engage with relevant parts of the process. Recruitment should secure financial stability and compliance with Universal Credit, or disability-benefits.</td>
</tr>
<tr>
<td>As Team Member</td>
<td>Contribute along different key stages of the design process and provide input throughout.</td>
<td></td>
</tr>
<tr>
<td>As Consultant</td>
<td>Provide feedback within framed third-party or indirect contributions.</td>
<td>Consultant must be able to provide (write and report on) feedback that is usable for the design team. They should be an expert in a given issue through personal lived experience, or first-hand testimonials. Developments should be up to date for both consultant and team member. Ensure the documentation is not lost, neglected, or unused.</td>
</tr>
<tr>
<td>As Test Subject</td>
<td>Review or test a design and provide feedback according to their experiences and facilitator input.</td>
<td>Users should be able to access and take part in review. Users should represent targeted audiences accurately. Facilitators caution their own biases and expectations.</td>
</tr>
<tr>
<td>As Mythical User</td>
<td>Referred to indirectly as personas or testimonials in documentation.</td>
<td>Users are represented through past stories, research, or practitioner interpretations. They may not provide a holistic understanding of a user or regress to stereotypes.</td>
</tr>
<tr>
<td>As Quantified Metric</td>
<td>Users are represented as measurements or guidelines that are sometimes out-of-date. Practitioners do not understand user issues very deeply. Users are disconnected from the process and do not take part.</td>
<td></td>
</tr>
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</table>

Table 11: Types of Involvement

The table provides descriptions and concerns to six types of user involvement. As active leaders or team members, users have a direct and often continuous role in the development process. They should be able to contribute effectively within the team, either through their own skillset, or through a facilitator. Some concerns include meeting their access requirements and understanding the implications of their compensation in compliance with disability benefits or universal credit. This is equally relevant about consultants who support the project with advice and recommendations. As test subjects, mythical users, or quantified metrics, users are not directly involved in decision-making, or take part in identifying broader concerns within a project. Their participation – or referral – is framed within the facilitators scope. Their value is defined by a facilitators ability to distil the information therein into useful design criteria that are usable and considered in the design process.

4.7.3. The Scope of a Project

Practitioners’ abilities to advocate for and navigate inclusion were also influenced by the scope of their projects. This includes the processes, procedures, and guiding design criteria.

In some cases, it was found that the scope of a project would force out inclusion. Clients and managers may enforce tight deadlines that do not allow for recruitment or user testing. As Dong et al. (2003) explained, the business case (financial viability, or timelines) is a common factor to the uptake in inclusion. It’s equally possible that inclusion is solely framed as accessibility. In these cases, fewer users and concerns are considered. P1 reported that: “the hardest sell is the idea of social, culture, ethnicity, anything protected by the equality act that isn’t a physical disability because that’s not captured in codes and can’t really be captured in data or building codes. These non-spatial requirements are what we try to advocate for; we try to think about how a space is operated”. Part of this inquiry involves a profound understanding of the governing ways of thinking at play, and guiding values held by gatekeepers. Practitioners can thus incentivise through blending their inclusive values with other key concerns. Governing ways of thinking also frame the design stages. The presence and impact of inclusion varies from one stage to another. Notably, practitioners advocate for inclusion in early involvement by presenting strong arguments informed by past experiences or examples of best practices and cautionary tales. These are attempts to embed inclusion across different design stages and within the constraints of a project. They also rely on
later design stages – near handover and once the product is in use - to assess the impact of their efforts and inform future projects.

4.8. Answering RQ3: Motivations and Mindsets

This section addresses RQ3; a focus on the motivations and mindsets (of designers, architects, planners, and other members of a design project) that impact the uptake of designing inclusively. Practitioners reported on their experiences which were clustered into three overarching themes: the business case, impressions of inclusion, and placing inclusion at the heart of their design projects. These themes are explored through the similarities and nuances between practitioners and their contexts of practice (ecologies, traditions, ...). These findings also help to form better understandings of the proposed notions later in Chapter 5 (answering RQ4), as well as some of the opportunities that cut across practices to support the uptake of designing inclusively broadly (RQ5).

4.8.1. The Business Case

Many – if not most – motivations in a design project are driven by the business case. Researchers report on several facets of the business case such as financial viability, technical feasibility, and human desirability (Valkenburg & Sluijs, 2014). Practitioners report that the viability of a project is central to its success, and a sufficient standalone deterrent to uptake. Relative to the viability of user involvement, Dong et al. (2003) pointed out that the time (hourly wages) dedicated to research about inclusion or user involvement may not fit within a project’s budget. Moreover, even with enough funds, P2 reported that tight deadlines and launch dates compromised their ability to design inclusively. Leaders in an organisation are concerned by key dates for seasonal sales, profits from a launch that fuels future endeavours, maintaining goodwill with clients by fulfilling their contracts on time, and avoiding any late penalties. These issues are particularly notable in private industry where P5 reported on the value of getting it right over getting it on time. They explained that public projects face public scrutiny; designers should accept delays rather than compromise to ensure the longevity and success of a project over many years. Although, P5 was situated in large complex permanent infrastructure whereas others like P4 (mobile app design) were quick to launch and amend in weekly updates. In this case, they iteratively rely on user feedback and comments to improve their app. Funded as a start-up, they are a small group able to react and change rather easily. Their upfront costs and concerns are less complex than other participants such as P1 (architecture and buildings) and P5 (permanent public infrastructure).

Next, the financial success of public-facing projects is often linked to attracting a broad audience. This equally coincides with some interpretations of inclusion such as accommodating the broadest
possible audience (EIDD, 2004). Yet, this can promote an exclusionary approach by – once again – neglecting the most marginalised (Hamraie, 2017). This misunderstanding foregoes a key value of designing inclusively: to design for unheard and minority voices. It’s been well reported in both theory and through practitioner testimonials that translatable benefits from one user to another, market niches, and social climates can entice stakeholders or team-members with economic growth. For instance, the flow of hotel throughways is improved for all when planners listen to the concerns of mothers with prams, busy bellhops, families with multiple suitcases, and users who rely on assistive technologies (Heylighen et al, 2017; P1). Other examples can involve unifying values that transcend demographics or abilities such as shared health and safety concerns surrounding the COVID-19 pandemic (P1). Reacting swiftly to emerging values and recognising the needs of more diverse users can set clients apart from competitors (P2). Setting a benchmark within a market segment as an inclusive building, space, or artefact can draw positive and profitable attention from potential users, clients, or investors. Inversely, business cases can be motivated by avoiding negative perceptions and subsequent reputational damage from designs that disable (PS).

Finally, despite the potential financial value, some governing practices and processes hinder inclusive designs. The development and implementation of new inclusive features may conflict with a company’s manufacturing processes or wastefully forego existing contracts with outsourced software and hardware producers. In this way, inclusive endeavours – despite their added value – are rejected due to existing or longstanding organisational decisions.

4.8.2. Impressions of Inclusion

Through exploring practitioner motivations and mindsets, it was found that the impressions or attitudes about designing inclusively from some stakeholders can significantly influence overall uptake. First, it seems that within larger and more complex projects, some contributors are naturally disconnected from inclusive strategies or concerns (Ilelegems et al., 2019). Their responsibilities have never included or considered embedding inclusive values (P2). P1 and P6 both explicitly reported on the importance of involvement during construction stages where amendments – such as installing a spare heater at the bottom of a turning ramp - could unknowingly compromise inclusion or access. These team members may not have a direct link to users or user-centred design goals. As such, teams can equally underestimate the importance of inclusion when there are few members therein who advocate within group meetings, or across different design stages. These inclusive leaders form a minority whose concerns are less relatable or shared across the group. Many participants (practitioners) in this research reported on the importance of earliest possible involvement. Embedding inclusive values with design objectives from project outset can drive overall motivations
and mindsets. Eventually, inclusion could become common place within projects – aligning with the ethos of Super Normal Design where “through their use and feel of natural familiarity, becoming iconic archetypes” (Graham & Pullin, 2019, p. 594), or “attach themselves to our everyday existence in a way that would leave us at a loss without them” (Morrison, 2015).

Van Der Linden et al. (2017) propose that many practitioners are reluctant to embed inclusion given their limited knowledge or lack of experience. Indeed, P6 reported that many clients were worried that they would offend by “doing it wrong”. Through offering a strong proof of logic, participants were able to convince clients to adopt more inclusive outlooks. They relied on real stories from users, best practices, and case studies – sometimes in the form of tiered advice to build client confidence incrementally. Yet, participants also pointed out that some gatekeepers (clients, stakeholders, fellow team members) simply refuse to consider inclusivity or marginalised groups. They hold prejudices or presumptions that continue to marginalise and would not change despite best efforts from advocates for inclusion. P1 reported on a client rejecting inclusive endeavours: The client believed that it would compromise floorplans and add costs and complexity to the design. Despite working with the clients’ architects to resolve floorplans, propose reputational benefits, and highlight a market niche, the client refused. P2 also reported on challenges, suggesting generational conflicts between younger designers, and older engineers and technicians. P2 found that working alongside their counterparts to “make the project as much ours as theirs” encouraged participation. In more difficult situations, P2 would refer to the project ethos and R&D director who insisted on advancing the project. Referring to intentions set by their shared manager (to design a more inclusive product) settled arguments – although this was used as a last resort to force team members reluctantly, rather than involve and empower them.

4.8.3. Inclusion at the Heart of a Design

Despite their prevalence, some motivations are less concerned with the business case and focus on meeting bespoke criteria that place inclusion and access at the heart of a design. As P3 expressed “this isn’t going to be quick, or about mass production, or one-size-fits-all. But also, recognition that the payback [of unique inclusive solutions] is immense!”. Participants agreed that inclusion in design has less to do with universalizing or creating repeatable processes. Designing inclusively intends to specifically target marginalised groups. Participants reported on the translatable benefits: P2 highlighted the resonance between different age groups and cognitive abilities, and P4 explained the similarities between sedentary office workers and wheelchair users. According to P5, “if it suits the disabled person, chances are it’s going to suit everybody else”. Designing bespoke and well-framed opportunities for specific access needs allows people to express themselves fully and experience
something without a constellation of concerns. Designing an experience where someone does not need to worry about certain commonplace barriers can lead to greater engagement and deeper connections between that person and the building, space, or artefact. The value of inclusion - just as its uptake - is incremental and builds on positive experiences. As P5 explained, there is a ripple effect – not only within the lives of those newly considered in a design, but across the business and organisation. It can also provide a sense of freedom and validation for users by framing clear boundaries around an experience. Sensory requirements are met, and a disabling barrier is removed. A greater sense of trust and rapport with the design often follows.

4.8.4. Participants Respective Motivations and Mindsets

Across the discussions, participants provided different recommendations or ethos that drive their own inclusive endeavours. These practitioners share in the goal of improving the uptake of designing inclusively. While there are several resonances, there are equally some nuances between their motivations and mindsets. The table below captures participants’ reflections about the business case, impressions of inclusion, and placing inclusion at the heart of a design.

Participant, and Motivations and Mindsets

1 Business Case
   We are proposing something that is not just useful now, but will have value later on.
   Impressions of Inclusion
   *The earlier the better* because we can better embed this thinking into [client] frameworks and into the dialogues and discussions and have a longer talk across the project.
   Inclusion at the Heart of a Design
   In terms of box-ticking everything was fine, but we wanted the company to think about the experience in the space for every user group. To substantiate that we relied on user experience and user feedback. Less on numbers, really the experiences that people had.

2 Business Case
   We used our research kind of like the argument. We specifically placed these things here, and that type of layout or configuration because this is the ‘ideal’ play experience and we sold them as pre-assembled modules.
   Impressions of Inclusion
   Anything brought forward was always met with resistance [...] so we had to go through a lot of back and forth and start to include them in part of the ideation process to make them think the improvements were as much theirs as ours.
   Inclusion at the Heart of a Design
   We just tried to bring forward ideas and criteria that included every type of inclusiveness. So we focused on physical (dis)abilities or disadvantages, and also cognitive ones.

3 Business Case
   You never know who is going to build their confidence or seek relaxed event access as a safe starting point or first connection with us and then go into build their confidence and desire to attend another event, join a program, attend a studio, or whatever it is.
   Impressions of Inclusion
   It’s important to have opportunities which recognize that sometimes, to create an equality of access - or your best attempt - you’re actually shaping very different opportunities.
Inclusion at the Heart of a Design
Implement a space that could recognise [those not feeling safe or comfortable with a design] and flex to their needs and presence in the same way it should for everybody.

4 Business Case
We moved to focus on inclusivity as a fitness app. When we were product driven, we worked towards gamification rather than lifestyle because we saw the gap at that point, but now people as less likely to pay as much for a game than the social aspects like right now, they will for organic growth, the social aspect is more important.

Impressions of Inclusion
We’re really aiming for one app fits all - movement for everybody, and every body. That’s the challenge I find interesting. Accessibility needs a lot of work on my end, like how we place things on the screen. Whereas inclusivity is about what’s in the copyright and the photos is how I understand it ...currently. Working with the marketing team, this is how they use it. The message they build in the app, the story of our app is marketing that built it, and I apply it everywhere and we merge our stuff together

Inclusion at the Heart of a Design
We don’t want to segment our user base because they have particular needs. We want to offer something that is useful and interesting for everyone. That’s why we’re designing with accessibility in mind, and not for each disability.

5 Business Case
All of that outside that immediate business case falls somewhere in the organization, and it does reputational damage. Those involved will have a ripple effect on their immediate friends, co-workers or family concerned about the issue.

Impressions of Inclusion
You don’t absolutely need someone (dis)abled, but at least people who know about their issues. We’ll very often find disabled people aren’t involved at the early stages. But if it suits the (dis)abled person, chances are it’s going to suit everybody else.

Inclusion at the Heart of a Design
Considerations when involving users: (i) Let Me Get there, (ii) Let Me In, (iii) Let me Participate, (iv) Listen.

6 Business Case
When designing for inclusion, you can attract clients who were otherwise booking other venues because [the chill out space] was a facility this location had that lots of venues didn’t.

Impressions of Inclusion
At every point we were looking at it from audience, performers, and staff. Relatively quickly people started talking about their own access requirements and having those conversations, people start thinking about it and applying it to their lives and to themselves and it was interesting that it opened up conversations and brought out talks that hadn’t felt as easy to have before.

Inclusion at the Heart of a Design

Table 12: Motivations and Mindsets from Each Participant
Chapter 5: Notions and Aspects Underlying Inclusive Practice

To help make sense of participant interviews and form a clearer view of inclusive practices in design, collected data was coded to identify overarching and underlying themes (proposed notions, and uncovered aspects). First, a set of preliminary notions based on the review of theory were proposed in Chapter 2. As mentioned, notions describe conceptions about the practices and enactments of inclusion in design and project development. They served as cues through data collection to learn more about practitioner experiences. As the interviews went on, more complete, adapted, or refined versions of the notions emerged. A codebook was kept throughout interviews to log the different iterations (Guest et al., 2012). Notions were open to evolutions – developing into more refined and closer representations of design practice. The following chapter will present the evolutions that each notion underwent to evidence the process and support its validity as a research contribution (McNiff, 2013; Biggs & Büchler, 2007).

Then, a second series of coding focussed more closely on concerns about the real-world practice of designing inclusively. They were first formed solely through participant testimonials rather than guided by existing literature. The coding process and subsequent clusters are presented as aspects to designing inclusively and intend to wholly represent participants’ real-world practices. Through organising these aspects into overall themes, they were found to embody three main parts of the design process: concerns within general project development, working as a team, and inclusive practices.

This section is designed to evolve findings from theory into more accurate representations of designing inclusively in current real-world practice thanks to the results collected and presented in Chapter 4. A series of notions and aspects are presented and reflected on. They begin to reveal a clearer understanding of practice. This supports a lead up into the following chapters where notions undergo further analysis, inquiry, and insights to answer RQ4 (prevalent parts of designing inclusively), and evaluations with a broader scope of practitioners to answer RQ5 (proposed opportunities for uptake).

5.1. Notions

The following section explains how the notions changed or evolved through the stories and experiences of practitioners (semi-structured interviews). Chapter 4 described the semi-structured interviews conducted with participants. Part of their purpose was to help refine and evolve the initial proposed notions formed from the theoretical framework. Chapter 3, Section 3.4.1 explained
the methodological foundations to coding, updating the qualitative codebook, and in consequence, the development of new versions and understandings of the proposed notions.

Overall, it took 5 iterations to refine the notions until they seemed to embody every part of the testimonials about practitioner experiences. The table below provides an overview of these developments across the analysis of interviews:

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<tbody>
<tr>
<td>Conducted</td>
<td>P1(1),P2(1),P3</td>
<td>P1(2)</td>
<td>P2(2),P4,P5</td>
<td>P6</td>
<td></td>
</tr>
<tr>
<td>Analysed</td>
<td>P1(1),P2(1)</td>
<td>P3</td>
<td>P1(2),P2(2),P4</td>
<td>P5,P6</td>
<td></td>
</tr>
<tr>
<td>Re-analysed</td>
<td>P1(1),P2(1)</td>
<td>P1(1),P2(1)</td>
<td></td>
<td>P1(1,2),P2(1,2),P3,P4,P5,P6</td>
<td></td>
</tr>
</tbody>
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*Table 13: Practitioner Interviews Conducted, Analysed, or Re-Analysed Under Each Version of Proposed Notions (i.e., P4 = Practitioner 4; P1(2) = Practitioner 1, Interview 2)*

The goal was to explore whether the notions derived from theory reflected practice by inquiring upon practitioners who purport to design inclusively and adapting the notions according to their real-world experiences. Through the iterations, it was found that some elements from the notions carried through, while others did not. The table below provides an overview of each notions’ evolution. The terminology evolves according to practitioner perspectives and is thus more representative of the jargon and vernacular language used in their own practice. While not all these notions will feel intuitive to everyone, it was important to increasingly reflect the language participants used in their everyday and deliver a series of notions that is more intuitive for them. The proposed notions are then revalidated with them, as well as with other practitioners at this stage, and with another series of practitioners later on in the study. This is followed by reflections on why and how the notions changed, substantiated by the data collected. A table listing the latest definitions of the notions is provided as a summary at the end.
Table 14: Changes to Notions According to Each Version

5.1.1. From Governing Mentalities to Governing Ways of Thinking

The first proposed notion of Governing Mentalities carried through the series of interviews without many significant changes. Practitioners easily described the effects of hegemonized thinking such as underlying perceptions around disability: “often the exclusion of disabled people is presented as personal bad luck or misfortune and natural - of course you’re going to be excluded because your body or mind works in a non-normative way. But [exclusion is] not natural, it’s a decision that’s being made or maintained consciously or otherwise” (P3). Through interviews with the first participants, it was found that governing mentalities were not uniquely macro-social, but could also be formed within smaller, micro social settings, such as within the project development process and meetings between team members. For instance, this includes the challenges of pushing clients beyond building codes and regulations (P1), or overcoming a reluctance to try new ideas beyond the existing offer within research and development teams.

Participant interviews not only highlighted the challenges associated with governing mentalities, but equally demonstrated how they could help the uptake of inclusion. P4 explained that their company maintained an ethos of inclusion across every step of their process. In this way, a Governing Mentality that embraced inclusion is wholly beneficial to the project – and as such in the participation of marginalized voices.

In version four, Governing Mentalities changed into Governing Ways of Thinking. While some ‘mentalities’ were significantly influential in the process, they were tightly bound to the project or
organisation. They were not inherently a reflection on macro socio-cultural phenomena, as Nieusma (2004) initially described. The term shifted to Governing Ways of Thinking; a link to design through Cross (2006, p. X) who advanced that “designerly ways of knowing involve ways of thinking and knowing that form part of the process”. The term ‘ways of thinking’ could better represent the context of the project and participants, rather than associate itself with macro-social/societal influences as described in Campbell (2000) – wherein governing mentalities are formed by widely shared values, norms, expectations, and assumptions that hegemonize society.

In version five, Governing Ways of Thinking are described as well-established mentalities that motivate people’s decisions. Specifically, they are usually norms, or standards that influence how something is conceptualised; usually guided by social, cultural, ideological, or economic values held by a dominant group, or those within a position of power. They frame how something is perceived and shape our assumptions. While they can certainly promote inclusion, they ‘traditionally’ marginalise groups outside a mainstream. They can also be referred to as status quo, normative thinking, or governing mentalities.

5.1.2. From Governing Mentalities to Proof of Logic

While Governing Mentalities (Ways of Thinking) were quite influential across the projects, they were not definitive and could be overturned. Practitioners reported that inclusion was sometimes simply not a priority at the outset of a project and clients were reluctant to design inclusively. “There was a business case for it because there was a need for these particular types of rooms in [redacted - location] so [the company] could be quite a beacon outside the status quo. But they gave us push back because ‘well we’ve always provided x% of rooms and that’s been fine so why would we change that’” (P1). Despite these established ways of thinking, practitioners could sometimes negotiate and widen the scope of inclusion. They commonly reasoned the translatable benefits from one user-type to another. For instance, wider throughways were useful to people with mobility requirements (people using a wheelchair, walking sticks, canes) as well as those walking with a child, a dog, or a suitcase (P1, P5). Improved hallways would resolve overall bottlenecks issues in parts of the space.

Other examples include the tiered advice proposed by P1 and P6. Their approaches first outlined the basic requirements and immediate needs to meet codes and regulations. Then, their subsequent tiers explained through examples, activities with users, and projecting the projects into the future to demonstrate the value of immediately designing inclusively. P2 explained how changing governing ways of thinking within the team considered improvements beyond users, and added benefits to the business case. Their inclusive ideas were blended with reduced manufacturing costs and less hassle with / for clients.
Proof of Logic was proposed in the final version (five). It existed originally within the governing ways of thinking and was difficult to disseminate. Eventually one practitioner was explaining the challenge of involving users and said: “There has to be proof of logic in involving the disabled” (P5). Once the interview with P5 was analysed, the statement ‘Proof of Logic’ seemed to embody the idea that practitioners use a rationale and build arguments that support their efforts to argue inclusion. In this way, “Logic” is understood as the principles that embody inclusion and involvement for practitioners (i.e. amplifying marginalised voices, the active involvement of marginalised users, or the consideration of a broader spectrum of actors and users that can benefit the project). Within the context of their practice, practitioners hold this “logic” and must find ways to “prove” its value to other stakeholders who may be reluctant to embed inclusion into the project, process, or practice. This includes arguments that support the added value of inclusion – such as financial value, reputational damage, or increased user appeal. By reviewing the data, it was found that practitioners often reported on a logic of inclusion and a need to demonstrate it cohesively: “[the concept] was denied for production because it wasn’t logical from a business standpoint” (P2), “It’s completely logical, but I think it’s so easily forgotten by people in power in all respects” (P6), or “It’s back to it about the short term long term, logic or not logic” (P5). The term proof of logic was considered to embody the reflections on negotiating and finding a way to overcome governing ways of thinking.

In version five, Proof of Logic is about showing how involving marginalized or inclusive perspectives can add value to specific or overall goals: to compel with reasons that demonstrate value to the design. It can also be to establish criteria with evidence and statements, or inferences deemed valid to those involved in the project. People (team-members, stakeholders, clients) and documentation (regulations, guidelines, brand standards) create different goals in a project. To advocate for inclusion, a Proof of Logic may be presented according to these goals and aim to strengthen the business case, gain a larger client base, create a more reliable product, or produce industry leading (sometimes disruptive) designs. Further review of the definition and use of the term are done through additional semi-structured interviews with practitioners and their evaluation of a proposed contribution to practice in Chapter 7.

5.1.3. Removing Marginalisation

Practitioners told stories about their lived experiences and examples of marginalisation: “Users report that a design made them feel like they were not welcomed” (P5), or “I was fighting to say this was priority” (P3). To recognise these stories, the quote “the explicit mistreatment of a person or group (often unheard or oppressed voices)” was added to the definition in version
two. Although, it was quickly found that marginalisation was not exclusively negative. Practitioners reported on not only the instances of exclusion (or marginalisation), but equally instances of inclusion (where specifically marginalised groups/people are asked to take part. This was recognised and amended in version three, leading to rename the notion “Inclusion/Exclusion”. Sections of testimony coded under the notion were often case studies or examples to support broader issues. It became clearer that marginalisation was not always prevalent, but instead presented itself as instances within the design development process. In version four, the title was again changed to “Instances of Inclusion/Exclusion”. Despite its prevalence in theory and practice, practitioners explained that these stories (coded under the notion) were used to support attempts at design inclusively. Equally, In the final review, there was a sense that practically, the instances were substantiating other notions like Proof of Logic, Governing Ways of Thinking or Project Constraints. As such, since this research is interested in the uptake of inclusion for practitioners, the notion was removed.

5.1.4. From Accessibility to User Accessibility

The first version of Accessibility addressed both project and user requirements. It was clear that this confused practitioners, and that the respective requirements were substantial enough on their own. In version 2, Accessibility was split to User and Project Accessibilities. This section will focus on User Accessibility.

People’s access requirements are central to designing inclusively, but accessibility is interpreted in many ways. Most participants explained how they broaden their outlooks on different existing and potential types of users to improve overall accessibility. Practitioners can rely on regulations like the Equality Act (2010) or Human Rights Act (1998) among others. Although, some practitioners question the value of regulations; on the one hand, they set a benchmark of legal compliance that protects the needs and interests of marginal groups (P6). On the other hand, regulations often fall out of date and cease to represent current needs and requirements (P1, P5). User accessibility is also considered through cognitive abilities such as how children with different forms of autism interact with play structures (P2). This can also intersect with physical abilities like strength or independence, and age in some cases. Physical abilities are also reported in the design of apps and their colour contrasts, or the layout of a physical space (P4). Accessibility is informed by values: Participant 1 explained a recent project with visible minorities and cycling in a city centre. Despite being able to cycle, users were foremost concerned about the relationship between automobiles and bicycles. Many explained how their own characteristics (mainly race) were also a concern, where cyclists were seen as vulnerable to racist acts from passers-by, including law enforcement. On that note,
accessibility is also interpreted as characteristics like race, gender, age, weight, and sexual orientation. Practitioners explained that designing inclusively through these characteristics was often very abstract and difficult to resolve or even understand. They pointed out the importance of recruiting people from relevant groups to share experiences and provide advice on the project. Practitioners suggested looking at the existing pool of users, speaking to the client, to local councils who may know of groups in the community, or to consult agencies that specialise in recruiting for focus groups. Overall, the initial notion (once split to solely represent user accessibility) was robust and representative of practitioner perspectives. The only amendment was a comment on engagement with governing regulations and guidelines in version two. Otherwise, testimonials provided further details into the notion that did not change its driving characteristics.

In version five, **User Accessibility** is the ability for users to interact with and understand a design. At a minimum, the design should comply with regulations to be “technically usable” (P6). Designing inclusively most often pushes beyond usability and learns from users with physical and cognitive disabilities, and from users in marginal groups or within protected characteristics (like gender, race, sexual orientation, social status, cultural views, amongst others). It is equally important to understand the complexities of their participation in the process. There is a guiding principle that impairments are caused by the designs and not by the people trying to use them.

### 5.1.5. From Accessibility to Project Constraints

As it was mentioned, ‘Accessibility’ split to address user and project requirements separately. It became easier to understand nuances in the coding once Project Accessibilities was distinct. Afterwards, there were not many notable changes to the notion. Practitioners provided deeper understandings that were complimentary to the proposed definition. Still, the title Project Accessibilities was renamed to Project constraints in version four. This way done to create a clearer line between both notions (project and user accessibilities). Practitioners more often associated ‘Accessibility’ with user than project requirements. Project Constraints were formed through the understanding that a project is bound or framed by what is accessible to the organisation, group, or project. The term ‘Constraints’ embodied this well and could be used to avoid any confusion from using the term ‘Accessibility’ in two separate notions.

Project requirements often frame what is possible in the development process. Sometimes these are influenced by regulations and building codes (P1, P2, P5). In other cases, a project is driven by specific values, objectives, or incentives. Notably, this includes costs. Sometimes, this meant that the company or client was interested in “**having to produce products that really optimized pricing**”, or “**if we have 50 good ideas, we can only develop 10 of them because we don’t have the resources and**
time to develop and test them” (P2). In other cases, companies were concerned with generating income and the losses from accessible spaces – traditionally requiring a larger footprint in the plans (P1, P5, P6).

Whilst costs were a concern, practitioners were especially constrained by timelines. Often, new ideas or proposals would come through in early ideation stages, but short deadlines coerced design teams to rely on established procedures. This was also a challenge when specific ideas did not match with manufacturing processes. One practitioner explained, “they don’t want to make it more customisable because it cost too much money each time. It takes a whole department of 7 people to modify every single time, every single detail” (P2). Project constraints were of more significant concern during negotiations with stakeholders in the early stages. Choices made in the beginning around design objectives, priorities, and timelines are imposed through the Project Constraints across the entire process.

In version five, Project Constraints are described as the imposed restrictions to a project plan; this includes budget, timeline, processes, requirements, values, and practitioner availabilities and capacities. Project Constraints help to guide a project forward and frame both its opportunities during the process, and its (estimated) outcomes.

5.1.6. From Involvement to User Involvement

Practitioners provided strategies and recommendations to justify or improve involvement. Including users in site assessments and prototyping can help to quickly validate the qualities of a design. In one case a practitioner included a user with walking sticks in the development stages: “She could get around with sticks, but nowhere to park them and issues at the reception area [...] there is no way you can argue with the person standing there in front of you showing you the problem” (P5).

Practitioners often reported to include people from marginalised groups to test a design, but some users were also involved as team-members and leaders. As a disabled director, one practitioners’ company could immediately validate a concept in-house and drive the ethos of inclusion from the top down. Some practitioners caution involving users as team members as they may not be able to communicate their ideas as designers or negotiate confidently in a development team. This can downplay the impact of involvement. Users are either involved in limited capacities where their participation is well framed, and designers are comfortable facilitating them and distilling the lived experiences into usable design ideas.

Involvement was carried throughout the research but adapted to focus on users particularly. They were considered in the first iterations, but the notion was open to other sources of involvement. Still, whilst someone could hold a role in the project, their insight always remained as a user of the
design. Additionally, some practitioners question whether the involvement of regulations and standards was considered a way to design inclusively (a mythical user, or a persona) (P2, P5, P6). For this reason, it seemed useful to specify ‘user’ to encourage a focus on their involvement in the process (jn version four).

In version five, **User involvement** is to listen to or include (the concerns of) those using a design or who are affected by it in some way. Involving users means to have their experiences, thoughts, or insights included within the design process. A user can also take part in a design project as someone who interacts with the design outcome. They may provide advice about current designs, recommend changes, advocate for, and help identify unmet needs or oversights, or test out prototypes and help make design decisions. They may also contribute as equal team members or leaders in a project pending their ability to participate, or the skills of others to facilitate.

### 5.1.7. Design Stages

Design Stages played a continued part in the discussions with practitioners. The notion was not subject to significant changes across versions. Rather, practitioners provided deeper meanings to the existing definition. They relied on different design stages to provide insight and opportunities to the uptake of designing inclusively. Practitioners assessed where inclusion is most effective, useful, used, or unnecessary across a project. They report on its value in the early stages: defining the strategy, preparing the brief, concept design, and prototyping. Users should be included “the earlier the better” (P1) to embed their views and experiences into the conversations around the brief, objectives, and design criteria. Inclusion is built into the project through early ideas and iterations. This should equally suit stakeholders. P5 pointed out that “it’s just words in a document or lines on a drawing. It doesn’t cost anything to change”. By the manufacturing and construction stages, practitioners report that advocacy for inclusion is not a concern. The inclusive features should simply unfold according to the design plans. Despite this, P6 warns that the final parts of construction are critical. Rushed to finish, a builder may see an open space to fit an additional heater. However, that space may have been a clearance at the bottom of a ramp. This example shows how open and empty spaces are sometimes easy targets to resolve oversights in the design plan. Building teams may not understand why a space is designed in a specific way and compromise accessibility unknowingly through small changes. Finally, by observing users after project launch or handover, every practitioner gained first-hand experiences or testimonials and carried these into the beginning stages of new projects and processes.

In version five, **Design Stages** are a development strategy organised into distinguishable parts, separated by milestones (significant points in development). Each stage consists of specific actions,
objectives, results, gatekeepers, and practitioners. Design stages form the design process which may differ from one organisation, team, or project to the next. Overall, practitioners agreed that despite some differences between one process and another, there are some key moments to designing inclusively. This can be setting up inclusion in the brief, validating ideas and prototypes with users, resolving unexpected issues during construction, and assessing user experiences after handover.

5.1.8. From Scale of Change to Outcomes and Impact

Practitioners talked about key moments that changed the course of a project. P6 refers to these as moment that “lever the change and help people put [inclusion] into practice straight away so it’s real”. They reiterate the importance of settling on inclusive criteria from the outset of a project (P1, P6). They quickly argued the importance of early involvement and inclusive criteria. An effective argument included ‘futureproofing’ to explain the long-term impact of decisions made today on the life cycle of a project. P5 explained that it was much more important for users to ensure a project is well designed at the outset; Companies can avoid costly or challenging retrofitting, and the reputational damage of failing to provide suitable solutions to their users.

Sometimes, clients experienced or witnessed first-hand how their products marginalise. Their initial reluctance for inclusion eroded. Despite their uncertainty in the outcomes of an inclusive approach, clients were willing and motivated to become exemplars in their market segment. Other times, despite well-articulated proposals, clients were dismissive. One practitioner reported on feeling so deflated, they no longer saw value in the project and resigned. Sometimes, a small change – like the heater installed by the ramp – could considerably impact the inclusive qualities of a design.

Scale of Change was well understood by practitioners, but they reported on its value especially at the end of a project. During the coding process questions were raised in the codebook that suggested a need to redefine the title. Sometimes it was difficult to code how the scale of change was processed or assessed. Specifically, some inclusive practices may seem to play a significant part in the project, but impact is only understood through the outcome. To better represent these realities within the final version, the notion shifted from ‘Scale of Change’ to ‘Outcomes and Impact’.

In version five, Outcomes and Impact are (Outcome) the consequence of decisions made during the design project and (Impact) the after-effects of those decisions to the final design and future projects. They are the end results of a process submitted for handover and ready for use. Key
moments during the project may present themselves and have significant impact: from small oversights to innovative proposals.

5.1.9. Removing Fairness

Conversations about fairness and equity were common, although subverted. Some practitioners provide data to help clients think about marginalisation in percentages, or challenge clients about the value of someone’s wellbeing or life (in the case of safety concerns around a design). Most practitioners challenged universal solutions for all. They recommended either first designing for the least able and expanding on the product from that point or finding creative solutions that provide users with different experiences of equal quality.

Despite its relevance, fairness was not overtly discussed. Rather, it was embedded in the arguments, negotiations, and proofs of logic. Fairness was addressed through:

(i) Advocating through “provided data from the census to help them think in percentages” (P1);
(ii) User involvement, “making sure that the voices we hear are not the ones we always hear” (P1);
(iii) Finding a “middle ground where we can still develop everything that’s technical and optimised for the client but at the same time trying to ensure that the user experiences bring forward the best quality of play” (P2);
(iv) “Making it accessible for everyone” (P4);
(v) Challenging “the institutional attitude of ‘don’t ignore me because I’m in a wheelchair” (P5).

Whilst fairness clearly plays a part in the uptake of designing inclusively, its practical application was blended with various factors within other notions. As such, while fairness is relevant to inclusion, it is intrinsic and contributes within other notions, rather than forming its own. In version five, the notion was removed and the coded sections were redistributed to other notions as a way to further define and characterise them.

5.1.10. Notions, Version 5

Following the developments and discoveries through coding the transcripts, a fifth version of the notions is proposed. These do not assume to be the final version and instead represent the outcomes of advancing the proposed theoretical notions through discussions with practitioners. In the following chapters, the notions are further analysed and adapted.

At this stage, criteria for scoping review processes have been met by gaining academic and practical perspectives on the proposed notions – or evaluating with experts (through the DIS conference workshop, and discussions with practitioners) (Arksey & O’Malley, 2005). The table below summarizes the past section and presents the most recent understandings of notions.
**Governing Ways of Thinking**

Well-established mentalities that motivate people’s decisions. Usually, norms or standards that influence how something is conceptualised; guided by social, cultural, ideological, or economic values held by a dominant group. They frame how something is perceived and shape our assumptions. While they can certainly promote inclusion, they ‘traditionally’ marginalise groups outside a mainstream. Also referred to as status quo, normative thinking, or governing mentalities.

**Proof of Logic**

Explaining how marginalised perspectives can add value to specific or overall goals: to compel with reasons that demonstrate value to the design. To establish criteria with evidence and statements, or inferences deemed valid to those involved in the project. People (team-members, stakeholders, clients) and documentation (regulations, guidelines, standards) create different goals in a project. Proof of Logic is often presented through design goals to strengthen the business case, gain a larger client base, create a more reliable product, or produce industry leading (sometimes disruptive) designs.

**User Accessibility**

The ability for users to interact with and understand a design. Designs should at least comply with regulations to be technically usable but designing inclusively most often pushes beyond usability and learns directly from users. There is particular attention to physical and cognitive (dis)abilities, and those within marginal groups or protected characteristics (like gender, race, sexual orientation, social status, etc…). It is important to meet access requirements for their effective participation; There is a guiding principle that barriers are caused by the designs and not by those trying to use them.

**Project Constraints**

The imposed restrictions to a project plan including budget, timeline, processes, requirements, values, and practitioner availabilities and capacities. They help guide a project forward and frame both its opportunities during the process, and its (estimated) outcomes.

**User Involvement**

To listen to or include (the concerns of) those using or affected by a design and implement their experiences, thoughts, or insights into the process. Users can also take part in a project to test outcomes. They may provide advice about current designs, recommend changes, advocate for, and help identify unmet needs or oversights, or test out prototypes and help make design decisions. They may also contribute as equal team members or leaders in a project pending their ability to participate, or the skills of others to facilitate.

**Design Stages**

A development strategy organised into distinguishable parts, separated by milestones (significant points in development). Each stage consists of specific actions, objectives, results, gatekeepers, and practitioners. Design stages form the design process which may differ from one organisation, team, or project to the next. Despite some differences between one process and another, there are key moments to designing inclusively: setting up inclusion in the brief, validating ideas and prototypes with users, resolving unexpected issues during construction, and assessing user experiences after handover.

**Outcomes and Impact**

(Outcome) the consequence of decisions made during the design project and (Impact) the after-effects of those decisions to the final design. They are the end results of a process submitted for handover and ready for use. Key moments during the project may present themselves and have significant impact: from small oversights to innovative proposals.

*Table 15: Overview of final iterations and understandings of each notion.*
5.1.11. Reflections

Although the terminology used to describe the notions adapted through different iterations, some overarching themes carried throughout discussions. This includes the effect of Governing Ways of Thinking, Accessibility for different users, the impact of Project Constraints, involving those most often marginalised by a design, the development strategies that form the Design Stages, and the Outcomes and Impact of (inclusive) decisions made throughout the process. In two cases, the gap between theory and practice was significant enough to remove the notion altogether. Although these notions were cited and explored in theory and practice, they did not present significant enough value as standalone notions, but rather as supports to others. For example, in the case of ‘Instances of Exclusions / Inclusion’, Holmes (2018) explains that many objects in our everyday – such as adjustable seating (office chairs, cars, bicycles) respond to body type exclusions. Creating an adjustable design considers a wider range of users and directly supports a Proof of Logic, can improve the Outcomes and Impact of a design, or demonstrate the consequences of a Governing Mentality (average height or sitting style). Similarly, participants explained that Instances of Exclusion (ex: buildings that do not offer step free access) and Inclusion (ex: improved reputation from high inclusive and access standards) can help justify a need for more inclusive practices. In this way, these instances are useful to the research, but serve to support other notions. Similarly, practitioners engaged well with Fairness (also described as equity). Some participants used the concept of equity to justify design decisions with clients, while others explained the consequences of an unfair design – creating additional barriers for specific users. However, these issues also supported a Proof of Logic, the concerns within Governing Ways of Thinking, or the issues across User Accessibility and Involvement. Perhaps researchers in a theoretical context can more readily engage with fairness without the complex network of real people, conflicting ways of thinking, project constraints, and intricacies around involvement. Kelly (2018) theorises about the ethical dilemmas within fairness in inclusion, but these ideas may not fit within the framework of a design process that insists upon clear decision making and an outcome. Active practitioners are perhaps more reluctant to overtly draw lines around and negotiate what is fair, or not.

Although this research achieved further insight into notions that more closely represent current inclusive practices, there are limitations to this study – namely the sample size, participant profiles, and selection criteria. Initially, 30 organisations were identified, but due to lack of availability, or concerns about breaching or damaging client relationships (despite Ethics Committee declarations on anonymity), only 6 took part. Still, as an exploratory project, a smaller group of participants allowed for a more thorough analysis of findings within the timeframe. Yet, there is no expectation that a different researcher conducting the semi-structured interviews, or different practitioners
would yield the same results (Zimmerman et al., 2007). Second, participants provided ‘western’ perspectives to designing inclusively (Canada and the UK), although equally reported on projects with clients internationally (Europe, Asia, and Americas). Third, as this research was interested in learning from inclusive practices, the selection criteria focussed on those with a clear intent to advocate for marginalised groups. Perspectives from those who do not explicitly design inclusively could provide further insight into barriers. Yet, participants did explain these perspectives through their experiences with reluctant clients, stakeholders, and team members. Finally, the selection criteria equally focused on public spaces, buildings, services, and designs. This excludes bespoke products or private residential projects. Participants did however report on the value of unique solutions which could provide translatable benefits that support the uptake of designing inclusively. The purpose of this research is not to use the notions to help form a single definition of designing inclusively. Rather, they serve as landmarks within the theoretical landscape that can help make more sense of key elements identified by fellow practitioners.

5.2. Aspects (Underlying Themes)

The previous section explained how semi-structured interviews refined the proposed notions distilled from the theoretical framework into a version that more closely reflects real-world practice. Throughout the process of analysis, it seemed that underlying themes emerged across these notions. The following section explores this further. Unlike the notions, these underlying themes – or aspects - are wholly representative of the content from testimonials and are considered emerging codes (Creswell & Creswell, 2018). Although, to help manage data, excerpts from testimonials were organised according to their corresponding notion. There was an initial assumption that the aspects could be organised according to each notion. However, they seemed to reach across notions. For example, the aspect Middle Ground (Compromising, or finding opportunity between different views) could relate to the notions User Involvement, Governing Ways of Thinking, and Project Constraints to highlight negotiations between stakeholders. Instead, other formats were explored and attempted to find a better suited way of grouping the aspects.

A first attempt was influenced by similar research which organised themes into enablers or barriers (see Dong et al., 2004; Kleinsmann & Valkenburg, 2008; Driver et al., 2010; Goodall, 2020). This research would thus present enablers and barriers to the uptake of designing inclusively – illustrated below (see Annex 3 for full table):
These groups were mostly satisfactory, but further divisions were required. Some barriers seemed specific to designing inclusively, whilst others, although influencing uptake, were independent to the practice and seemed to apply to any design development project (for example, a project’s Existing Practices and Processes). In addition, the importance and complexities of user involvement seemed to warrant its own category – as neither an enabler nor barrier, but intrinsic part of designing inclusively. After revisions, the table was evaluated by fellow academics as part of a peer review process for journal publication. They reported that some themes / aspects could shift from one column to another, merge together, or classify differently. This motivated a review of the groupings.

A second and final format was created and accepted by the journal editors and peer reviewers. In this final version of groupings, instead of organising aspects as barriers and enablers, they were grouped under three categories: project development, working as a team and designing inclusively. During interviews, participants reported that the uptake of designing inclusively was influenced by the context of the project. This includes the conditions of the development process (time, resources, budget, ...) as well as team dynamics (including the interactions between reluctant team members, developing rapport with stakeholders, facilitating users, or negotiating designs with clients, ...).

These observations further recognise that designing inclusively functions within the overall process and is affected by the people involved. Indeed, this echoes the view that design is a social process, characterised by the procedures of project development, the influences of working as a team, and
the impact of individual practices and outlooks (or *object worlds*) (Bucciarelli, 1994). Whilst groupings seem suitable, the lines between each are still sometimes blurred. As such the diagram below illustrates some of the leeway that this research allows to the overlap between groups:

![Diagram](image)

*Figure 12: Grouping the aspects*

A full overview of the themes and their supporting descriptions and statements is provided in Annex 3. In total 24 clusters were formed. The table below presents the aspects within each of the three groupings, followed by an explanation of each.

<table>
<thead>
<tr>
<th>Project Development</th>
<th>Working as a Team</th>
<th>Designing Inclusively</th>
</tr>
</thead>
<tbody>
<tr>
<td>Available Money and Time</td>
<td>Stakeholder Dynamics</td>
<td>Actioning Change</td>
</tr>
<tr>
<td>Existing Practices and Processes</td>
<td>Gatekeepers</td>
<td>Logic of Involvement: <em>(Reputational Damage, Benchmarking, Universalism vs. Bespoke, Transferability)</em></td>
</tr>
<tr>
<td>Optimizing</td>
<td>Institutionalizations</td>
<td>Presumptions and Disability Prejudice</td>
</tr>
<tr>
<td>Regulations and Guidelines</td>
<td>Middle Ground</td>
<td>Maintenance</td>
</tr>
<tr>
<td>Retrofitting</td>
<td>Cultural Contexts</td>
<td>Earliest Involvement</td>
</tr>
<tr>
<td>Scaling Up</td>
<td></td>
<td>Recruitment</td>
</tr>
<tr>
<td>Global and Local Context</td>
<td></td>
<td>Participation</td>
</tr>
</tbody>
</table>

*Table 16: Proposed Aspects to Designing Inclusively from Practitioner Perspectives*
5.2.1.  **Project Development**

Despite an inclusive intent, design projects often follow a specific framework that resonates across many development processes. Through the discussions with practitioners, seven aspects about general project development emerged. They were seen to play a role in the outcomes of projects but do not seem inherent to advocating for inclusion specifically. These include:

- **Available Money and Time**
  - Money and time significantly influence and control what is possible in a project. Although, they are not mutually exclusive since projects require enough time and money respectively to develop solutions. Usually, timelines control how money can be spent, and money can influence effective use of time, as well as available resources.

- **Existing Practices & Processes**
  - Investments made into current procedures, pipelines, manufacturing methods, or contracts influence what practices and processes a company is more willing to take on in a project.

- **Optimizing**
  - Often associated with streamlining or improving production, assembly, or user experiences. Usually linked to profit or other quantifiable indicators (time to production, cost of materials).

- **Regulations and Guidelines**
  - Companies must adhere to regulations, or risk legal consequences. While regulations have legal accountability, guidelines are not legally binding (can be seen as a suggestion). Regulations and guidelines are seen as valuable indicators or references for project requirements, but also criticized as (out)dated – failing to represent current needs. Some elements of the Equality Act (such as race or sexual orientation) are sometimes difficult to distil into design requirements.

- **Retrofitting**
  - Revising a finalized or existing design and resolving issues bound by the surrounding infrastructure. Often more expensive than resolving problems at the outset of a new project, or at least before manufacturing and construction. Difficulties emerge around accessing the site and making changes given that the building, space, or artefact is already launched / in use (especially public infrastructure).

- **Scaling Up**
  - Moving into a larger market or growing own market and coping with the demands from production, maintenance, user queries and diversifying needs (ex: environmental or business sustainability).

- **Global and Local Context**
5.2.2. Working as a Team

When design is a social process, the interactions between different team members and other stakeholders influence the outcomes of a project. Each person holds different framings, understandings, interpretations, and values that motivate their actions as they work towards the design goal (Bucciarelli, 1994). As participants reported, this can include dynamics between practitioner and clients (P1), between members of a same design team (designers and engineers (P2)), or between users and others in the team (P5, P6). The interactions between team members and their development of shared understandings (to effectively work together) is already well reported (Kleinsmann et al., 2007; Lamirande, 2020). In complement, the interviews revealed aspects of working as a team that influence uptake and the ability to design inclusively.

- **Stakeholder Dynamics**
  - Relationships between stakeholders are influenced by (i) respective roles and responsibilities (and attitudes therein), (ii) whoever is central to the project, (iii) gatekeepers (see below), (iv) the contrasts between client, designer, and user priorities, and (v) trust.

- **Gatekeepers**
  - Individuals within teams or on-site who decide how and whether an idea is carried forward. Looking into the effects of ‘who is in charge or has final say’, and ‘who are those along a design process needed to advance the project’. Understanding their roles, and priorities to align inclusive endeavours with their interests.

- **Institutionalizations**
  - Deeply embedded ways of thinking with often systematic effect. Institutionalized values, design methods, processes, structures.

- **Middle ground**
  - Compromising, or finding opportunity between different views. Often influenced by the weighting of specific values over others. Rarely equidistant (true ‘middle’ point) between two different views. Despite efforts, changes are often incremental; subtly moving away from marginalizing designs to more inclusive ones.

- **Cultural Contexts**
  - Conditions or frames formed by cultural practices / backgrounds. Different team members may hold different company, institutional, or interpersonal values based on their experiences, and interact with others (or with the project) differently.
5.2.3. Designing Inclusively

Through the discussions with practitioners, there were aspects beyond the scope of general project development and team dynamics that seemed specific to advocating for and instilling inclusion. The following aspects outline some of the general motivations, principles, drivers, and obstacles to designing inclusively. Through data clustering it seemed relevant to highlight overall aspects, then those specific to the active involvement of (marginalized) users within project development processes respectively.

- Actioning Change
  - The effort and motivation to initiate and mobilize changes. Inclusion rarely happens without instigation or the efforts of someone in a team to introduce, advocate, and drive it. Sometimes organizations will hire or create the role of ‘champion’. Championing involves one or many experts, team members, or consultants with promising experiences in inclusion who present gatekeepers with a strong ‘logic of involvement’ (see below). Actioning change is often aided by a strong overarching ethos: a guiding principle across a company, group, or stakeholders.

- Logic of Involvement
  - Providing a proof of logic to designing inclusively by arguing through one (or many) of the aspects below:
    - Reputational Damage
      - A ripple effect from marginalizing designs to the detriment of a company involved in its creation, use, or sale. By neglecting to design safety or access requirements, or a sense of belonging for diverse types of users, a company may build a negative reputation. By excluding specific users, a company may lose the support of marginalized groups, as well as those within their target audience who align with values of inclusion and are open or attuned to diversity.
    - Benchmarking
      - To hold the best practices / standards in a given industry. To stand out from other designs/offers by leading in inclusion and accessibility.
    - Universalism or Bespoke
      - Tensions between the beliefs that solutions are bespoke and framed, or solutions should be suitable for all. A design tailored or framed to fewer mainstream needs or requirements is sometimes difficult to monetize or scale up, although a product that attempts to accommodate every human condition and preference is impossible.
    - Transferability
The conditions of one user can translate to satisfy the needs of others and broaden the scope of targeted users. Some experiences or needs – such as safety – can transcend human differences. Some practitioners propose that designing from the worst-case scenario can often suit more people than designing for the most capable, or ‘average’ user.

Thinking about how processes developed from an inclusive project can apply and benefit other projects. Looking at how inclusive principles can easily transfer into other processes.

- Presumptions and Disability prejudice
  - Automatic frames of reference that are problematic when trying to involve or design for marginalized groups. Team members or stakeholders sometimes hold perceptions of people with (dis)abilities that undermine their capabilities, omit them from design criteria, or neglect and marginalize them. Presumptions hold automatic, and often undisclosed frames of reference that hinder the design or involvement of marginalized groups.

- Maintenance
  - Accessibility and Inclusion are often seen as an achieved goal or checklist that concludes with the end of a project or at handover. Rather, they should be seen the same as maintenance or cleaning; a continued process that is upheld and assessed continually throughout the life of a building, space, service, or product.

- Earliest Involvement
  - Throughout the research, the idea of active involvement and participation from (marginalized) users has been highlighted as central to designing more inclusively. Earlier discussions with users or their involvement allows for more time to frame inclusive values with clients and embed user insight into objectives. This is more challenging when deadlines are very short, or projects are already behind schedule / are late.

- Recruitment
  - If uncertain how to find users, seek recommendations from existing advocacy groups, local councils, the client/stakeholders themselves, or draft clear criteria for recruitment agencies.
  - Broaden the scope of users to include input from those who interact with a design such as staff members, distributors, maintenance teams, or passers-by.
  - Different information and possible biases can emerge from including ‘critical friends’ versus ‘strangers’.
  - Consider who are identified as ‘suitable people’; while the unheard voices are more difficult to find than the ‘loudest’, learning from these different attitudes can provide more and deeper insights.
• Recruiting marginalized users is not always straightforward. They may be reluctant to share their experiences or discuss what has positioned them as ‘oppressed’. Some groups are more reluctant than others, especially when the designer is seen as part of the mainstream / oppressive group.

• Participation

  o Consider different levels of participation: users as test subjects, as team members, as designers, or as project leaders:
    ▪ As test subjects, users are valuable in testing and prototyping a design since they can show you directly how a design complies with their access requirements.
    ▪ As team members, users can contribute along different key stages of the design process and provide input throughout.
    ▪ As project leaders, users can guide a project and drive an ethos of inclusion, perceiving every aspect of the project through their own access requirements.
  
  o Consider the challenges of communicating and participating with others; a user may be an expert of their lived experience, but not necessarily an expert in communicating and working within a design team. Equally, consider the expertise and responsibility of team members to enable, facilitate, or command a decision at the behest of users.
  
  o Users lose their motivation to participate when their contributions go unheard, or do not seem to play a part in decisions made during development processes.
  
  o Users are sometimes at the intersection of different groups that fall both within and outside of mainstream, or beyond the initial inclusive scope of a project.
  
  o The feeling of being safe is highly valued & desired by users. This can include both the design of a physical space or object, and their personal safety during interactions with others (within their everyday, or within their participation in the project).

• Compensation

  o Concerns emerge when thinking about how to compensate user participation. Consider how they are compensated as equal members of a team (or not), compensation in conjunction with universal or disability credits, and compensation according to research ethics (especially in academic projects).

5.2.4. Reflections

This study was designed to try and identify cross-cutting aspects – or underlying themes – that emerged from the discussions with practitioners. Aside from the proposed notions which focused on bridging theory and practice, these aspects intended to better reflect underlying themes that emerge independently within practitioner testimonials about real-world projects. The aspects represent thematic clusters about designing inclusively, but equally highlighted the broader effects
of team dynamics and project development. This continues to demonstrate that design is a social process (Bucciarelli, 1994). To make sense of these interactions, the aspects underwent several iterations including feedback from three reviewers as part of their publication process into Architecture Journal’s Special Edition about participation in design (Lamirande, 2022). Ultimately, the aspects are presented under three categories: project development, working as a team, and designing inclusively. These three categories suggest that the notions – or at least different parts of them – do not exclusively apply to inclusive practice but also relate to parts of overall design development (such as money, manufacturing, or time constraints), and team dynamics (including outlooks, priorities, and availabilities). Thus, these aspects provide further understanding about the actions of designing inclusively both as its own practice, and within the broader scope of multi-stakeholder project development.

This analysis identified key themes by combing through statements that helped to form each proposed notion (Annex 3). Through coding within each, several themes overlapped and resonated across respective boundaries. For instance, the aspect Ripple Effect could apply across several notions, such as direct Outcomes and Impact, to support a Proof of Logic, and as an influence on Governing Ways of Thinking. It suggests a clear level of interconnection and relationship between notions. This leads to purport that the success of designing inclusively is not a standalone or independent practice. Rather, it is an interaction with the overall design process and intricacies of working with others (team members, clients, stakeholders, users, …). As this research nears closer to practical applications of designing inclusively, the following chapter will look more closely into these interconnections and relationships through further inquiries that analyse, validate, and interpret findings.
Chapter 6: Further Analysis, Inquiry, and Insights

This chapter of results and analyses will present two further analyses and inquiries that helped better interpret, validate, or understand the collected data. They are considered as “further” since they were not anticipated in the initial research design. Their outcomes, methodology, and framework were open to discovery and development. They correspond to different techniques to model the data and include further discussions with some of the participants from initial semi-structured interviews. They follow from the previous chapter to continue to understand the proposed notions. Specifically, they help reflect on the accuracy and impact of notions and their prevalence along the design process. Findings also report on the relationships between notions, and motivations and mindsets that affect the uptake of designing inclusively. At the end of this chapter, RQ4 is answered:

RQ4: Which parts of designing inclusively are (most) prevalent in project development and in the negotiations and trade-offs within the project?

The first is an analysis that explores how the final notions interact with a model of Open Innovation (Valkenburg & Sluijs., 2012). It is used to identify practical enablers and barriers to designing inclusively according to each notion. This chapter will explain the relevance of Open Innovation and present findings and interpretations alongside a reminder of the diagramming conventions explained in Section 3.5.1.

The second is an inquiry designed to explore the prevalence of each notion along project development processes. A table was created where participants indicated the impact of a notion along each stage of the process. Participants cocreated this inquiry by providing their own processes. This helped to both understand their ways of working and draw comparisons between practices. The tables served as cues to help direct further conversations about the notions; how they manifest, their accuracy, relevance, and impact. Details about sampling, findings, and future research are provided.

6.1. Notions through a Model of Open Innovation

The purpose of this study is to gain another perspective to the data through an established understanding and configuration of design practice. As this research moves further into its application in practice, an understanding of inclusion in project development processes is required. In this section, a justification and analysis of the proposed notions according to a Model of Open Innovation is provided.
First, there are significant alignments between Open Innovation and Designing Inclusively – explained below. This bridge is used in the present study to extend from inclusion and through innovation to reach the building blocks that matter in real-world design practice and project development processes. Open Innovation sits closer into the real-world concerns of practice and balances human desirability against other key values like financial viability, and technological feasibility. These three values – although recognised in this research (implied within the proposed notions and aspects) - are made explicit through the proposed Building Blocks of Open Innovation (see a copy of Figure 9 from Section 3.5.1. below for details).

For Reference Only, Identical to Figure 9: Transformed Model of Open Innovation

As a practitioner, I (the researcher) have used this transformed model of Open Innovation in real-world projects. The model is enticing as its content and format are easy to understand but can equally handle and provide insight on complex dynamics within a project. The building blocks intersect suggesting a level of interaction between them. This means that elements of the design process and negotiations can simply impact a single block or suggest greater complexity by interacting across multiple. It has helped map the different priorities at play within a multidisciplinary team of engineers and designers and the tensions or resonances between priorities. This suggests that the model - unlike others that may relate to a single way of working – is flexible enough to translate across different disciplines, perspectives, and individual perceptions. The mapping has provided an overview of the main concerns at different stages in the project. There is a level of comfort with the model in both practice as well as research since the model was used in past projects such as a case study in 2017 (Lamirande & Zahedi, 2018), and in part of the documentation from a Research-through-Design M.Sc.A. in 2019 (Lamirande, 2020). These experiences – as well as a
project translating *The World of the Open Innovator* (Valkenburg & Sluijs, 2012) to French – demonstrate a deep understanding of the model and its potential to bridge theory and practice.

While other models or frameworks could have been proposed for this analysis, the building blocks of Open Innovation are also particularly compatible. First, the blocks are forged in research about team dynamics, project negotiations, enablers and barriers to reflective practice, and discussions around shared aspects such as time, budget, participation, setting objectives and fostering change in design processes to satisfy user needs (See Kleinsmann & Valkenburg, 2008). These aspects were equally identified when coding for underlying themes in Chapter 5 (Section 5.2). Strong links between innovation and inclusion can be identified in the authors’ work:

The World of the Open Innovator was written in response to an ever and quickly changing landscape of design practice. Today, it is well accepted that designing involves a complex web of technological, financial, and human innovation. As Valkenburg & Sluijs (2012, p. 5) outline:

Linked to the transformation of society, the field of innovation is going through major changes. This transformation creates new opportunities and roles for innovators. The open innovator is at the heart of this change; riding its waves. The end of the journey is not clearly set yet. We are on an expedition and along the way we are exploring its possibilities and meaning.

Open Innovation is a reactive and reflective process to understand and respond to change. Significant resonances between the ethos of Open Innovation and Inclusion are sensed. For instance, Holmes (2018, p. 81) defines that in innovation:

it’s common for teams to focus solely on the functional elements of design. It’s equally important to understand the emotional considerations of a design, in particular the familiarity people have already developed with an existing solution. What are their patterns of using a solution? What makes these patterns important to their lives?

Just as open innovation – “wherein the end journey is not clearly set” (Valkenburg & Sluijs, 2012, p. 5) – Holmes suggests that advancements in inclusion and the patterns that guide practitioners are unclear. Luck (2018, p. 100) also mentioned that “there is no boilerplate design solution [...] that can be cut-and-paste from one situation to the next”. In the model, Valkenburg & Sluijs explain that there is no clear understanding of how practitioners ride the waves of uncertainty in a project to achieve inclusive solutions.

Valkenburg and Sluijs (2012) also highlight the importance and effect of transformative behaviours within Open Innovation. Campbell (2000) likewise boasts the importance of transforming entrenched patterns as intrinsic to the development of more inclusive practices and thinking. These transformative behaviours were also identified in Chapter 5; aspects such as actioning change, critically examining governing ways of thinking, and reacting to current real-world contexts and experiences of people (users, potential users).
Indeed, Open Innovation also recognises and embraces the value of more participatory networks as drivers for innovation: “There is a transition in innovation towards participating in networks that transcend existing boundaries of existing organisations” (Valkenburg & Sluijs, 2012, p. 18). They also report on the importance of benefitting all those who participate as well as the role of the practitioner as a bridge between users and other stakeholders. They provide 5 case studies that all connect deeply with issues that matter to practitioners interested in inclusion and its uptake. Their examples relate to improved connectivity, communication, and appreciation of unheard or marginalised voices through innovative solutions. These are well reported parts of the process to designing inclusively (see Sanoff, 2010; Steinfeld & Masel, 2012; Ielegems et al., 2019).

### 6.1.1. Results

The building blocks of Open Innovation were reworked to function as a framework to analyse the semi-structured interviews and identify key enablers and barriers within each notion. This examination helped better understand the motivations and mindsets behind design decisions and explore how the notions manifest within a framework of design practice. The following section will briefly present the diagramming conventions again (from Section 3.5.1.), the results from data analysis, and some reflections and findings about the relationship between notions and current design practice.

<table>
<thead>
<tr>
<th>Governing Ways of Working</th>
<th>Enablers</th>
<th>Barriers</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Viability</td>
<td>Feasibility</td>
<td>Viability</td>
</tr>
<tr>
<td></td>
<td>Desirability</td>
<td></td>
<td>Desirability</td>
</tr>
</tbody>
</table>

*For Reference Only, Identical to Table 8: Excerpt of the Analysis of Notions through a Model of Open Innovation*

First, the notion is presented with two diagrams. The first (with orange highlighted sections) represents the results from analysing transcripts related to “Governing Ways of Working” for enablers to the uptake of inclusion. This means that sections in orange were found to play an enabling part in uptake. Sections in white (or without any colour) were not identified through the analysis. The second model does the same for the hindrances, or barriers, to the uptake of inclusion.
and are highlighted in blue instead of orange. Thus, in the example above, viability (on its own) was found to not play an enabling part but did act as a barrier to uptake. In some cases, a section of the model is identified as both an enabler and barrier to uptake. Together, these models provide a compilation of instances where a building block can be both an enabler in one example, and a barrier in another. Thus, the table below presents the outcomes of the analysis for each notion and provides a few compelling supporting examples of enablers and barriers (directly quoted from transcripts). The spread of evidence for each entry in the table is provided in Annex 4.

<table>
<thead>
<tr>
<th>Notion</th>
<th>Enablers</th>
<th>Barriers</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Governing Ways of Thinking</td>
<td>Viability Feasibility</td>
<td>Viability Feasibility</td>
<td><strong>Enabler:</strong> Costs that aren’t in the case, hospital costs of the injured person, trauma of staff, counselling costs. All of that outside the immediate business case. It does reputational damage. Then those involved will have a ripple effect on their immediate friends, co-workers or family concerned about the issue. (P5) <strong>Barrier:</strong> Business models, seem to be primarily about making money. It seems to make the most money, you have to act swiftly and in very uniform ways and I don’t think either of those things suit humans or human life or the development of people. (P3)</td>
</tr>
<tr>
<td>Proof of Logic</td>
<td>Enabler: We noticed there was a gap in fitness apps in how visuals and audios don’t promote accessibility. We want to go and target that section of the market. (P4) <strong>Barrier:</strong> Sales drive everything. Usually, the requests come from sales for a new product to be developed. It’s never bottom up, usually the opposite. (P2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>User Accessibility</td>
<td>Enabler: So, the services that we are providing, there’s more consideration than just the physical, but also feeling confident and safe in a space. (P1) <strong>Barrier:</strong> But the company gave us push back because ‘well we’ve always provided X% of rooms and that’s been fine so why would we change that’. (P1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Project Constraints</td>
<td>Enabler: Although we spent more time developing the inclusive play structures and setting things in place, at the end, we projected that it would cost us less because we would need less people to deal with it after. (P2) <strong>Barrier:</strong> Let’s say if we had 50 great ideas, we can only develop 10 of them because we don’t have the resources and time to develop and test them all. (P2)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| User Involvement        | Enabler: When looking at plans with them would be to get them to ask and think about the space in use with different bodies and minds. Can two wheelchair users make a cup of tea in the kitchen and go and sit and have a meeting? That means that you have to take that route. Can someone with a guidance dog open this door and get in this place? (P6) **Barrier:** To the company, it’s not important to include users because the user isn’t buying the product, it’s the client. So, user needs automatically become secondary.
to how much it costs, or how easy is it to install or maintain. (P2)

**Design Stages**

*Enabler:* In good cases we would like to be at starting stages, the very beginning of a project. Big concept stuff like the orientation of building, spaces, limitations, heights. (P1)

*Barrier:* The only way we could get the idea through was by highlighting a niche in the market, then quickly whipping up inclusive personas that could be considered before the project even began. (P2)

**Outcomes and Impact**

*Enabler:* We consistently have offers which very certainly and confidently say ‘these are the fixed conditions and certainties’. (P3)

*Barrier:* We want to build up the product but we need to do so slowly. The designers need time (and salaries) to transfer the algorithms from one platform to another before we can offer to other users. (P4)

---

**Table 17: Analysis of Notions through Model of Open Innovation**

### 6.1.3. Reflections

After organising testimonials from each notion into the spheres of Open Innovation, some reflections are made. They are presented under two themes – shared models, and general observations.

**Shared Models**

Although each diagram is formed of different excerpts from the testimonials and underlying motivations (enablers or barriers), some models are identical. Below are observations, comparisons, and reflections on the similarities between them.

<table>
<thead>
<tr>
<th>Viability</th>
<th>Feasibility</th>
<th>Desirability</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Enabler:</strong> Governing Ways of Thinking</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Enabler:</strong> Project Constraints</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Enabler:</strong> Outcomes and Impact</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Given that each highlighted section intersects two or more spheres, the diagram suggests that enabling more inclusive *ways of thinking, constraints,* and *outcomes and impact* should address more than one sphere at any time.

A resonance between the *governing ways of thinking and project constraints* is realistic since they both govern or hegemonize the process; They are, in a way, the foundation of the project framework and interactions between its members. Given their driving impact across the project, it can be easy to understand the link between them and the *outcomes and impact.* This can suggest a relationship between them. Together, they address the entire process – from outset, to development, to outcome.
Viability
Feasibility
Desirability

**Barrier:** Project Constraints

**Barrier:** Outcomes and Impact

The diagram suggests that viability, feasibility, or a combination of both hinder the development of inclusive practices within *project constraints* and *outcomes and impact*. Indeed, many reported on the challenges associated with budget, timelines, and production processes – intrinsic parts of the project framework and its possible impact.

Interestingly, *project constraints* and *outcomes and impact* have identical models for both their enablers and barriers to uptake. This further supports a strong relationship between them.

Viability
Feasibility
Desirability

**Barrier:** Proof of Logic

**Barrier:** Design Stages

Viability and feasibility appear as barriers to the notions *proof of logic* and *design stages*. Equally, desirability (or human values) can hinder, but at the intersections with other spheres. This suggests that barriers to desirability are only presented/present when paired with content from other spheres. In this way, the diagram can suggest that clients/team members can hinder an inclusive approach to the *design stages*, or an inclusive *proof of logic* if the technology is not available (feasible), or profits and turnover do not improve. Hindrances can equally emerge from human values, but not as a standalone argument, unlike other spheres.

These barriers highlight the importance of working alongside key values - such as viability. This suggests overlap between their vested interests. Indeed, *proof of logic* plays a part in the format and framework of each *design stage*, and the decisions therein. There appears to be a relationship between them.

Viability
Feasibility
Desirability

**Enabler:** User Accessibility

**Enabler:** User Involvement

It seems *user involvement* and *user accessibility* are enabled by human values paired with either technology or combined with all three spheres. The model equally implies that no single value can support improved access or participation. Enabling *user access* and *involvement* seems to combine multiple spheres to support the uptake of any inclusive endeavour.

The similarities are likely encouraged by their shared central concern—the user. Practitioners reported on an obvious relationship between both
notions. Improved user involvement leads to improved accessibility, and
greater accessibility can enable user involvement.

Table 18: Reflections on Shared Models

General Observations

The models provide a glimpse into the overall enablers and barriers for each notion. Reflections on similar – shared – models highlight the interactions, impact, and relationships between spheres. Observations about shared models begin to suggest that intersecting spheres involve multiple different values and thus, a greater complexity in resolving issues therein. To explore this further, the table below superimposes the models from each notion. Simply, the numbers below the number of times a section of sphere was highlighted. The table helps to illustrate the most and least common enablers and barriers across the seven proposed notions. For instance, the intersection between desirability and feasibility was reported as an enabler across all seven notions. The purpose is not to quantify values, but to provide an idea about the impact of each section within overall enablers and barriers to the uptake of designing inclusively. Below, reflections are made about the occurrence of different sections and how this might relate to the uptake of designing inclusively.

<table>
<thead>
<tr>
<th>Enablers</th>
<th>Barriers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Viability</td>
<td>Feasibility</td>
</tr>
<tr>
<td>Desirability</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Desirability</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>6</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

Table 19: Occurrence of each section (maximum 7 instances per section)

First, the most common enablers intersect desirability with each or both spheres. In comparison, these are the lowest impact barriers. This can lead to consider that enablers require multiple values and are therefore more complex. Barriers can stem
from concerns solely about viability or feasibility. Thus, it seems easier, or at least simpler to hinder the uptake of designing inclusively – using a single value such as financial or technological capabilities.

The most common barriers are financial viability, technological feasibility, or their intersection. Inversely, these highest occurrence barriers (viability and feasibility) are amongst the least common enablers (apart from excerpts about design stages). However, proposals that include both spheres do seem to enable the outcomes and impact, designs stages, constraints, and governing ways of thinking. These notions, appear to overlap and influence one another. They relate to overall design concerns rather than purely inclusive ones such as involvement and accessibility.

There are two sections of the model with the most significant gaps between enablers and barriers.

First, every model (notion) justifies viability as a sufficient barrier to uptake, but not a standalone enabler (except design stages). This means that exclusively economic or financial concerns are a justifiable barrier to the uptake of designing inclusively within every notion. No single notion is unaffected by the viability of a design.

Second, the least common barriers are the strongest enablers – these are arguments that address either all three spheres, or the overlap between feasibility and desirability. Interestingly, this represents the enablers for user inclusion and involvement. This suggests a relationship between them and identifies them as potentially complex and the most impactful enablers to inclusive practice. Interestingly, these sections are both enablers and barriers to involvement and accessibility. This means that some arguments may use the same values to either positively and negatively impact user involvement and accessibility.

### 6.1.4. Reflections and Limits to the Study

The purpose of this study was to engage with data to learn more about the notions developed throughout this thesis. It is brief given the limits of the study. The framework – intersecting spheres of Open Innovation - were formed as a means of analysis within the present study and are not peer-reviewed or validated academically, despite their prevalence in design practice. There are not clearly defined understandings of each sphere / building block as a means of analysis, or procedure to coding data. Yet, it was useful to engage with data in different ways and continue to uncover different and deeper understandings of the proposed notions. This includes the influences and
configurations of enablers and barriers, and the relationships, commonalities, or overlaps between different notions. For instance, specific spheres or intersections were prevalent across notions. There is an apparent common need to intersect different building blocks of Open Innovation to enable uptake, while the influence of viability or feasibility were considerable deterrents. It could be suggested that issues within a single sphere are sufficient to hinder uptake, while improving the impact of designing inclusively must happen at the intersection of multiple values. This can support reflections on practitioners’ degrees of inclusion (Holmes, 2018). Perhaps those that do not fully engage or understand the complexity of interconnecting values will often sense limited uptake. They are not able to perhaps reach a threshold of inclusion to overcome barriers. RIBA (2020, p. 52) highlight the importance “to ensure that the threshold of information required for an application is achieved, and that the design is robust enough for development once planning consent has been obtained”. Limited views and applications of inclusion may not combine values in a way that convinces others to take on more inclusive approaches. Otherwise, there were commonly shared patterns (models) within the study. This leads to question the relationships or interconnectedness of different notions. There were clear indicators that user involvement and accessibility share commonalities. Equally, results pointed toward similarities between the enablers and barriers within design stages, project constraints, and outcomes and impact. These findings can help support further interpretations and discussions that answer the guiding research questions in Chapter 7: Discussion.

6.2. Notions throughout Practitioners’ Development Processes

This inquiry with the notions involved semi-structured interviews with some of the participating designers, architects, and planners from the initial discussions (data collection). These discussions involved the final iterations of proposed notions and design processes that accurately reflected participant practices. The study was devised to identify the prevalence of notions across the design process – a guiding research question of this thesis. The study helped further understand the interactions and interconnectedness of notions, as well as some of the prevailing effects each imposes onto the design process.

Due to availability issues, discussions were only fully conducted with 3 participants although two others provided reflections through email correspondence. Equally, as it will be explained, the study could not provide a comparative or definitive tool for analysis. Rather, the tables served as probes to further engage with notions within particular design stages. Below is a description of the (i) purpose and sampling of the study, the (ii) results and key findings from data collection, and (iii) reflections and limits to the findings.
6.2.1. Purpose and Sampling

This study was designed to help answer the following main research question: *Which parts of designing inclusively are (most) prevalent in project development and in the negotiations and trade-offs within the project?* The notions formed in this thesis, data analyses, and further inquiries and analyses began to reveal connections, hierarchies, and relative importance of different notions across various parts of the design process. For instance, it was made clear that the development of inclusive *governing ways of thinking* from the outset were a useful means to improving uptake.

Equally, it was reported that *user accessibility and involvement* were helpful tools during ideation and prototyping – before manufacturing or production – to avoid high costs associated with retrofitting or the reputational damage of faulty (exclusionary) designs. The following inquiry learns from practitioners who discuss where, how, and how often each notion impacted different stages of their design processes. A document was created which included definitions and examples for each notion, and a table that placed the notions against each stage of the design process. For each practitioner, pre-emptive discussions helped lay out their design processes and embed them into the table. Practitioners were then asked to read through the notions and complete the table by indicating the importance of each notion across their process. (Example, Annex 5). The figure below explains how to complete the activity. This is an example where the participant expressed that they wanted to use the RIBA (Royal Institute of British Architects, 2020) stages as their preferred process.

![Table 3: User Accessibility](image)

For Reference Only, Identical to Figure 10: Example Illustrating Impact of a Notion Across a Design Process

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For Reference Only, Identical to Figure 10: Example Illustrating Impact of a Notion Across a Design Process
Participants were sent the document and asked to complete the table, as well as add comment throughout as they saw fit. According to availabilities and preferences, some interviews were completed immediately after the activity (for participants who “wanted the ideas fresh in their minds”) or after a few days or weeks (to “reflect on the notions and think about them while they work”). This second series of semi-structured interviews took place between September 2021 and January 2022. Just as the first series, interviews were conducted remotely using MS Teams, recorded, and transcribed. Interviews were between 45-75 minutes. Due to availabilities, the table was completed by the Pilot Study Participant, and Participants 1, 2, and 3. Still, P4 and P5 provided some advice in email correspondences, but P6 was not available.

6.2.2. Results

Email correspondences with participants before discussion allowed to depict an accurate representation of their respective processes, illustrated below:

<table>
<thead>
<tr>
<th>P1</th>
<th>P2 (&amp; P4)</th>
<th>P3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategic Definition</td>
<td>Strategic Definition</td>
<td>Gap / Opportunity</td>
</tr>
<tr>
<td>Preparation &amp; Briefing</td>
<td>Preparation &amp; Briefing</td>
<td>Plan &amp; Determine Direction</td>
</tr>
<tr>
<td>Concept Design</td>
<td>Concept Design</td>
<td>Create Brief</td>
</tr>
<tr>
<td>Spatial Coordination</td>
<td>Prototyping</td>
<td>Call for Designs</td>
</tr>
<tr>
<td>Technical Design</td>
<td>Technical Design</td>
<td>Technical Planning</td>
</tr>
<tr>
<td>Manufacturing &amp; Construction</td>
<td>Manufacturing &amp; Construction</td>
<td>Setting up</td>
</tr>
<tr>
<td>Handover</td>
<td>Handover</td>
<td>Encounter / Event</td>
</tr>
<tr>
<td>Use</td>
<td>Use</td>
<td>Conclude &amp; Reflect</td>
</tr>
</tbody>
</table>

*Table 20: Proposed Design Processes for Each Participant*

As an architect, P1 was very comfortable using the proposed RIBA (2020) stages to complete the document. Next, participants 2 and 4 were able to easily relate their processes to the RIBA stages but replaced *Spatial Coordination for Prototyping*. Alternately, P3 did not connect with either process. Instead, we discussed the overall process and established a set of 8 main stages to the design of their events and activities.

Throughout discussions and completing the table, participants blended or combined some stages, and four main phases of the process emerged. These are explained below and used to help illustrate the prevalence of each notion across the process later:
1. Prepare

Includes defining the strategy, goals, brief and overall design of the development process. Includes defining the business case, client or project requirements, opportunities to solve design problems, and planning project direction.

2. Design

Generating ideas, distilling research into design features; sketches, mock-ups, discussions with clients and stakeholders about potential solutions.

3. Make

Produce final prototypes and move into construction and manufacturing of the design.

4. Use

Handover design to client, installation, launch, and use by users

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**Table 21: Summary of main phases within the proposed design processes**

The tables and descriptions below will illustrate and explain how each practitioner makes sense of the notions across the overall design process. Just as participants reported (see annex 5), a notion that is ‘very important to consider’ is indicated with two crosses (‘++’) while a single cross (‘+’) indicates that practitioners find the notion ‘good to consider’ (as mentioned in Figure 10 above). Comments explain how these notions manifest within the process and begin to reveal practitioner motivations and mindsets.

**Participant 1**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Proof of Logic</td>
<td>++</td>
<td>+</td>
<td>++</td>
<td>+</td>
<td>Important to determine a vision in the early stages, a brief or commitment that follows throughout the process. Important guide during construction (Make) when things get value engineered out / deviate.</td>
</tr>
<tr>
<td>Governing Ways of Thinking</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>Client and architect expectations frame the project from outset. Establish priorities in the brief which influence throughout the process. Attempts are made to change perspectives and demand inclusion through case studies, best practices, and tailored reasoning (specifically about the client and local opportunities).</td>
</tr>
<tr>
<td>User Accessibility</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>Important to understand baseline legal requirements and regulations, but this may be seen as ‘minimum’ and does not stretch beyond.</td>
</tr>
<tr>
<td>Project Constraints</td>
<td>++</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>Considering constraints from outset and brief to hopefully mitigate possible compromises to inclusion. Then, constraints guide remaining stages (little leeway to change).</td>
</tr>
<tr>
<td>User Involvement</td>
<td>++</td>
<td>+</td>
<td>++</td>
<td>Especially useful during design and use where intervention with users is possible. Important to support construction (Make phase), and wider issues regarding accessibility on construction sites.</td>
<td></td>
</tr>
<tr>
<td>------------------</td>
<td>----</td>
<td>---</td>
<td>----</td>
<td>--------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Design Stages</td>
<td></td>
<td></td>
<td></td>
<td>Was not understood – unclear how to apply design stages (as a notion) within proposed RIBA stages.</td>
<td></td>
</tr>
<tr>
<td>Outcomes &amp; Impact</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>Useful throughout to provide clear audit trail and documentation to understand, identify, and feed into design/operations decisions across process, and into next projects.</td>
<td></td>
</tr>
</tbody>
</table>

Table 22: Summary of Activity with Participant 1

Through the table and follow up discussions, P1 expressed that Outcomes & Impact and Proof of Logic were the most prevalent notions to designing inclusively within their process. Outcomes & Impact were interpreted as a way of tracking and making visible the consequences of decisions at each stage through the process. Tracking these outcomes serves as an ‘audit trail’ partly to support their efforts and value in the process, but more importantly to better understand the efforts and impact across each phase. The notion is seen as a description of the efforts, attempts, and decisions which contributed to designing inclusively. If the findings are well documented, they intend to support future endeavours, transcending individual projects to address overall practice.

Proof of Logic was equally prevalent within their interpretation. P1 continues to advocate for the value of pushing beyond minimum requirements and starting ‘the earlier the better’ by defining a vision that carries throughout the process. Yet, despite best efforts and intentions during the preparation stages, P1 reminds that inclusive characteristic are often value engineered out of the project during construction (making). In practice, this often reflects the quick changes to amend errors within spatial planning (such as air shafts, wall thicknesses, electrical clearances, ...).

Concerted efforts are needed to oversee that some compromises do not overstep inclusive design criteria which are often outside the scope of civil engineers and tradesmen (building the space). There is equally a need to maintain high accessibility standards after construction and during use of the space, often with the help of an inclusive ethos within the culture and management of a building.

This leads to notice the continuous influence of the Governing Ways of Thinking which hold the vision in place across the process. There is a continued effort to maintain the vision and prioritise thinking that positively impacts the inclusive value of the project. This implies a constant confrontation with ways of thinking within the team, clients, and stakeholders that deviate from...
governing inclusive intentions. Development processes seem to involve continued pressure from different ways of thinking that enter and leave the project at various moments throughout.

User Involvement – which is considered a central part of designing inclusively – is reported as especially prevalent during the Design and Use Stages. During the design stages, involvement can help gain insight from personal lived experiences into the value or coherence of different developments and ideas. Users work – in a framed capacity – alongside designers to provide honest representations of the projects or its features in use. Then, the Use Stages provide evidence into how users actually interact with the final outcome. This can help to assess and evaluate the value of efforts to designing inclusively. This implies a relationship between User Involvement and the Outcomes and Impact.

Finally, P1 struggled to interpret the Design Stages, it seemed that overlaying the notion along a real design process with clearly framed and understood stages was repetitive. It was unclear how Design Stages played a part in the table.

**Participant 2**

<table>
<thead>
<tr>
<th>Notion</th>
<th>Prepare</th>
<th>Design</th>
<th>Make</th>
<th>Use</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proof of Logic</td>
<td>++</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>Assessing to see how inclusivity adds value at each step. Continued negotiations across the process. Framing from outset carries on through process.</td>
</tr>
<tr>
<td>Governing Ways of Thinking</td>
<td>++</td>
<td>++</td>
<td></td>
<td>++</td>
<td>Continued dominance of economic value can shadow inclusion. Linking inclusivity with improved play value from outset is key. Find allies and experts to argue benefits in early stages who then take part in design stages. Once launched, testimonials from users and clients can inform next projects and enable conversations about inclusion through successful examples.</td>
</tr>
<tr>
<td>User Accessibility</td>
<td>++</td>
<td>++</td>
<td></td>
<td>++</td>
<td>Selling a product as ‘inclusive’ or ‘accessible’ is an important part of framing expectations and possibilities with clients from the start. Then standards, personas, and guidelines are developed or researched to play a part in the design stage. Finally, users engaging with the product and enjoying it is an important part of assessing if the product is accessible, compliant, and successful.</td>
</tr>
</tbody>
</table>
Table 23: Summary of Activity with Participant 2

Notably, P2 discusses a deep interconnection between notions. They are rarely distinct and often work together to support one another. Still, the most prevalent notions are Project Constraints and Proof of Logic. According to P2, while Governing Ways of Thinking influence decision-making, Project Constraints are the rigid framework that controls possibilities within the project: “At the end of the day, we have to make decisions about what to add or leave based on the project constraints” (P2). At the end of each stage, their team meet for a ‘go / no-go’ meeting where the current design is negotiated and argued against project constraints. In most projects within their industry, constraints are dominated by economic value (financial benefits). Yet, some projects may propose alternate criteria such as sustainability or inclusion (i.e., achieving a threshold or percentage of reduced materials, or inclusively designed components). Still, the underlying purpose of these criteria is often financial. In the case of inclusively designed products, P1 explains that these characteristics can help distinguish from other products within their market. Sales and marketing teams can justify its purchase as a structure with improved or greater play value for a wider and more diverse audience. This begins to lean into Proof of Logic, wherein reasoning the value of inclusive designs supports its uptake as a practice. P2 explains that Proof of Logic often directly supports the guiding project criteria, objectives, goals, or constraints. It is most impactful from the early preparation stages and
influences the project thereon. Proof of Logic often functions alongside User Accessibility to justify improved access; informed by the outcomes of past projects, the development of inclusive personas, or the participation of expert consultants who provide clear guidelines for greater user access. These support a Proof of Logic through continued and constant negotiations with other team members who may challenge inclusive values within the project constraints.

In the table above, it seems the notions have little effect during Making phase (construction, production, and manufacturing). According to P2, changes are no longer possible once designs are settled and sent through to production. Once completed, designs are manufactured and sent for sale, distribution, and use. Any concerns about inclusion would / should have been addressed in prior preparation and design phases. Otherwise, they contribute as cautionary tales and warnings for future projects.

User Involvement was limited to design and use phases. According to P2, there is no point in testing with users until a relatively advanced or finalised prototype is produced. They rely on testimonials or limited direct observations to either support a current design, or future projects. Manufacturing facilities and the nature of their products (water features) limit proper testing to spring and summer months. This does not always comply with timelines where prototypes are usually ready for late fall and installed early Spring. This limits their ability to test with users (in the Northern Hemisphere). Often, they rely on personas, findings from past research projects, or the knowledge of relevant consultants who may support the uptake of inclusion.

### Participant 3

<table>
<thead>
<tr>
<th>Notion</th>
<th>Prepare</th>
<th>Design</th>
<th>Make</th>
<th>Use</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proof of Logic</td>
<td>++</td>
<td>++</td>
<td>++</td>
<td></td>
<td>Immediately start to find evidence to reason arguments for objectives based on existing users, work of peers, and social values of the organisation. Build partnerships and set a foundation. After completion, evaluate original intentions against what was achieved.</td>
</tr>
<tr>
<td>Governing Ways of Thinking</td>
<td>++</td>
<td>++</td>
<td>++</td>
<td></td>
<td>Awareness and critique of drawbacks from status quo. Understand the ecosystem and find what is perpetuated from previous lack of awareness, attention, or critical thinking. Early dialogues with beneficiaries and audiences. What are the natural entitlements at</td>
</tr>
</tbody>
</table>
play. In the end, reflect on how the organisation works and what families feel they deserve, and what is ethical to offer.

| User Accessibility | + | + | + | + | Central awareness and breadth of access requirements. Determine offer, limits, barriers that are in place, and maintain a dialogue across all participants and stages to assess if and how needs are met.

| Project Constraints | ++ | ++ | | | Inclusion is only possible when trust is formed from realistic constraints. Transparent parameters to opportunities to avoid detrimental expectations from users. Frame and limit the scope to provide consistent offer over an overly ambitious and faulty one.

| User Involvement | ++ | ++ | ++ | | Lived experience is essential to assess need and demands for change early on. “Nothing about us without us”. Designing a concrete and transparent offer with ‘self-identification’ as key part of the process. Situate experiences and perspectives to understand offer clearly. Finally, include user voices in reflections and shared experiences during use to gain honest answers that hold designers accountable to expectations.

| Design Stages | ++ | ++ | | | Impact of timings in design and implementation of programme. Ensuring good flow from funding, to set up and design, to making and launch, to use.

| Outcomes & Impact | ++ | + | + | | Set key ingredients to place users in best possible position for a positive experience. Mid stage assessments to limit potential harm and challenges. Try to predict pitfalls without limiting possibilities to enjoy. Consequences of decisions from earlier stages on activity, materials, and facilitation style during use.

| **Table 24: Summary of activity with Participant 3**

According to P3, User Accessibility and Proof of Logic are the most prevalent notions to designing inclusively within their project development process. User Accessibility is intrinsic to every element of preparation, design, execution and use. P3 reports on the importance of continued dialogue with users about their access requirements and unmet needs. They address not only the physical, but emotional requirements to ensure users feel confident and safe to engage with any part of the design. Designers are responsible to react within a flexible framework for users and consistently perform within informed gestures (thoughtful actions that support inclusion and accessibility). P3
also proposes a healthy training budget to support new learning within the design team, stakeholders, and staff who will engage with users.

**User Involvement** appears to be entangled with *User Accessibility*. Users play a central role, informing the design through stories and experiences about their needs, preferences, and requirements. Their involvement contributes to reflections and reasonings that support a *Proof of Logic*. The honest lived experiences of users and the social and business values of the organisation form a foundation to the design and implementation of the process. *Proof of Logic* is framed from the outset and is essential throughout the process as a guide to maintain inclusive integrity – a consistent and accurate offer to user access needs - informed by their testimonials - in which designers are held accountable for their decisions. *Proof of Logic* also documents the continued improvements discovered from one project to the next, and how these changes are ethically appropriate. The notion captures a reflective, iterative, and expansive process of learning from users, developing increasingly appropriate solutions, and managing a framework that flexes to user needs.

**Design Stages** are interpreted as the overarching design of the process rather than respective phases. Individual stages of the design process are mainly reported through *Project Constraints* and the *Outcomes & Impact*. The process is seen as a spiral wherein reflections about the outcomes and impact of one project inform the first stages of the next. P3 refers to a ‘portfolio of moments’ that inform and report on the wider programme design for all stakeholders. This equally fits into the flexible framework wherein designers swiftly react to new discoveries and findings from **User Involvement** and participation through constant delivery of new and newly designed events.

**Participants 4, 5, and 6**

Due to availability issues, P4, P5, and P6 were unable to take part in this activity. Still, P4 and P5 provided some thoughts through email correspondences. First, P4 reported that their design process is similar to P2 wherein prototyping replaces Stage 4: Spatial Coordination in the RIBA Stages. They also provided details about **User Involvement** across the design process. Their team includes preliminary studies with users during preparation phases to learn about issues with current products, market competitors and recent designs / concepts. They value user insight to assess use, navigation, and clarity during concept design and prototyping (design phase). P4 also mentioned that users were often recruited from their comments and reviews in the App Store. Testimonials fed into new ideas and the beginning of subsequent new development processes to improve the app.
P5 provided reflections into the design of the activity itself. Their view is situated within experiences working on large complex projects, such as the construction of a city-wide transport link. They explained that while some stakeholders may have an overview of the design process and stages, much of the project is fragmented and divided across multiple contracts and objectives that do not interact or view the project as a whole. P5 criticises that clearly defined design stages do not support these kinds of large projects well. They refer to the issues within the construction and demise of Grenfell Towers in London: “I’m sure that nobody was overseeing using a design process of any type, RIBA or their own development. Where disabled accessibility fits into that is anybody’s guess” (P5). They highlight the fragmented nature of large projects and its negative effect on attempts at designing inclusively.

6.2.3. Reflections and Limits to the Study

The discussions and activity with participants provided further reflections about the notions and their prevalence across practitioner real-world design processes. Overall, the notions were well understood; participants appreciated the short definitions as summaries, while the descriptions helped to make sense and contextualise the notions within practice.

When placed along their own design processes, participants struggled to apply to notion Design Stages. P1 reported that the notion felt redundant or repetitive:” apply[ing] design stages (as a notion) onto the proposed design stages (RIBA)” . P2 expressed the importance and value of clear design stages but could not report on prevalence framed within the activity. Equally, P3 described the importance of Design Stages, but as the overarching structure to building a design process, rather than within each individual part. It could be said that while a good understanding of the Design Stages that form a project development process is important (just as P5 supports), the notion was difficult to apply onto participants’ declared processes – as designed in the activity. Otherwise, participants highlighted which notions were most prevalent. They reported on the impact of Governing Ways of Thinking, Project Constraints, and User Accessibility, and - most notably – Proof of Logic. The latter was described as an important tool that creates the vision of a project and serves as a rhetoric throughout the process. It was also explained as a support for project frameworks formed by evidence and previous experiences that support inclusion. Meanwhile, participants expressed that User Involvement – an intrinsic part of many approaches to designing inclusively – was particularly impactful during the Design and Use phases of the process. Users can intervene to support and test design ideas, provide insights and stories from their lived experiences, and inform future processes through their interactions with the final project, once launched.
Through discussions, participants also expressed a noticeable interconnection between notions. The following section illustrates and explores this through answering RQ4 (prevalent parts of designing inclusively). This study is limited by many of the same concerns as before: sample size, availabilities, and approach to semi-structured discussions. In addition, participants dedicated different amounts of time and attention to the activity. While one completed the table and immediately conducted the interview, another completed and discussed a week later with some accompanying notes, and a last provided a 5000-word accompanying reflection to support their decisions and guide discussions the following week. Also, at the beginning of this chapter, it was mentioned that their answers serve as cues. Indeed, during the discussions, participants would change their answers following examples or discussions (shifting the impact of certain notions from ‘good to consider’ to ‘very important’). This suggests that the answers within their respective tables would not serve in direct comparative analyses. This also partly motivated the reformat of their tables into four overall phases. Still, the purpose of this study was not to quantify findings, but rather learn from practitioners about the prevalence of different notions through the design process. The tables, interpretations, discussions, and model suggest that this was achieved – providing a greater understanding to the impact of each notion.

6.3. Answering RQ4: Prevalent Parts of Designing Inclusively

In earlier chapters, preliminary notions were proposed and advanced into more accurate representations on real-world design practice based on discussions with practitioners. These notions were further analysed to uncover interconnections and prevalence between them. Practitioner testimonies were also analysed to find underlying aspects to the uptake of designing inclusively formed under three central areas: general project development, working as a team, and designing inclusively. To fully understand the uptake of inclusion, these notions and aspects recognise the practical and social implications of designing. Designing inclusively is entangled with concerns from general project development and team dynamics (Bucciarelli, 1994). These deeper analyses, inquiries, and insights from the past two chapters have helped form an answer to RQ4:

RQ4: Which parts of designing inclusively are (most) prevalent in project development and in the negotiations and trade-offs within the project?

The following section will present a final understanding of aspects as presented under the three proposed areas. Then, the final notions are explained, including reflections on their respective prevalence across these three areas, within practitioners’ own processes, and as an interconnected ecology.
6.3.1. Prevalent Aspects

Through coding the discussions, a series of aspects to designing inclusively were proposed (Section 5.2 Underlying Themes / Aspects). They were organised according to three major themes: Project Development, Working as a Team, and Designing Inclusively. Following the inquiry Notions Throughout Practitioners Development Processes (Section 6.2) discussions revealed an additional aspect called Iterative Loops, explained later in this section. The table below is a reminder of the aspects presented in Section 5.2. Details about each aspect and their intersections with the theoretical landscape, results, and analyses follow.

<table>
<thead>
<tr>
<th>Project Development</th>
<th>Working as a team</th>
<th>Designing Inclusively</th>
</tr>
</thead>
<tbody>
<tr>
<td>Available Money and Time</td>
<td>Stakeholder Dynamics</td>
<td>Actioning Change</td>
</tr>
<tr>
<td>Existing Practices and Processes</td>
<td>Gatekeepers</td>
<td>Logic of Involvement: (Reputational Damage, Benchmarking, Universalism vs. Bespoke, Transferability)</td>
</tr>
<tr>
<td>Optimizing</td>
<td>Institutionalizations</td>
<td>Presumptions and Disability Prejudice</td>
</tr>
<tr>
<td>Regulations and Guidelines</td>
<td>Middle Ground</td>
<td>Maintenance</td>
</tr>
<tr>
<td>Retrofitting</td>
<td>Cultural Contexts</td>
<td>Earliest Involvement</td>
</tr>
<tr>
<td>Scaling Up</td>
<td></td>
<td>Recruitment</td>
</tr>
<tr>
<td>Global and Local Context</td>
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<td>Participation</td>
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<td></td>
<td></td>
<td>Compensation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Iterative Loops</td>
</tr>
</tbody>
</table>

For Reference Only, Identical to Table 14: Proposed Aspects to Designing Inclusively from Practitioner Perspectives

Project Development

First, several prevailing aspects to designing inclusively concern general project development. As it was mentioned, these aspects were seen to play a role in the outcomes of projects, but do not seem inherent to advocating for inclusion specifically. Notably, the money and time available – dedicated to a project – were reported to significantly influence and control possibilities (Dong et al., 2003; Goodman et al., 2006). According to Heylighen et al. (2017), there is a perception that designing inclusively slows down time to market. Alternately, Ielegems et al. (2019, p. 191) reported that their respondents “did not perceive time as a problematic barrier at the start of the design process”. This however challenges the experiences of P2 whose team were given a healthy budget for research and development but were stifled by very short timelines. These issues are also linked to a projects’ existing practices and processes, wherein investments made to current procedures, pipelines, manufacturing methods, or contracts influence decision-making. Clients may insist on their current
To capitalize on investments, liquidate inventory, and maintain lower costs. As Tonkinwise (2019, p. 4) notes, “Design is the art and science of mass production, so its central expertise involves judging the right way to preserve the quality of an innovation when trying to maximize the quantity of people it can serve”. There is an intrinsic link to optimising - often associated with streamlining or improving production, assembly, or user experiences. As it was noted in the analysis using the model of Open Innovation (Section 6.1), inclusive solutions are more easily accepted when human values are paired with improved viability or feasibility. Part of the arguments that also support uptake consider the importance of scaling up. This concerns how an idea can expand and move into larger or growing markets sustainably. P5 reported that addressing the needs of least abled can often suit a broader population. Doing so can also help avoid the need for retrofitting: revising a finalized or existing design and resolving issues bound by the surrounding infrastructure. Ullman (2010) mentions that retrofit can introduce significant expenses and the loss of customer confidence. Practitioners reported that this is often more expensive and complicated – accessing a site that is in use, disrupting its users, and providing them suitable alternatives during changes. This may have to do with updating a design, or amending it to comply with regulations and guidelines. Companies must adhere to adhere to regulations, or risk legal consequences. This is especially complex for mass-produced or international projects where regulations may differ or contradict (Ielegems et al., 2019). Steinfeld and Maisel (2012) outlined that practitioners may also rely too heavily on regulations and develop a ‘tunnel vision’, focused solely on legal compliance rather than resolving user access issues. P1, P5, and P6 mentioned that the regulations are often out-of-date. They ultimately do not reflect current issues and comply with novel assistive technologies. As such, P1 and P6 opt to provide tiered advice to comply with requirements and nudge clients towards better practices. Another solution includes recognising the global and local contexts of a project. Accessibility can better manifest by considering “local circumstances, culture, and social conditions” (Heylighen et al., 2017, p. 514). Practitioners captured this through inquiries with local councils, studying the culture of a building, and involving local citizens, users, and service providers. This links to the grassroots advocacy for inclusion reported throughout participatory design and engagement (Sanoff, 2010).

**Working as a Team**

Second, aspects about working as a team were prevalent within the uptake of designing inclusively. These aspects recognise that each participant holds different framings or object worlds that motivate their actions and interactions with others (Bucciarelli, 1994; Dong, 2005). Indeed, these mainly concern stakeholder dynamics: the relationships between those involved (especially in
decision-making) in the project. A first concern are institutionalisations, or deeply embedded ways of thinking with often systematic effect (Nieuisma, 2004). Key stakeholders may hold different priorities that challenge the uptake of designing inclusively. They may prove inflexible to change within their ways of working or expect to take part in specific ways that do not align with an inclusive approach. Their perspective may be equally framed by specific cultural contexts or backgrounds. P5 mentioned the value, yet complexity of an international team. They reported that East-Asian architects worked with different design processes and regulations that were not shared with UK counterparts. Their insight was helpful, but challenged expectations held by other stakeholders. Open communication to develop a shared understanding was important (Kleinsmann et al., 2007). These negotiations often involve Gatekeepers: those who decide on how a project or idea advances from one milestone to the next. Often, gatekeeping status is held by clients, and those they employ to manage a project. Indeed, they assess the risks and rewards to carrying a design forward (Chiocchio et al. 2011). Inclusive ideas may not appeal – targeting small markets and spending on new or unverified manufacturing or construction methods. Gatekeepers lack the incentive to take on a risk, and are held accountable if a project fails. According to Jehn & Bendersky (2003), conflict often follows a breakdown in team member cooperation. To avoid these issues, P2 approached the problem cooperatively to ensure gatekeepers thought “the idea was as much theirs as ours”. This initiates efforts to find a middle ground - compromising or finding opportunity between different views. As was highlighted in the models of Open Innovation, uptake is influenced by the weighting of specific values over others and is rarely equidistant between two different views. Instead, practitioners blend client / gatekeeper interests with their own. They negotiate a view that bridges their values, rather than negotiate one or the other. Despite efforts, changes are often incremental; subtly moving away from marginalizing designs to more inclusive ones. It could be said that these negotiations slowly erode institutionalisations and encourage gatekeepers into a cooperative role that is more receptive to designing inclusively.

Designing Inclusively

Third, there were aspects beyond the scope of general project development and team dynamics that seemed specific to advocating for and instilling inclusion. Most importantly, practitioners who decide to design inclusively should understand the importance of actioning change. Inclusion rarely happens without instigation or the efforts of someone in a team to introduce, advocate, and drive it. Despite best efforts, change is challenging and often incremental. During the further inquiry with practitioners, P1, P2, P3, and P4, visualised the process as iterative loops. The outcomes of a project support future developments or serve as best practices or cautionary tales. According to Steinfeld
and Masel (2012), it is a nonstop process that continuously informs future attempts. These loops can also build confidence in both designers (to facilitate) and users (to express themselves and take part) (P3). Indeed, lelegems et al. (2019, p. 191) mentions that “respondents who had been involved in at least one inclusive project experienced significantly fewer barriers”. Designing inclusively is a concerted, continuous, and active effort to advocate “on behalf of marginalized peoples becoming designers and taking the lead on all projects. Advocating for wide participation in non-project-based aspects of an organization, such as the visions for the future that the organization is working toward and prepared to evaluate its work against” (Tonkinwise, 2019, p. 7). P1 and P6 mentioned the importance of maintenance, wherein inclusive practices continue in the design beyond the development process. It is a continued process that is upkept and assessed continually throughout the life of a building, space, service, or product.

When designing inclusively with others in a project, practitioners should caution presumptions and disability prejudice. They are automatic frames of reference that are problematic when trying to involve or design for marginalized groups. Team members or stakeholders sometimes hold perceptions of people with (dis)abilities that undermine their capabilities, omit them from design criteria, or neglect and marginalize them. Presumptions are automatic, and often undisclosed frames of reference that hinder the design or involvement of minority groups (Van der Linden et al., 2017). Some can avoid involvement altogether for fear that they may inadvertently offend them during discussions (Dong et al. 2003). Practitioners may use themselves as a shortcut to frame abilities but miss out on the expertise developed from lived experiences with restrictive access requirements. While some researchers propose that clients simply lack the information to adopt more inclusive approaches, P1 explained an experience where the client outright refused, despite incentives. This may start to encroach on targeting specific types of users or consumers, and intentionally excluding others.

When designing inclusively, there is a central concern to involve users as active members of a design team. To support uptake of the idea, practitioners can rely on different aspects that support a logic of involvement (or providing a proof of logic). Practitioners can encourage benchmarking: to hold the best practices / standards in given industry, and to stand out from other designs and offers by leading in inclusion and accessibility. Benchmarking can propose to fulfil a market niche or resolve company and competitor shortcomings. This can reward clients with a positive ripple effect (P5). It demonstrates that “an organisation is truly committed to inclusion” (Holmes, 2018, p. 88), and enhances a company’s reputation (Coleman, 1994). Alternately, marginalising designs can create negative ripple effects that cause reputational damage. By neglecting to design for specific access requirements or create a sense of belonging for diverse types of users, a company may build a
negative reputation. By excluding specific users, a company can lose the support of marginalized groups, as well as others who align with values of inclusion and are open or attuned to diversity. As P5 explained, “all of that outside that immediate business case falls somewhere in the organization, and it does reputational damage. Those involved will have a ripple effect on their immediate friends, co-workers or family concerned about the issue”. Practitioners may also confront tensions between providing universal versus bespoke solutions. As it was explained, some interpretations of inclusion advocate for solutions to suit every user, although others report that this downplays the value of designing for specifically marginalised people (EIDD, 2004; Hamraie, 2017). P3 reports on the value of bespoke design to allow marginalised users to fully express and be themselves in a space. P6 specifies that in creating equality, practitioners are shaping very different offers to suit different groups and requirements. Equally, P2 argued that any changes would compromise the inherent play value of their design. According to Heylighen et al. (2017) companies are often reluctant given the perception that marginalised groups have limited buying power as a minority. Yet, many practitioners boast the transferability of their designs. They consider that conditions of one user can translate to satisfy the needs of others and broaden the scope of targeted users. Some experiences or needs – such as safety – can transcend human differences (Heylighen et al., 2017). P5 also proposed that designing from the worst-case scenario can often suit more people than designing for the most capable, or average user. Indeed, Holmes (2018) challenges the average, explaining that little to no users meet proposed average human measurements (the combination of height, weight, arm length, shoulder width, etc…). Rather, practitioners should rely on individuals rather than a mythical user.

Once user involvement is accepted as part of the process, other concerns emerge. First, practitioners should consider recruitment. If uncertain how to find users, P1 suggests contacting advocacy groups, local councils, the client/stakeholders themselves, or draft clear criteria for recruitment agencies. P6 recommends broadening the scope of users to include input from those who interact with a design such as staff members, distributors, maintenance teams, or passers-by. Different information and possible biases can emerge from including ‘critical friends’ versus ‘strangers’ (see key informant, Yin, 2014). Recruiting marginalized users is not always straightforward. They may be reluctant to share their experiences or discuss their oppression (Sangaramoorthy, 2014). Some groups are wearier than others, especially when the designer is seen as part of the mainstream / oppressive group. Sometimes, users are not part of the business chain (Zeisel, 1984). As it was mentioned when answering question 1, practitioners should consider how user participation is framed: as leaders, consultants, team members, mythical users, or quantified metrics. These roles and the impact of
user involvement is influenced by user and practitioner abilities to engage and facilitate expertise.
P5 summarised involvement in 4L’s: *Let me get there, let me in, let me participate, and listen.*

Project teams should also consider participants’ **compensation**. Sometimes, conflicts arise between providing funded (short-term) contracts, and users maintaining stable disability benefits. Often, local disability groups can help navigate these policies. Sanagaramoorthy (2014, p.18) also highlighted issues about compensation with academic research participants: “*many informants or potential informants wanted or expected monetary compensation for interviews that I was not authorized to give. I often tried to get around this by providing car rides, translation help, or food, but there were several times where my requests for interviews were denied because I could not offer people money*”. This can expose whether participants are equal team members, and how they may be rewarded. Overall, if users are valued as experts and are sought to take part as equal team members, they should be compensated accordingly.

### 6.3.2. Prevalent Notions

Through reviewing the theoretical landscape around designing inclusively, a first series of notions were developed. These were proposed as preliminary understandings of the topic and served as cues to guide discussions with real-world practitioners. Throughout the interviews as well as further analyses, inquiries, and insights, their experiences in turn guided the notions towards more accurate portrayals of present world inclusive practices.

The two tables below help to illustrate the prevalence of each notion. The first table reports on whether a notion is embodied in the proposed aspects under each theme (project development, working as a team, and designing inclusively). The second table presents the most prevalent notions reported in the further discussions with participants (who completed the table for *Further Analysis, Inquiry, and Insights, Section 6.2*). These tables support reflections about the prevalence of each notion in practice. and intersect the theoretical framework, results, analyses, further analyses and inquiries, insights, and reflections made up to now.

<table>
<thead>
<tr>
<th>Notion</th>
<th>Project Development</th>
<th>Working as a team</th>
<th>Designing Inclusively</th>
</tr>
</thead>
<tbody>
<tr>
<td>Governing Ways of Thinking</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Proof of Logic</td>
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<td>x</td>
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<tr>
<td>User Accessibility</td>
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<td>x</td>
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<tr>
<td>Project Constraints</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
</tbody>
</table>
Table 25: Prevailing Notions Throughout Proposed Aspects (Section 7.2.1)

<table>
<thead>
<tr>
<th>Notion</th>
<th>Participant 1</th>
<th>Participant 2</th>
<th>Participant 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Governing Ways of Thinking</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Proof of Logic</td>
<td>x</td>
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<td>User Accessibility</td>
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<td>Project Constraints</td>
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<td>User Involvement</td>
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<tr>
<td>Design Stages</td>
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<tr>
<td>Outcomes and Impact</td>
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Table 26: Most Prevalent Notions from Further Discussions with Participants (Section 6.2)

Governing Ways of Thinking

*Governing Ways of Thinking* are proposed as well-established mentalities that motivate people’s decisions. Usually, norms or standards that influence how something is conceptualised; guided by social, cultural, ideological, or economic values held by a dominant group (Campbell, 2000). Nieusma (2004, p. 19) explained that “governing mentalities shape how people interpret macro socio-cultural phenomena and how they think about their own lives and identities”. Moreover, the influence of *Governing Ways of Thinking* happens at much smaller scales, namely the micro socio-cultural trends within design teams or industries. Projects are influenced by the motivations and intents of key stakeholders. The proposed aspects embodied this notion across all three themes – including existing practices and processes, regulations and guidelines, institutionalisations, as well as presumptions and disability prejudice. Throughout the discussions, practitioners reported on its prevalence across the process and the importance of challenging ways of thinking that traditionally marginalise minority groups. They reported on its effect throughout the process, especially within the early stages, while designing, and through assessment at project handover.

Proof of Logic
Designing inclusively involves explaining how marginalised perspectives can add value to specific or overall goals: to compel with reasons that demonstrate value to the design. To establish criteria with evidence and statements, or inferences deemed valid to those involved in the project. This notion did not emerge in the initial proposal, and instead during data collection with participants. Yet, Tonkinwise (2019, p.3) alluded to it within design project negotiations: “Designing involves multiple decisions, and often a process that requires changing one’s decisions. But it is a decisive practice, a practice that moves forward only on the basis of concrete proposals that are specified and then tried out [and] must therefore entail standing up for a particular set of propositions”. Practitioners explained the challenges and importance of arguing their position and defending the value of inclusion through several methods. They referred to best practices, proposed transferable benefits, ripple effects, and warned of reputational damage. It is an intrinsic part of designing inclusively and is embodied across the aspects therein. During further discussions, practitioners reported it as the most significant part of designing inclusively.

**User Accessibility**

There is considerable concern about the ability for users to interact with and understand a design. Designs should at least comply with regulations to be “technically usable” (P6) but designing inclusively most often pushes beyond usability and learns directly from users. There is particular attention to physical and cognitive (dis)abilities, and those within marginal groups or protected characteristics (like gender, race, sexual orientation, social status, etc.). Accessibility is prevalent across theory and practice – playing a central role in acts, guidelines, and regulations (EIDD, 2004; UK Government Building Regulations, 2010, 2016 ed.; The Equality Act (1998). However, Ielegems et al. (2019) warned about the risk of ‘tunnel vision’: focusing on access legislation and forgetting to consider the lived experiences of affected users. Indeed, practitioners discussed the challenges associated with clients that were reluctant to move beyond minimum requirements. Users

**Accessibility** was embodied within aspects from project development and designing inclusively. It plays a part across the design process, but participants warned that construction and manufacturing (making stages) sometimes ‘value engineer’ inclusive proposals out of the project to accommodate unforeseen issues. It was described as an ‘easy target’ (P1). Accessibility was a noticeable concern to practitioners, but often included as standard practice, protected by regulations.

**Project Constraints**

The imposed restrictions to a project plan including budget, timeline, processes, requirements, values, and practitioner availabilities and capacities. They help guide a project forward and frame both its opportunities during the process, and its (estimated) outcomes. To improve the effectiveness of designing inclusively, new features must play a part in determining design goals and
criteria (Mosca et al., 2019). Project constraints guide the project throughout and affect project development, working as a team, and designing inclusively. They influence aspects such as available money and time, stakeholder dynamics, and the logic of involvement. It is a significant factor to the uptake of inclusion. Practitioners report on the importance of early involvement to embed inclusive criteria into Project Constraints. These criteria guide the entire process and often serve to redirect the project towards inclusion.

**User Involvement**
To listen to or include (the concerns of) those using or affected by a design and implement their experiences, thoughts, or insights into the process. Frauenberger et al. (2014) noted involvement as an often-significant challenge to carrying out a design development process. Indeed, practitioner experiences highlighted the unrest around involvement. There is not a clear view to enabling participation, assuming roles in the design process, considering users as equals in decision-making, or overcoming biases when facilitating discussions. User involvement significantly influences the aspects to designing inclusively. Practitioners reported on its value during design and use phases where users are often involved as consultants or test subjects. P4 reported on the value of their manager’s access requirements to guide inclusive designs, and P6 lead a project through their own physical and cognitive (dis)abilities.

**Outcomes and Impact**
(Outcome) the consequence of decisions made during the design project and (Impact) the after-effects of those decisions to the final design. They are the end results of a process submitted for handover and ready for use. As it was mentioned, different approaches work to improve the lives of users from systemic changes to individual/localised ones; From deliberative democracy within a community (Sanoff, 2010) to the feeling like a project was designed “just for me” (Thomas & McDonagh, 2013, p. 3). Practitioners reported that thinking about inclusive Outcomes and Impact were significant parts of the early design stages and guided the project throughout. The aspects also illustrate its effect across each theme (project development, working as a team, and designing inclusively). This includes optimising, retrofitting, scaling up, gatekeepers, actioning change, and logic of involvement, to name a few. Most notably, the importance of the Outcomes and Impact are reported through iterative loops that support future projects.

**6.3.3. Notions in Action**
Through exploring the notions further, relationships and interactions between them emerge. They work together in action and help support the uptake of inclusion. They function within an entangled
system that involves project development, working as a team, and designing inclusively. To help illustrate their relationships and impact, a model was proposed (Taken from Chapter 6, 6.2.3. Reflections and Limits to Findings).

Most notably, the model highlights that *Proof of Logic* plays a central and key role in the uptake of designing inclusively. Participants also reported its significance and prevalence across the design process, as well as the proposed notions. The Proof of Logic challenges and changes the *Governing Ways of Thinking* and *Project Constraints*. It is not surprising to see these notions together; Since design is a social process, the *Project Constraints* are socially constructed through *Governing Ways of Thinking* that hegemonize design practice (Bucciarelli, 1994; Suchman, 2011). In turn, they frame the *Proof of Logic*, or guide practitioners towards arguing specific issues over others. Given that the *Governing Ways of Thinking* and *Project Constraints* frame the project, they equally influence potential *Outcomes and Impact(s)*.

As part of challenging *Governing Ways of Thinking* and *Project Constraints*, *Proof of Logic* is informed by *Outcomes and Impact* and argues for its improvement. It is informed by past projects, lived experiences, best practices, and cautionary tales. This process creates iterative loops which were found to be intrinsic to designing inclusively.

*Figure 13: Interactions Between Notions when Designing Inclusively*
Proof of Logic also argues for and informs User Accessibility and Involvement. These two notions are paired given their shared central concern for users. Moreover, while accessibility can dominate practitioner concerns (‘tunnel vision’), those who go beyond to involve users equally consider their access requirements and continue to meet accessibility regulations. Proof of Logic also informs these notions through distilled experiences and interpretations into the methods and outcomes of successful participation in past projects. In turn, User Accessibility and Involvement informs the Proof of Logic through regulations, minimum standards, best practices, practitioner experiences, and – most importantly – through the users themselves (or those marginalised by a design).

Chapter 7: Contribution to Practice – Overlay for Designing Inclusively

This chapter answers RQ5 (What opportunities do these findings offer for improved inclusion across a project development process?) and proposes a contribution to practice that intends to support the uptake of designing inclusively. The inquiry and analysis into both theory and practice produced findings that can be transformed to help real-world practitioners who would like to take on or improve their inclusive practices. Sections 2.3.3. and 3.6.1. have already outlined how researchers can propose different contributions that practitioners can use in their everyday to help achieve their goals. This includes guidelines, methodologies, methods, and tools among others (Gerrike et al., 2017).

To develop a relevant and useful contribution, this chapter first relies on the foundations set in Sections 2.3.3. and 3.6.1. to help characterise and construct the proposed Overlay for Designing Inclusively. Practitioners should be able to make use of the contribution as an overlay to their own existing design projects that accompanies them across different stages of the development process. Then, to evaluate the proposed contribution, practitioners who took part in the research, as well as new practitioners from varying disciplines and degrees of experience with inclusion were invited to review and provide their thoughts, recommendations, and concerns. Their testimonials are summarised and reflected on to guide the next steps for future interventions and improvements. From there, a revised version of the overlay is presented.

7.1. Designing the Proposed Overlay

To support the uptake of designing inclusively, a practical contribution was developed from thesis outcomes, and evaluated by practitioners. In this section, the proposal is first introduced through a
few characteristics, concerns, and conditions. Then, the structure and content are described and illustrated to support production of the overlay.

### 7.1.1. Characterising the Overlay

The overlay is designed to support any practitioner with a declared interest in designing inclusively and help them improve the uptake of inclusive practice within their project development process. This section relies on Van der Linden et al. (2019) who recommended several characteristics based on research from practitioners about transferring knowledge from theory to practice. To help produce more suitable contributions to practitioners they recommend that methods should be exploratory, emergent, opportunistic, rhetorical, and risky. These characteristics will help frame the contribution by highlighting driving intentions and goals.

First, it should provide space for exploration and novelty. Outcomes from the thesis are driven by findings from practitioners that supersede initial assumptions distilled from theory. For instance, practitioners could find value in framing their inclusive endeavours through a proof of logic, or discover the different ways that users are involved across the process. The format should encourage an open-ended engagement with ideas to allow practitioners to explore at their pace.

Next, it’s proposed that processes are emergent and derived from putative solutions. Indeed, the purpose of this contribution is to provide recent recommendations from real-world (inclusive) practitioners who’ve taken part in large, reputed organisations and projects that affect thousands, even millions in their everyday – from theme parks, to office buildings, to transport networks. These findings are also paired with practitioners who work within much smaller frameworks which often allow for more experimentation and frequent iterative improvements from one installation (or week) to the next.

This leads into the third characteristic: the contribution is opportunistic and provides several different forms or points of entry for practitioners to engage in the process through their own capacities. The proposed contribution will encourage practitioners into a flexible mind-frame where recommendations are proposed all along the process, but still function independently. As practitioners have reported, some stakeholders only take part within specific sections of the process – those who choose to adopt more inclusive practices should be able to consult the proposed design method along any point of the process. This also implies that the structure and content should cut across the differences between practitioners and offer easily translatable insight. Going further, this suggests that content should account for the potential nuances between reader abilities, responsibilities, interventions in the project, project ecologies, and dynamics with other stakeholders.
Rhetoric is also encouraged to appeal to practitioners, or anyone seeking to learn from the proposed resource. Participants from the research shared several effective rhetoric that help them in overcoming challenges to uptake such as *It is as Much Ours as Theirs* (P2), the *Ripple Effect* (P5), or *No New Barriers* (P6). Indeed, P6 explained that these kind of rhetoric – or commitments – are “simple to accept yet radical in the outcomes and benefits they create for diverse user groups”.

Finally, Van der Linden et al. (2019) suggest that processes are risky; practitioners must risk their time, money, or effort and commit to a method (and its goals). The proposed contribution will acknowledge the impact of continued effort, active involvement, and advocacy for inclusion that are central to uptake. As it unfolds, it will point out exposing (risky) situations and provide recommendations to appease and overcome them. Mainly, insights will explain how to encourage uptake while highlighting the positive or negative ripple effects that can result in pursuing or rejecting certain inclusive practices.

### 7.1.2. Constructing the Overlay

In this section, the overlay is first presented and followed by a description of the content, and process. The content was collated from the different insights that would seem to help practitioners and embody the findings that were formed from this thesis. A diagram is also provided to help illustrate how content was processed from findings into the overlay. A few versions were developed prior to the one proposed below. Changes, alongside the evaluations by practitioners are provided in the next section. As mentioned, the content and form of findings from academia do not always suit practitioners. In the proposed overlay, research outcomes are presented, but differently from previous chapters. For instance, the types of user involvement were presented as a table from most to least involved. Rather than transfer this directly into the overlay, the types of involvement relevant to the proposed stages (early, design, making, and in use) are embedded into each within a commentary about users. This is illustrated in the figure below:
The figure indicates that these forms of involvement are distributed across the process. This parsing is informed by participant testimonials and existing theory about their participation. For instance, in the overlay, practitioners are explained the following: “This [design] stage offers the most opportunities to involve users; to test prototypes, consult on ideas, provide stories about their experiences, work as active team members, and even lead the project. They breathe life into regulations, encourage deeper conversations, and help overcome biases”. These statements are informed by practitioner stories, as well as existing research about user participation. This leads into illustrating which findings were taken from the research and distilled into the overlay. This figure below presents how content from Chapters 4, 5, and 6 were used in the proposed overlay:
In sum, Chapter 4 provided several rhetoric from testimonials and stories that could be distilled into the essence of an activity or experience (i.e. a summary of production issues, or challenges with clients when suggesting more inclusive practices). The *notions and aspects* from Chapter 5 are all used in the overlay – either as their own subject, or to contribute therein depending on their prevalence within the process. For instance, the aspect ‘available time and money’ is used to form the subject ‘Project Constraints’ presented in ‘the Design Stages’.

Finally, Chapter 6 provided insights into real-world practice - such as the four main stages to a design project - and revealed some of the relationships between notions. The *stages* are used to structure the overlay while the *notions in action* are used to first explain, introduce, and illustrate the general proposed process to designing inclusively. Given that the goal of the overlay is to quickly inform practitioners about some of the key parts of designing inclusively, some content from research outcomes was omitted. For instance, the full stories and testimonials from practitioners are not used in order to keep the practical contribution within 2 pages (one page about the notions, and another presenting the overlay). The development process from one version to the next is not provided – practitioners are likely to focus on the final descriptions which are shortened or streamlined to focus on the essence of each. Finally, the analyses using the model of Open Innovation and tables, where practitioners identified the prevalence of each notion across their own processes contributed into the development of the notions in action and proposed stages as final outcomes.
7.2. **Opportunities for Improved Inclusion - The Overlay**

The following section will answer RQ5 which embodies the content distilled from research outcomes and used in producing the overlay.

RQ5: What opportunities do these findings offer for improved inclusion across a project development process?

As it has been criticised that the content and forms of theoretical (academic) literature do not always support uptake with practitioners (Van der Linden et al., 2017), the proposal below is streamlined; devoid of academic jargon, and exhaustive referencing to publications and participant testimonials. This section is divided into each of the four stages (*early, design, making, and in use*), followed by the overlay as it was presented to practitioners.

### 7.2.1. The Early Stages

The early stages involve defining the strategy and preparing the design brief. This includes understanding client requirements, the business case, and developing design criteria (objectives, goals, ...). It should be clear that taking on an inclusive approach is an active and continuous effort. Designing inclusively often challenges established design processes and involves negotiations with clients and team members. It is important to join the project from outset. This allows more time to discuss with stakeholders and embed inclusive criteria into the project constraints. Early involvement can help to learn about key concerns and presumptions that team members may have about including or considering marginalised users.

It is particularly useful to develop a Proof of Logic. To compel clients by explaining the value of inclusion through their priorities (often improving the business case). Proof of Logic can take shape as a portfolio of ideas and information that blend human values with business incentives. This includes research on gaps in the market, social climate, and case studies that explain best practices, or cautionary tales. Clients are also encouraged through ripple effects. Positive ripple effects include transferable benefits of a solution for one user to another. Negative ripple effects highlight the reputational or financial damages from neglecting specific users or restricting access.

Users are not traditionally involved in early stages – they may not have the skillset to negotiate and confront others in a design setting. Instead, practitioners often refer to users’ lived experiences within their proof of logic to explain the positive effect of inclusion, and negative effects of exclusion.

Some inclusive objectives include barrier free access to services, a range of offers to provide experiences of equal quality for different bodies and minds, ensuring the safety of users within the
broader context of their lives, and futureproofing (maintaining good access and inclusion years after the project is launched).

7.2.2. The Design Stages

The design stages focus on concept development. This includes exploring and researching the subject, drafting designs, and developing and testing prototypes. These stages are guided by the project constraints, and expectations set in the early stages. Practitioners rely on past projects, examples, and their own skillsets to create ideas. Concepts are also refined to meet regulations (including accessibility standards). Design stages determine spatial planning, include design reviews with clients and team members, and set overall project specifications before sending a design into production.

Just as the early stages, design stages involve negotiations with others, and working alongside gatekeepers – those who decide whether an idea can move forward. The Proof of Logic is useful to argue the value of user involvement and including the concerns of marginalised groups. Designs that consider more access requirements or human values often suit broader audiences. A Proof of Logic can show how transferable benefits are scaled up and strengthen the business case.

The design stages offer the most opportunities for impactful inclusion and user involvement. Users can take part in different ways – to test prototypes, consult on ideas, provide stories about their lived experiences, or work as active team members or leaders on the project. Their experiences can help bring accessibility guidelines or regulations to life and make sense of real-world issues. Including more than one user can encourage deeper conversations, building on shared experiences, issues, and solutions. Their involvement helps practitioners overcome ability biases: centring the design on our own abilities rather than those of real users. Often, practitioners are worried about ‘getting it wrong’ or offending marginalised users during involvement, but that feeling usually subsides within the first interactions.

To recruit, it is useful to speak with clients as they may already interact with their users. Equally, local councils are often aware of different groups and organisations within their communities. Sometimes attending the site and speaking to people in the area can also help gain a sense of user requirements. Caring services, local schools, and other community services can guide practitioners towards suitable participants. Sometimes, it is quite difficult to attract or reach out to those most marginalised or unheard. In these cases, the design team can consider a recruitment agency. This requires very clear criteria to help identify the right users, and expect delays to identify and entice users to take part. Once involved, it is important to think about user participation as a whole; if they
take part in person, how do they travel to and access the workspaces, will they be able to communicate effectively, do they require assistive technology, are there accessible toilets?

Most importantly, it should be clear how participants are compensated. If they are considered equal experts and team members in the project, are they contracted in the same way? Many users expect compensation – their time should be valued. Local organisations, or the users themselves can help navigate how contracts interact with their social benefits or universal credits. There are some alternatives such as gift cards, rebates, or donations. These should suit users and reward them whilst complying with any ethics requirements from academic work and guidelines for Research and Development funding.

7.2.3. The Making Stages

The making stages focus on construction, manufacturing, and production of the design. Usually, analyses, prototypes, and tests are complete. Construction and manufacturing teams are commissioned and receive a design programme (specifications, manual) to fulfil their mandate.

Some practitioners explain that the project is handed over without any further involvement. Others take part to resolve any issues reported by production teams. They may also subcontract specialists to overview progress. In addition to their own expertise, whoever is involved to keep track of progress should understand the project objectives, be able to negotiate with production teams, report on progress, and document changes. They work to ensure design (and inclusive) specifications are not compromised.

These issues are often oversights – either from the production or design teams. Production oversights include changes or errors done during production such as the use of wrong materials, streamlining a design to cut costs, or implementing alternatives that do not meet accessibility standards. Amendments may not appear significant, but could influence the overall look, feel, enjoyment, or integrity of a design. Design team oversights are usually errors in the design programme. Some projects include large and complex manuals and procedures that guide the process through years of construction and manufacturing. There may be errors in guidelines that compromise a design. This includes miscalculated dimensions or tolerances, proposed materials that do not meet requirements, and other gaps that naturally occur when a design shifts from theory to practice. Manufacturing and construction teams are contracted to fulfil the project as it has been presented. Without continued open communication, the design may fail – practitioners are not aware of issues, and production teams are not held accountable for issues made in the design programme.
Opportunities for inclusion during making stages differ for each project. Some offer more open and continuous communication with stakeholders (usually construction projects), while others are the technical production of a design without involvement (usually manufacturing projects). Either way, practitioners should try to keep track of proposed changes or amendments to the design and reflect on issues highlighted by production teams.

7.2.4. The Design in Use

By this stage, the design is completed as is either in process, or has been handed to distribution, marketing, and management teams. Their strategies should continue to embed inclusion and influence decisions after project development. Practitioners should try to handover whilst highlighting the importance of targeting marginalised users: Maintaining inclusive upkeep of the design, and providing inclusive support. Practitioners are focused on assessing the outcomes and impact of their inclusive practices. They identify how the inclusive criteria manifest in the final design. This can feed into their Proof of Logic and support future projects.

Users from marginalised and unheard groups can take part in different ways. They may be real-world users who provide feedback on the final design or take part in shaping and maintaining an inclusive future for the building, space, service, or product. Importantly, strategies should continue to develop and improve the inclusive qualities of the design. Some designs intend to serve users for years and decades. Over that time, understandings of inclusion and its priorities can change. Those who use and manage the design should react accordingly.

7.2.5. The Overlay

The overlay is presented in two pages – a first introducing the document and presenting the notions, while the second focuses on the overlay. They are complementary pages that each explain a broad understanding of designing inclusively as well as specific recommendations, insights, and cautionary tales to its practice. They are designed to function independently so practitioners can opt to only use the overlay, presented in a single page. Practitioners are first introduced to the document as follows:

Introduction

The general idea of designing inclusively is to involve (to participate, or listen to the voices of) those who are most often marginalised by existing designs. The model below presents a set of notions that emerged as prevalent parts of designing inclusively. They were formed through interviews with practicing designers, planners, and architects attuned to inclusion in their own practices.

The model highlights two parts of the project development process; User centred, and project centred notions. Together - with other project-specific parts of the process - they produce a design outcome with a rippling impact on those who interact with it in their everyday.
The idea of a Proof of Logic was formed; a key part of designing inclusively and its uptake in real-world practice. Further details on the notions are presented on this page, and worked up into recommendations that can overlay a broad spectrum of practices (architecture, UX/UI, industrial and manufacturing design, ...) and contexts (public spaces, buildings, services, and products). Hopefully this can help with taking on more inclusive practice in project development processes.

First, designing inclusively is described, focussing on involvement, and overcoming marginalisation. Then, the concept of notions is explained looking closely into “Proof of Logic” as a distinct contribution from research outcomes. This was highlighted centrally by practitioners during testimonials and further inquiries. The evaluation of the overlay will look at whether an enthusiasm and understanding of this notion is also shared by others. Practitioners are then presented the notions in action alongside their descriptions:

**Figure 16: Excerpt from Page 1 of the Overlay**

Practitioners then turn to the second page: the overlay and are explained that:

This sheet is presented as an overlay to your own design development process to help take on more inclusive practices when developing public buildings, spaces, services, and products. The insights can be used independently or together along different stages of the process. They are not presented in a specific order and should be used to suit your needs, roles, and responsibilities. Hopefully this overlay can help with taking on more inclusive practice in your project development processes.
It’s made clear that practitioners across different disciplines, expertise, processes, and affinities should be able to use the overlay in some way that supports the uptake of designing inclusively. Next, they are explained that iterative loops are a key part of the process – to support a growing Proof of Logic. Finally, columns for each stage describe the main activities and different considerations made to support inclusive practice. Each column has different subjects, but ‘Users’ are the first addressed in each (see below):

**Figure 17: Excerpt from Page 2 of the Overlay**

The next two pages present the overlay given to practitioners to conduct the evaluation.

**Figure 18: The Proposed Practical Contribution (Overlay)**

(See below, pp. 153 – 154)
Designing Inclusively | Notions

Introduction
The general idea of designing inclusively is to involve (to participate, or listen to the voices of) those who are most often marginalised by existing designs. The model below presents a set of notions that emerged as prevalent parts of designing inclusively. They were formed through interviews with practicing designers, planners, and architects attuned to inclusion in their own practices.

The model highlights two parts of the project development process; User centred, and project centred notions. Together - with other project-specific parts of the process - they produce a design outcome with a rippling impact on those who interact with it in their everyday.

Notions in Action

User Accessibility & User Involvement

User Accessibility
The abilities needed to use a building, space, service, or product. Includes (dis)ability needs and other protected characteristics (such as race, gender, and sexual orientation). At a minimum, designs comply with regulations to be ‘technically usable’. They can be improved by addressing the quality of different users' experiences according to their bespoke needs or requirements.

User Involvement
To take part in a project as someone who uses or interacts with the design outcome. To listen to or include (the concerns of) those using a design or who are affected by it in their everyday. Often involves including (the voices of) marginalised individuals, or group representatives.

Proof of Logic
Proving how the involvement of inclusive perspectives will add value to specific or overall design goals. To evidence with statements or inferences deemed valid to those involved in a design project, or compel with reasons that demonstrate value to the design. Design goals may include: to strengthen the business case, gain a larger client base, create a more reliable product, or create innovative and thought-provoking designs.

Governing Ways of Thinking & Project Constraints

Governing Ways of Thinking
Well established mentalities that motivate peoples decisions. Widely shared values and expectations (status quo, normative thinking). They frame how something is perceived, and shape our assumptions. They are not inherently against inclusion, but “traditionally” marginalise some groups (ex: people with (dis)abilities).

Project Constraints
The imposed restrictions to a project plan; includes budget, timeline, processes, requirements, values, and participant availabilities. Constraints guide a project forward to frame its opportunities during the process, and (estimated) outcomes.

Outcomes and Impact
Some turning points in the process change project outcomes and affect whether inclusive goals are met. These vary from large access issues, to small oversights. It can be very useful to explain the impact or after-effects of decisions to ensure a good design.
7.3. **Evaluation**

The overlay was evaluated to help assess whether it effectively provides opportunities for practitioners to improve the uptake of designing inclusively within their own practices. Those who took part reported on the clarity, relevance, and value of the overlay through a combination of emails, text correspondences, and semi-structured interviews. The full methodology is provided in Chapter 3 (Section 3.6.1).

The evaluation first consists of a preparatory stage within which academic researchers and the pilot study participant (PS1) helped to validate a draft of the overlay presented above. Then, two of the participants from the initial study (Chapter 4) provided their thoughts whilst six new participants from varying disciplines (within the design of public buildings, spaces, services, and products) and degrees of experience with inclusion shared their views on the overlay.

7.3.1. **Preparing the Overlay**

Before presenting it to practitioners, the overlay was subject to a few iterations with different academics, and the initial Pilot Study Participant (PS1). A first version was presented at a meeting with the DesignxResearch lab (Prof. Ann Heylighen) from KU Leuven, who are recognised for their contributions to the field of inclusion. Several of their publications are used in this thesis. They provided minor recommendations that were proposed and embedded to highlight specific content. Namely, although the concept of ‘iterative loops’ was presented in the last stage (design in use), they proposed that it should be seen as an intrinsic part of every stage – since some practitioners may not work within the final stages of the design. They also recommended that the overlay could be developed into a much larger manual that included case studies and testimonials to provide further context for practitioners. This could be reminiscent of Jones (1992) which includes a first overview of different methods, guidelines, strategies, and tools before explaining each in detail. Although their proposal aligns with this research and the view that stories can breathe life into findings, the overlay was initially designed as a brief overview that could be rapidly consulted to acknowledge real-world limitations; namely, a lack of time and resources to investigate deeply (P2, Heylighen et al., 2017; Van der Linden et al., 2019).

From their recommendations, a comment on iterative loops was added across the entire process, and the new version was presented to the pilot study participant. PS1 provided a few thoughts to streamline the document as they felt there was too much text on each page. Considering this, some of the examples and formatting were reviewed or removed to improve overall flow. They also felt that the columns were difficult to read and differentiate. A background colour was added to each column that corresponded with the proposed colour for each stage. This seemed to better divide the
page and improve readability. From there, the overlay was ready for evaluation with practitioners. The next two sections present and reflect on comments from testimonials with them.

### 7.3.2. Evaluating the Overlay

All six participants from the initial study were contacted to take part in the review and evaluation of the overlay. It was sensed that their insights could help determine whether the content was helpful, robust, and representative of their practices and findings. Participants were asked to update on their practices and discuss the points outlined in Chapter 3, namely: *is the overlay clear and readable, is the content relevant and useful, does the overlay seem valuable to practitioners, and is there anything missing?* Due to availability and workloads, two participants were able to contribute (P1 and P2).

Next, a few other practitioners were asked to provide their views. In total, 17 were contacted, and 6 took part in the evaluation (to mirror the number of initial participants – Chapter 4). They all work in the design of public buildings, spaces, services, and products. Each holds different responsibilities, disciplinary expertise and levels of experience working with inclusion. Some declared that inclusion was important and embedded into their process while others found that inclusion was most often completely absent or overlooked. Just as the initial research participants, these practitioners were also asked about their own work and to discuss the points outlined in Chapter 3 (Section 3.6.). A description of their roles, clients, point of contact, and degrees of experience was presented in Section 3.6. Below, an overview of their disciplines and levels of experience is provided, followed by a summary of the comments and suggestions for each point (clarity, relevance, and value).

This evaluation was designed to assess the overlay through the perspectives of different practitioners from several disciplines and varying degrees of experience with designing inclusively. The two tables below show that practitioners offer their views from 4 areas of design and a balance of degrees of experience – from significant, to little or none:

<table>
<thead>
<tr>
<th>Discipline</th>
<th>P1</th>
<th>P2</th>
<th>P7</th>
<th>P8</th>
<th>P9</th>
<th>P10</th>
<th>P11</th>
<th>P12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Architecture (3)</td>
<td></td>
<td>x</td>
<td></td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Industrial / Product Design (3)</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Interior Design (1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>UXUI Design (1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Table 27: Overview of Disciplines, by Participant*
<table>
<thead>
<tr>
<th>Level of Experience</th>
<th>P1</th>
<th>P2</th>
<th>P7</th>
<th>P8</th>
<th>P9</th>
<th>P10</th>
<th>P11</th>
<th>P12</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Past Participants (2)</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Significant (2)</td>
<td></td>
<td>x</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Some (2)</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Little to none (2)</td>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Table 28: Overview of Level of Experience with Inclusion, by Participant*

**Clarity:** Are you able to open the document, and read it easily? What are your first impressions, does the overlay make sense to you? Do you understand the terminology, how does it relate to your practice / field?

**P1**
Document looks great.
Consider using “disability” rather than “(dis)ability”. Aligns better with Social Model of Disability, and Equality Act; Audience may not understand the nuance. May be useful to acknowledge differences across regions (i.e., disabled people versus people with disabilities).
The model that explains notions could clarify use of dotted lines. The intent is understood, but maybe clearer way to explain their relationships.

**P2**
Very clear introduction that makes it exciting to read further.
Consider consistency with language – using terms like “impact” rather than “create change” to allude to the notion “Outcomes and Impact”.
Consider adding details about how users take part and provide examples to inclusive objectives.

**P7**
Excellent Document!
It was asked if the term “Proof of Logic” was connected to crypto where terms like “proof of work”, “proof of stake”, “proof of personhood”, “proof of reserves” are commonly used. The term “stuck out” but this was seen as very positive.

**P8**
The document was really good, everything is quite clear and compelling.
Some sections were found to be a bit “stockily” written (wherein some text is cut out to condense). Could be written as a conversation to improve flow.
Consider if the subject “User” could relate more to the notions by renaming as “User Involvement”.
The arrows between notions are quite useful, but do not feel quite explicit or clear enough as an overall image. Perhaps splitting into two sections – a first diagram to illustrate that then calls to a body of text explaining each notion.

**P9**
Overall very clear, and makes sense as a single document.
The second page (overlay) could be split into several pages, perhaps a lighter summary page of the overlay, and others for each stage of the process. Although, it also shouldn’t become a text heavy manual; practitioners would not use it.
The visuals are already strong, but there could be further development to visually compel practitioners who often aren’t interested in text.
Perhaps develop a more simplified representation of the notions in action.

**P10**
Really good and works very well. It’s clear that this is in its final edits.
The language feels very familiar as someone who works in inclusion.
It’s unclear how the notions work in action – the “Proof of Logic” is the strongest and novel contribution to the work. The diagram of notions does not emphasize this as much as it could. It could also be reviewed to emphasise the importance of loops that build through the notion.

If handed to clients, select a single term rather than hyphenated terms or parentheses. Provide a clear argument without ambiguity.

P11

Everything feels very clear and refreshing to see in an easily accessible way.

The overlay feels finished, a bit text heavy, but that’s much better than having a manual or several pages to navigate when trying to call for inclusion during meetings.

The intro is very clear but could be more compelling. Consider explaining the context (what is inclusion, and who is this useful for) then emphasising the ripple effect and proof of logic as a central component.

It wasn’t clear how the model worked. Are the interactions between notions cyclical (as the arrows suggest) within a single project, or an overall look at the process in general? Proof of Logic is obviously central, but that doesn’t shine through as much as it could.

P12

Very easy to read – nothing difficult to understand.

When printed in black and white, the rectangle for Proof of Logic disappears – becomes difficult to read the model.

It’s not clear why some arrows are higher or lower than others in the model about notions.

Table 28: Summary of Thoughts and Recommendations About Clarity of the Overlay

In summary, participants found the document easy to read, clear, and provided some recommendations to improve clarity. In the first page (Notions) it is suggested that the introduction could focus more on the ripple effect and proof of logic as central to the contribution. The content within the model of Notions in Action was understood, but several suggested reviewing its presentation. P12 reported that the one block was not visible when printing the document in black and white. Participants all somewhat understood the arrows and actions therein but were not able to easily visualise how each notion interacted. They may favour a version of the design proposed in a previous draft which illustrated the notions, and provided explanations on the side (example below):

Figure 19: Draft model of the Notion in Action
The second page (Overlay) was deemed complete and very clear. Although, some proposed stretching the content across several pages rather than one or developing into a larger manual. It was suggested that practitioners may not enjoy the volume of text presented in one page. However, it was also argued that a single page is more effective and much easier to present to team members or clients. It was imagined that the overlay could be left on the table or pinned on the wall to easily access. P11 suggested that it could be extended into a poster size which could help as a unifying reference posted on the wall in an office. In this case the text may not seem as ‘daunting’.

A few comments were made on the terminology. First, although some keywords were foreign to them, all practitioners were able to easily understand through the accompanying explanations and easily translate them into their own disciplinary jargon. This was sensed as a key contribution to P8 suggested changing the title ‘User’ to ‘User Involvement’, while P1 recommended using ‘disability’ rather than ‘(dis)ability’ to avoid any confusion and align more closely with existing legislation (i.e. the Equality Act). P10 also recommended selecting a single word rather than providing several within a parenthesis or brackets. This could provide a clearer intent if the overlay is used with clients to convince them towards more inclusive practice.

Relevance: Is the overlay applicable to your practice? Does anything feel particularly notable or new? Is there anything less relevant to you? Do you think something is missing?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>P1</strong></td>
<td>Questions whether “Whilst users are not always involved, should the overlay insist that they are?”. It is all very clear, but examples of case studies and examples could be developed in supplementary sheets that would demonstrate how different parts of the overlay are applied in practice. Could add to the relevance and value of the piece for practitioners.</td>
</tr>
<tr>
<td><strong>P2</strong></td>
<td>Everything is well articulated and carries the weight of the ideas.</td>
</tr>
<tr>
<td><strong>P7</strong></td>
<td>Perhaps adding a comment about the supposed shelf life of the product being designed from outset of process. Extensions and plug-ins can be added into a design after launch. This can create a more flexible software that allows user community to improve the design, rather than the intimidating task of “getting it right the first time”. In some cases, the most inclusive solution involves open-ended and minimal requirements to allow a near infinite number of loops which is quite different from product design and architecture. Sometimes it is more important to argue “how important is it that we get this right, right now” to help build a case that supports the Proof of Logic.</td>
</tr>
<tr>
<td><strong>P8</strong></td>
<td>The Ripple effect was very compelling – and even worth emphasising further. Maybe by adding to the first page or removing “active and continuous effort” to allow more space. The “Proof of Logic” is excellent and could be brought above “Joining from Outset” to promote its value (just below “User”).</td>
</tr>
<tr>
<td><strong>P9</strong></td>
<td>It’s very relevant because our design processes do not produce the most inclusive spaces. We rarely introduce users and rely instead on stereotypes. It was done once and this really helped identify oversights that we could have easily overlooked. Clients often expect us to be experts in user experience – regardless of user. Follow-up with clients would be a blessing and it is amazing to see this here. Consider how they gain feedback. Perhaps there isn’t enough time to consult in person, but even questionnaires or</td>
</tr>
</tbody>
</table>
short forms could provide precious information about doing better. But firms may not want to hear about the issues or ask clients to pick the design apart.

P10 Content is perfect; “Loops” at the top are very helpful and clearly show that it is an iterative process along every stage. What’s really strong is the circle of thinking and how the “Proof of Logic” foster novelty, change, and innovation.

Emphasis on the early stages (the width of the column is wider than others) is particularly important and true. The attention it deserves to shine through.

P11 It seems really relevant and especially impactful since everyday (relatable) issues are blended with inclusion. There’s more cohesion that can lull practitioners into taking on inclusion since it appears already well blended into something that’s well known.

Although a design process isn’t in four stages, the descriptions and titles make it very easy to situate them and apply regardless of specific projects or processes.

The idea of loops and ripple effect are immense to arguing the value of inclusion.

P12 Particularly struck by information on users – how they are involved, recruited, and compensated. Demonstrates how they can take part for someone who normally only works on personas or through the essence of client intentions. In the early stages, users are not involved, but could they?

Table 30: Summary of Thoughts and Recommendations About Relevance of the Overlay

Participants found the overlay relevant to the prospect of designing inclusively and able to easily apply the concepts to their own practice. P11 explained that a blend of relatable and novel content would ease practitioners (and their team members) into inclusion. The four stages were not challenged; although they may differ from their own processes, each was easily able to transfer them onto their own processes. P10 noted that it was especially relevant to find more content in the early stages as this is often key to improving uptake in their practice.

P1 and P2 provided little feedback apart from the approval that it reflected their thoughts well. P9 and P12 – who were less experienced with inclusion – found the recommendations about users particularly notable and helpful. Practitioners who were somewhat or very experienced found the concept of ‘Loops’, ‘Proof of Logic’, and ‘Ripple Effect’ particularly impactful. They were especially compelled by the ‘Proof of Logic’ which was characterised as novel and particularly central to designing inclusively. They comprehended the notion as a way of arguing for their efforts. “Logic” thus embodies their understandings and the underlying rationale for their advocacy of inclusion as an important and intrinsic part of their design process. In this case, they provide arguments, reasons, examples, and justifications that prove this logic. The term “Proof of Logic” functions within their vernacular and is reported as both novel yet intuitive to the participants.

Otherwise, a few questions were asked that highlight some of the more complex parts of designing inclusively. Namely, P1 challenged whether the overlay should insist that users are always compensated in some way. P12 asked whether users could be involved in the early stages as it was noted that they were “not usually involved early on” and did not provide information on their
participation. P7 asked if the overlay should articulate that solutions are not always right, but right for now. This suggests that practitioners can attempt to improve their practices without assuming that they must achieve a ‘perfect solution’. Although, P7 also recognised that the field of UXUI is more amenable to continued changes (extensions, updates, and plug-ins) that allow a more community-driven and iterative process, unlike the design of buildings, spaces, and products. Finally, P1 also wondered whether an extended document could provide case studies and examples of best practice to help practitioners better relate to the content proposed in the overlay.

Value: Does it seem useful to you? How would you use it? Can you imagine yourself using this, or does it need changes? Who could make use of the overlay? Are there any oversights or alternatives to recommend?

P1 It’s very palatable for designers and architects. The language is clear and the concept of “Proof of Logic” is clearly central to the work – which seems to be the goal (in part).

P2 The last sentence about Proof of Logic is particularly helpful to understand the added value. Some practitioners may not be as willing the read through and understand the overlay with as much detail. A lighter version could be considered.

P7 The overlay is clearly designed for those who are passionate about inclusion and want to champion it within their work. It’s important to consider storytelling as part of the learning process. These aren’t exclusive to edge case scenarios, but as part of the commonplace. “Proof of Logic” could help practitioners believe that other stories exist in order the help champion the approach in all its forms.

P8 Perhaps the introduction could introduce the intended practitioner – although this would work best for specific disciplines. The general lines of inclusion are very well drawn, and practitioners should easily be able to find themselves within the overlay. It could even be used to guide both client and practitioner together. This would foster a shared understanding of inclusion as the project goes on.

P9 “Overlay” is the perfect term because it presents inclusion as a layer that can fit within the existing process rather than forcing clients into new ways of working. Visual representations could entice practitioners if this is imagined as a manual rather than a single page. Designers wouldn’t want to read a full page of text as much as enjoy a visual representation.

P10 This has value for anyone with an interest in taking on inclusive practice. It can work across several fields but could be seen to lean towards architects and designers who adopt more traditional design processes.

P11 What’s most interesting is how – although users are involved in our projects – they aren’t valued this way. They are seen as biomechanical rather than individuals with feelings who navigate their worlds. The overlay can help convince more technical team members who may not relate to these values. It clearly presents the added value to designing inclusively. It’s particularly valuable as a single page. Easy to imagine on the desk or handed over to team members during a meeting. The narrative that is flexible and amenable is less intimidating. Rather than a step-by-step process, practitioners feel free to take on what works for them a build up at their own pace.

P12 Easy to relate the content to current practice. Assumes that others will focus on different things depending on their projects but enjoys having access to broader scope rather than framed to a specific level of experience or type of project. Is interesting in experimenting with new concepts such as asking questions about inclusion to those they subcontract for product manufacturing.
Really relevant in current form but language could be tweaked and more direct (less academic).

Table 31: Summary of Thoughts and Recommendations About Value of the Overlay

The term overlay was mentioned to accurately describe the contribution (P9). It provides a non-intrusive support to existing processes and practices. P8 notes that it would be easy for practitioners to situate themselves thanks to the different stages and identify gaps that suit their work. P11 adds that the overlay is more accessible to practitioners as it can help build up an inclusive practice rather than prescribe a rigid procedure. Although, P10 found that it could be useable by different types of practitioners but assumed this was more closely relevant to designers and architects.

Practitioners found the overlay easy to relate across different practices. P12 saw value in learning about inclusion in ways that could both directly and indirectly affect their work. P11 found this could be particularly helpful to entice team members into inclusion – especially those focused on technical aspects such as engineers, or even financially-driven clients). Indeed, P8 wonders whether this could be used as a tool to develop shared understanding between client and designer – to help accompany them along the process and understand how inclusion can fit into each stage.

Several participants were compelled by the ‘Proof of Logic’. They stated it as a central contribution to the work and as way to persuade practitioners about the added value of designing inclusively. P7 adds that both edge cases and commonplace examples can serve within the proof of logic to allure others into the uptake of inclusion.

P8 noted that the overlay could be transformed into a larger manual – but that it would need to be visually compelling rather than provide text which may not interest practitioners. This could be combined with storytelling to support a learning process (P7).

7.4. Reflections and Next Steps

Section 7.3 Presented the participants and their thoughts and recommendations about the clarity, value, and relevance of the overlay. This section will explore further to critically reflect on their statements and negotiate the tensions between varying perspectives. This will lead into a few overall recommendations towards next steps before presenting a final draft of the overlay.

7.4.1. Reflections on Collected Data

Although data was collected under three main themes (clarity, relevance, and value), overlaps between practitioner recommendations lead to reflect on the data as a whole.
First, the overlay was deemed clear and easy to understand. There is a reported flexibility in its use and the concepts therein are easily translatable into practice. The overlay seems to apply to a broad array of different practices, although it was noted that the language and format may favour designers and architects specifically. Indeed, participants worked exclusively within the field – with some variations to the roles, projects, and responsibilities. UXUI designers provided the most nuance which reflects the realities within their field. Projects are more iterative and practitioners (as P4, and P7 report) are accustomed to a more participatory process that engage users in different ways. Designers rely on early launches of the product and smaller audiences to test ideas. After launch, they can continue to improve the design through comments and inquiries from Google Play, The App Store, or the product website. They may also allow for open ended designs that allow the user community to develop their own plug-ins and extensions that enhance the product experience according to specific requirements. It would be valuable to determine whether the concepts apply further afield to practitioners such as urban planners or those involved in large scale planning projects such as territorial (government) policy designers.

Second, although it is a limited sample size, it can be noted that practitioners were captivated by different ideas within the overlay. This could be influenced by their levels of experience with inclusion; wherein practitioners with little to no experience focused on user participation, compensation, and recruitment, while those who were more experienced were interested in Loops, Proof of Logic, and Ripple Effects. Perhaps those who are less experienced focus on the key aspects of inclusion – involving users – and the practicalities of their participation. Otherwise, those who are more experienced have already recruited users during past projects and are more interested in the strategies of improving uptake. Indeed, Proof of Logic, Loops, and Ripple Effects relate to the development of arguments that support inclusive practice and building uptake through effective rhetoric and incentives.

Third, although the overlay was deemed clear and easily understandable, practitioners provided several recommendations. They proposed to review some of the terminology (such as ‘(dis)ability’), the flow of text (to avoid an ‘academic style of writing’), and a more decisive selection of terms (removing bracketed or forward slashed suggestions). A more direct language was said to potentially help entice clients with fewer possible interpretations of some ideas when used during their project development processes.

Fourth, practitioners unanimously agreed that the figure illustrating the Notions in Action should be reviewed. Several proposed that the figure should showcase the Proof of Logic as a central contribution (about designing inclusively) to their design projects. Practitioners were also sometimes confused by the curved arrows that could be interpreted as loops between different notions. They
did not understand whether this functioned as iterative loops within one or multiple projects. A more direct and visually compelling representation is recommended.

Finally, practitioners suggested different alternatives to the format of the overlay to improve readability. This includes, (i) a streamlined overlay linked to additional pages that explain concepts in greater detail, (ii) a full manual including visual representations of each subject, and (iii) accompanying case studies and testimonials of both edge case and commonplace examples. While extended versions of the overlay were suggested, others believed that the current format – although a bit crowded – was best suited as an easy reference, to quickly present concepts and argue inclusion during meetings, or accompany clients through the process of designing inclusively.

Indeed, a manual could provide a deeper understanding of inclusion through compelling examples, guidelines, recommendations, and even statements from participants within this thesis (such as PS’s Let me get There, Let me In, Let me Participate, and Listen). Yet, this would require substantial research through interviews, questionnaires, and census across several design and architecture firms. For now, the overlay is devised to provide an easily accessible reference to support any uptake to designing inclusively – as a short 2-page document.

7.4.2. Understanding and Using the Overlay

Drawing on these results, it is useful to consider the different ways in which the overlay can be used by practitioners as part of their design process.

First, a practitioner can fuse their own design process with the overlay to create a new design process: “A formally specified sequence of activities to be carried out in developing a particular design, or a class of designs, which will often be an application or customization of a methodology to a particular problem” (Gericke et al., 2017, p. 105). The overlay can function as a customization to their process. Although, this implies that the practitioner fully comprehends the content and can embed each of the insights or recommendations provided in the overlay into their own process. Yet, participant testimonials revealed that – regardless of level of expertise – practitioners focussed on some elements of the overlay over others.

Second, the proposed format causes the overlay to sit somewhere between a guideline and a tool. According to Gericke et al. (2017, p.105), guidelines are “statement[s] of what to do when, or what should be the case under particular circumstances, and should only be violated for good reason, with a careful consideration of the consequences”. The overlay provides considerations and insights across the process and guides practitioners towards embedding new inclusive practices into specific stages of the design project. However, practitioners should also feel capable of adapting the overlay or selecting specific insights to support their projects. In this way, and as is explained upon reading
the introduction that accompanies the overlay – it can function as a tool: “An object, artefact or software that is used to perform some action (for example to produce new design information). Tools might be based on particular methods, guidelines, processes or approaches or can be generic environments that can be used in conjunction with many methods” (Gericke et al., 2017, p. 105).

The overlay helps practitioners perform more inclusive practices within their own processes. It is based on everyday design processes as defined by the participants - practicing designers, architects and planners - as well as the testimonials, experiences and evaluations to validate its content and role within their work. The nature of the overlay allows for practitioners to work with it in conjunction with other outlooks, methods, guidelines, and processes to form their own bespoke methodologies. Practitioners can envision the overlay as one of many – seeking to create a new process anchored by their own priorities. Perhaps they combine the insights provided in this proposed overlay with recommendations from ecological design, or objectives set by values presented in the model of Open Innovation (i.e. better product viability, more effective production feasibility, or improved human desirability).

Generally, the proposed overlay can accompany practitioners to raise awareness of what designing inclusively involves, encourage good practice, highlight challenges/or pitfalls, and help reflect on one’s ways of working. It can function in conjunction with the main process and alongside other priorities or scopes. Finally, the overlay could also be considered as a learning companion that practitioners use at their own pace to try and take on more inclusive practices in their design of public buildings, spaces, services, and products.

7.4.3. Next Steps

To support uptake within the frame of this project, revisions are proposed to the overlay to support practitioners within its current format. Changes made include:

- A review of the introduction (Notions) to simplify language and highlight the Proof of Logic.
- A reconfiguration of the figure Notions in Action.
- Revisions to the introduction (Overlay) to simplify language and highlight relevance to practitioners.
- Revisions to content within overlay to improve flow of text.
- Reformatting sections to allow more space within overlay.
- Larger margins between each proposal within the overlay.
Finally, as it was mentioned, a few next steps are suggested, namely:

1. Review the existing document and carry-on as a 2-page document
2. Create a longer document (about 6-10 pages) that is image rich and includes details or examples for each overall stage (1 page per stage)
3. Create a larger manual that could include methods, variations, and cases for each subject.
4. Create several versions of the overlay, each tailored to the specific nuances of different disciplines and project development styles.

The final version is provided below:
Designing Inclusively generally means to involve those who are most often marginalised by existing designs. The model below presents a set of notions that are prevalent when designing inclusively. They were formed through interviews with designers, planners, and architects who are well experienced with inclusion.

The central new idea with designing inclusively is to provide a Proof of Logic: to build evidence and argue for inclusion. It is added into the traditional project development process alongside user-centred (user accessibility and user involvement), and project-centred notions (governing ways of thinking and project constraints).

Together they produce a design outcome with a rippling impact on those who interact with it in their everyday.

Details on the notions are presented on this page, and worked up into recommendations that can overlay a broad spectrum of practices and contexts. Hopefully this can help with taking on more inclusive practice in project development processes.

Notions in Action

Proof of Logic
To evidence with statements or inferences deemed valid to those involved in a design project, or compel with reasons that demonstrate value to the design. Proving how the involvement of inclusive perspectives will add value to specific or overall design goals.

Design goals may include: to strengthen the business case, gain a larger client base, create a more reliable product, or create innovative and thought-provoking designs.

Examples include case studies from best practices, past projects, existing research about inclusion, and current affairs that can show a need for improved inclusion.

Used to Support

The Project

User Accessibility & User Involvement

User Accessibility
The abilities needed to use a design. For example, disability needs and protected characteristics like race, gender, and sexual orientation. At a minimum, designs comply with regulations to be ‘technically usable’. They can be improved to address the quality of different users’ experiences according to their personal needs or requirements.

User Involvement
To take part in a project as someone who uses or interacts with the design outcome. To listen to or include the (concerns of) those using a design or who are affected by it in their everyday. Often involves including the (voices of) marginalised individuals, or group representatives.

Governing Ways of Thinking
Well established mentalities that motivate peoples decisions. Widely shared values and expectations (status quo, normative thinking). They frame how something is perceived, and shape our assumptions. They are not inherently against inclusion, but "traditionally" marginalise some groups (ex: people with disabilities).

Project Constraints
The imposed restrictions to a project plan; includes budget, timeline, processes, requirements, values, and participant availabilities. Constraints guide a project forward to frame its opportunities during the process, and (estimated) outcomes.

Outcomes and Impact

Outcomes and Impact

Some turning points in the process change project outcomes and affect whether inclusive goals are met. These vary from large access issues, to small oversights. It can be very useful to explain the impact or after-effects of decisions to ensure a good design.
Designing Inclusively | Overlay

This overlay is designed to help take on more inclusive practices when developing public buildings, spaces, services, and products. Use these ideas together or individually and in any order according to your needs, roles, and responsibilities. Hopefully this overlay can help with taking on more inclusive practice in your project development processes.

**Loops:** Each stage should be studied to learn more about the uptake of designing inclusively. Identify enablers and barriers around User Involvement and Accessibility, Project Constraints, Governing ways of thinking, the Outcomes and Impact of the project. Think about how the project, and team members actions support inclusion. Build a Proof of Logic to incentivise stakeholders during future projects. It's an iterative process (loops) that builds from one project to the next.

### Early Stages
Define the strategy, prepare the design brief. Meet with clients and set design criteria.

**Users:** Not usually involved early on. Often lack the skillset to negotiate and confront team members, but can be supported by facilitator within the team. Otherwise refer to Proof of Logic, testimonials about lived experiences, and positive or negative ripple effects to argue their participation in the next stages.

**Join from outset:** Take part as early as possible to allow more time to discuss with stakeholders and embed inclusive criteria into the project constraints.

**Identify established practices and processes.**

**Concerns or presumptions:** Support stakeholders who may have concerns or presumptions about including (marginalised) users.

**Build a proof of logic:** Compel clients to value inclusion through their own priorities (ideas and examples that blend inclusion with business incentives). Rely on market gaps, social climate, and examples of best practices or cautionary tales.

**Highlight ripple effects:** Positive ripple effects like translatable benefits from one user to another and negative ripple effects like reputational or financial damages from restricting specific users.

**Active and continuous effort:** Stay attuned to inclusion and promote it at each stage.

**Inclusive objectives:** Examples like barrier-free access to services, offering equal quality of experience for different bodies and minds, user safety, and future-proofing (maintaining good access and inclusion years after project launch).

**Consider tiered advice:** practitioners often provide 3 tiers of inclusion: (1) minimum requirements, (2) best practices, and (3) Long term - sometimes radical - changes. Keep their lines blurred to encourage clients past the first tiers.

### Design Stages
Explore and research the subject, draft designs, and test prototypes.

**Users:** This stage offers the most opportunity to involve users; they can test prototypes, consult on ideas, provide stories about their experiences, work as active team members, and even lead the project. They breathe life into regulations, encourage deeper conversations, and help overcome biases.

**Project Constraints:** Designs are often framed by current product range, budget, regulations, established practices and process, and staff skillset, or availabilities.

**Gatekeepers:** Identify team members and clients who influence how a project moves forward. Incentivise them to involve users.

**Translatable benefits:** Identify how inclusive solutions can benefit broader audiences. Argue their business appeal.

**Recruiting:** It is not always easy to recruit. Consider attending site and neighbourhood visits to meet the community and reach out to clients or local councils who may already know of relevant community groups. Agencies can also help, but require time to recruit, and very clear selection criteria.

**Compensation:** Speak to users, or community groups to learn how short contracts interact with some users' social benefits, or universal credits. Think about the tension: if participants are equal members, are they paid equally? Consider donations, rebates, Per diems, or gift cards as alternatives.

### Making Stages
Construction, manufacturing, and production. Fulfil the design programme.

**Users:** Involvement is less likely during final production, but users can perform walkthroughs or review final tweaks. Given their skillsets, they could negotiate and resolve issues through their own personal experiences. Facilitating their stories is key!

**Staying up-to-date during production:** Some projects are handed to clients or manufacturers without further involvement (often product and manufacturing projects). Others allow more open communication where stakeholders take part to resolve any issues reported by production teams (often construction projects).

**Subcontracting:** Projects may subcontract specialists to overview progress. Whoever is involved to keep track should understand the project objectives, be able to negotiate with production teams, report on progress, and document changes. They work to ensure design (and inclusive) specifications aren’t compromised.

**Accountability:** Manufacturing and construction teams are contracted to fulfil the project as presented. Without continued open communication, the design may fail - practitioners aren’t aware of issues, and production teams are not held accountable for errors made in the design programme.

**Production issues:** Includes oversights, miscalculations, or shipping and receiving faulty/ wrong materials. To overcome issues, teams sometimes cut costs or choose alternatives that do not always meet inclusion benchmarks. Track changes to ensure they do not compromise the design.

### Design in Use
Design is complete; distributed, or ready for client handover.

**Users:** Real-world users can provide feedback on the final design or help shape and maintain an inclusive future for the building, space, service, or product.

**Maintenance:** Strategies should continue to improve the inclusive qualities of the design. Staff, engineering, and users should continually assess the design - especially those intended to serve for years or decades. Over time, understandings of inclusion can change; Those who use and manage the design should react accordingly.

**Evaluate:** After launch, visit the project and study user behaviour against the intended inclusive criteria. Use this to build a proof of logic and record best practices, failures, or cautionary tales. Relate the outcomes to other key values such as business incentives, user satisfaction, or future-proofing.
Chapter 8: Conclusion

The ethos of inclusion is relatively simple: include the (often unheard) voices and lived experiences of those marginalised by a design into project development. Despite its simplicity, designing inclusively can be rather complex. This includes mismatches between project goals, stakeholder interests and concerns, and knowledge about involving and including marginalised groups. This thesis examined the discrepancies between theory and practice and discussed with real-world practitioners who purport to advocating for inclusion in their respective projects. Through semi-structured interviews, the development of notions, the discovery of underlying themes / aspects, and further analysis, inquiry, and insight, a better understanding about the uptake to designing more inclusive buildings, spaces, services, and products was achieved. Findings were then developed into a practical contribution – Overlay for Designing Inclusively - and evaluated by practitioners with varying roles, responsibilities, and levels of experience with inclusion to assess its clarity, relevance, and value across different types of practice. They helped form a final revised version that can be deployed into practice and accommodate the nuances between practices and project ecologies. The following chapter will close the thesis by providing a brief overview of how the objectives were met, the main conclusions that emerged through the study, thoughts on future work and limitations, and a short personal reflection.

8.1. Objectives and Research Questions

Objective 1: To advance the inclusive design of more accessible environments.

This research formulated distilled understandings of the notions around designing inclusively and recommendations about how to embed these notions into design practice. The theoretical framework was analysed, practitioners were interviewed, and new proposals were devised to provide clearer guidelines to inclusion across several different design disciplines. Findings were developed into an overlay that can be deployed in practice. The evaluation with practitioners leads to suggest that this practical contribution can support the uptake of designing inclusively through its recommendations, insights, and cautionary tales.

Objective 2: To advance disability-led / accessibility-led engagement in design processes.

Researchers reported that practitioners were often worried or concerned about involving specific types of people in their process. There was a fear of ‘getting it wrong’. To advance (dis)ability and accessibility led engagement, fellow practitioners provided their own experiences, recommendations, and cautionary tales about involvement. These are embedded into this thesis which can serve as an initial understanding and foundation to their own proof of logic. Through
iterative loops – working from one project to the next – practitioners can enhance their understandings and personalise their own proof of logic according to their specific disciplines, areas of design, or the ways of thinking that govern their practices. They can also rely on the proposed Overlay for Designing Inclusively that places user involvement and the development of a Proof of Logic as central to uptake.

**RQ1: What are the understandings of inclusion for design practice?**

Through a review of literature, several interpretations of inclusion emerged. Different names – such as Universal Design, Design for All, Participatory Design, and Inclusive Design – each hold a central concern to better involve and advocate for marginalised users in the project development process. Although sometimes complimentary, they are other times paradoxical. For instance, advocating for the broadest possible audience can once again outcast the most marginalised.

In practice, some apply inclusion through well-established regulations and guidelines, such as The Equality Act. Others go further and even provide recommendations to improve real-world uptake. Notably, they advocate for a change in behaviour and actively work toward the greater participation of both users and wider audiences (i.e., people across the whole life-chain of the design in use. They often recommend bespoke solutions to each context and to build on past experiences.

**RQ2: How do practitioners advocate for and navigate inclusion in design projects?**

Practitioners advocate through their roles to embed inclusion mainly as leaders on projects, or through negotiations with gatekeepers. If they encourage user involvement, several forms can be proposed: either users as leaders, team members, consultants, test subjects, mythical users, or quantified metrics. Regardless of how they are involved, users should be supported by facilitators if they are not accustomed to taking part and negotiating within design projects. Practitioners advocate for inclusion through navigating the constraints of the project and identifying or creating opportunities within sometimes rigid frameworks (short deadlines, budgets, and existing processes).

**RQ3: What are the driving motivations and mindsets?**

Projects are mainly motivated by the business case, often to appeal to a broader audience and their potential added value (i.e., improved reputation, benchmarking, of financial gains). Practitioner, team member, or client impressions of inclusion and marginalised users can influence uptake of inclusive practice. Practitioners who advocate for it must often change mindsets and highlight the translatable benefits of broadening the audience to include marginalised users. Those involved should overcome the fear of ‘getting it wrong’ or offending users when they take part. Within the testimonials, practitioners were able to show how inclusion is at the heart of the practice – they are
able to actively create change, innovate through barriers, and develop ideas that push much further than minimum requirements or regulations.

**RQ4: Which parts of designing inclusively are (most) prevalent in project development and in the negotiations and trade-offs within the project?**

Designing inclusively does not exist independently within the design process. It functions within the frames of general project development and team dynamics. These can have a significant influence on the uptake of inclusive practice. Specifically, aspects were identified that seem to support inclusion within the project ecologies – including details about (i) user participation, recruitment, and compensation, (ii) maintaining the inclusive properties of the design after project handover, (iii) involving users (or inclusion) early on, and (iv) arguing a logic of involvement (such as benchmarking, negotiating tensions between bespoke and universal designs, demonstrating reputation, ...). Most notably, the central theoretical contribution and value of this thesis was reported by practitioners as the importance of developing a Proof of Logic, understanding that inclusion involves iterative loops from one project to the next, and to articulate the positive and negative ripple effects of enabling or omitting inclusive practice.

**RQ5: What opportunities do these findings offer for improved inclusion across a project development process?**

Researchers had proposed several recommendations to provide opportunities for uptake within real-world project development processes. Among others, they outline different methodological contributions, and characteristics to effectively entice. Through this thesis, practitioners suggested different forms of opportunities, such as manuals or short documents that tell the stories of practitioners’ experiences. Ultimately (and the central practical contribution of this research), an *Overlay for Designing Inclusively* was created. An open-ended set of insights about designing inclusively across 4 general stages of the design process, designed to improve uptake. According to participant testimonials, the insights therein seem to transfer across different disciplines, projects, roles, responsibilities, and levels of experience with inclusion. Still, there are limits to this broad appeal that have yet to be verified. The research outlook, participants, and theories therein often leaned towards architecture and industrial design more specifically. This leads to limitations on disciplinary nuances, further explored below (Section 8.3).

**8.2. Main conclusions**

- The discrepancy between theory and practice.
Theoretical investigations into inclusion can conclude with open-ended questions or unresolved issues, whereas practitioners must make decisions to launch their designs.

Theoretical proposals about inclusion can appear utopian and unrealistic when attempted in practice.

Theory can focus solely on a single topic or issue, while practice flows within a complex network of stakeholders, interests, processes, and constraints.

It is difficult to create generalisable findings about inclusion given the changing contexts and conditions of projects. This can make it difficult to provide sweeping recommendations across different practices and projects.

**The uptake of designing inclusively**

Practitioners must advocate and often self-motivate to action change and challenge governing ways of thinking. It is a continued and concerted effort to enforce change effectively and strategically.

Practitioners must argue for greater user participation – especially those who are marginalised by designs. Learn about effectively recruiting, involving, and compensating users according to their requirements, and conditions within the project.

Project team members and practitioners should overcome their fear of offending potential marginalised groups by ‘getting it wrong’. They should insist on their active participation (and rightful compensation for time) and facilitate them during the process to amplify their lived experiences.

Uptake is incremental; practitioners can rarely enforce fully inclusive practices and must work to find middle grounds that consider human values alongside stakeholder / gatekeeper interests (often supporting equally desirable, viable, and feasible solutions).

Inclusive practice is an iterative process where the accomplishments from one project support future endeavours.

Practitioners should create a Proof of Logic - develop a strong portfolio of solutions, cautionary tales, inferences, and rhetoric to argue the value of designing inclusively. Examples of rhetoric include ‘Let me Get There, Let me In, Let me Participate, and Listen’, or ‘No New Barriers, Reduce Fuss, and Offer an Equal Quality of Experience’.

Tensions between issues like bespoke and universal should be resolved by assessing the positive and negative ripple effects that one approach or another can create.

**Notions to inclusion**

A series of proposed notions about inclusion can help make sense of the complex theoretical landscape and reflect key concerns within practice. This thesis proposes six notions: Governing Ways of Thinking, Proof of Logic, User Accessibility, User Involvement, Project Constraints, and Outcomes and Impact.

**Aspects to Inclusion**

Inclusion as an overlay on design projects requires an understanding of aspects that fit into general project development, working as a team, and designing inclusively.

General project development involves an understanding of available resources (money and time), existing practices and processes, optimising procedures,
regulations and guidelines, retrofitting, scaling up ideas, and the global and local context of a project.

- Working as a team means that practitioners should understand stakeholder dynamics, institutionalisations, gatekeepers, the negotiation of middle grounds, and the cultural contexts of individual team members.
- To design inclusively, practitioners should understand how to action change, identify presumptions and disability prejudice, maintain inclusive values after project handover, value early involvement, recruit participants, enable participation, and compensate users for their contributions. Practitioners should also develop strong logic of (user) involvement including the impact of reputational damage, the value of benchmarking, the challenges of universalism versus bespoke designs, and the transferability of solutions.

**Involvement**

- The conditions of a project can significantly impact whether users can take part. This includes short timelines, or a reluctance to involve users due to lack of personal experience or knowledge in facilitating cocreation.
- To recruit effectively, practitioners can request users from clients, inquire on local councils and advocacy groups, or hire recruitment agencies. Sometimes, the loudest voices or existing users are less effective than unheard voices and non-users. While they are more difficult to find, those outside the existing scope can help broaden an understanding of inclusive needs and requirements.
- There are different types of involvement. Those recruited can take part as leaders of a project, equal team members, consultants, or test subjects. The requirements of specific users may also be transformed into personas (mythical users) or quantitative values that frame design requirements.
- The Design and Use stages were identified as key moments for (user / non-user) involvement. They often consult and reflect on ideas during prototyping and sketching or are studied after project launch to support future projects. Data collected from their involvement can support the iterative loops of inclusion and inform a stronger proof of logic.
- When given the opportunity, practitioners can take the time before a project is devised and constraints are settled to inquire on users and learn about their requirements. This can support a strong case for inclusive values, goals, objectives, or ethos across the project development process.

**Deploying Findings Into Practice through a Proposed Overlay**

- Practitioners seem to require a clear, simple, yet robust contribution from research that is visually compelling and translatable to their practices.
- The current format is particularly suitable as a companion for practitioners during team member of client meetings, and as a reference that provides multiple layers of inclusion – from involving users, to developing strategies around uptake.
- Many forms are proposed – such as manuals, overlays, guidelines – that highlight the need for a complete and robust Proof of Logic that can support them in their attempts to improve uptake. There is potential for a larger contribution to unfold given much further research and inquiry into practice and practitioners.
8.3. Contributions, Future Work, and Limits

This thesis was an exploratory understanding of current inclusive practice. The research design was devised to inquire on the current practices of designers who purport to designing inclusively within their practices. Through inquiry and analysis, a few contributions to practice and theory are proposed.

- Contributions to Theory
  - The thesis provides a renewed perspective on inclusion and looks across different nuanced approaches unlike before to distil an overarching understanding. This includes research into participatory, inclusive, universal, feminist and accessibility design as well as design for all – among others.
  - Although the term (neo) inclusive design is not an intended proposed contribution, the underlying analysis recognises that a new line is being drawn within research about inclusive design. It acknowledges a form of inclusive design moving towards an even deeper understanding of social inclusion, marginalisation, and disability and their roles in amplifying marginalised voices.
  - The development of notions and aspects built upon both theory and recent (2020-2023) practices bridges the two sources and provides renewed understandings and debate that play a part in our advancement of research into designing inclusively.
  - Finally, a new means of analysis is proposed (pending further validation and verification); the model of Open Innovation was used to help visualise how notions manifest in practice through Building Blocks that matter to practitioners (viability, feasibility, and desirability) and bridge inclusion and innovation. This can serve others as a form of modelling to better understand how their efforts, projects, or objectives fit into these Building Blocks, and the enablers and barriers at play. These enablers and barriers can serve to guide next steps, understand how to overcome issues, or identify the interconnections between different parts of the project or theories.

- Contributions to Practice
  - The summarizing overlay cohesively combines, distils, and shares the multiple perspectives and insights of practitioners who are well attuned to inclusion. It blends up-to-date theory and the perspectives of 12 current practitioners (plus one pilot-study practitioner) together.
  - Just as practitioners described, the overlay can enable them to better practice, advocate for, and visualise prevalent strategies, notions, and aspects to designing inclusively. They’ve reported on ways it can be used as a tool to negotiate with and inform clients, a reminder pinned to the office wall to be used daily at a glance, and as a means of training and educating others.
  - As Chapter 7 mentioned, practitioners with different levels of experience of inclusion focused on different parts of the overlay and were able to learn from it in
different ways. This suggests that the overlay can be read on different levels and relate to an array of knowledge bases in inclusive practice, from novice to experienced practitioners.

- Although framed within the limitations described across the thesis, this overlay also cuts across some of the perceived differences between disciplines. This provides a contribution that can sit within several practices given its inquiry and validation across different theoretical fields, publications, and practitioners.

- Through this participative approach to inquiry and evaluation, participants are already sharing the overlay with colleagues and their broader networks. I (the researcher) have had the chance to present the final overlay to university students, academics, and practitioners from architecture, engineering, and design firms.

Next, further inquiries (future work) could either continue to assess the value of the proposed notions and aspects or continue to test their efficiency as part of real-world practice. Assessment could include further discussions with more practitioners since significant complications arose from accessing projects and designers during the COVID-19 pandemic. Many were reluctant to take part remotely, or unavailable due to significant demands brought onto designers to resolve issues with reopening public spaces, services, and buildings among new (pandemic) safety regulations. Still, six participants provided deeper understandings of practice, sometimes over several sessions, while an additional six practitioners helped to evaluate the proposed overlay. Although the number of original participants is limited, the second wave of practitioners who evaluated the overlay were able to help demonstrate that findings were relevant and applicable across different roles, practices, and levels of experience with inclusion. They found the findings clear, relevant, and easily translatable and useable in their own projects. This includes their understandings of the definitions and descriptions of the proposed notions and aspects. Nevertheless, findings are still limited to the main manifestations of practice that drove both theoretical and practical inquiry; namely architectural and industrial design practice – despite the jumps between disciplinary nuances. While some practitioners sat within other nuances of the discipline (UXUI, Service design, and Interior Design) and still saw transferability, the overlay is not verified longitudinally across their projects, or those of industrial designers and architects. In sum, outcomes do not intend to function across every possible scale, ecology, practice, process, or theoretical grounding within design but provide a kind of tool that can teach, support, and/or guide a wide number of practitioners and researchers through the application and uptake of this understanding of inclusion as framed within the descriptions and evaluations of others.

Going further, research could probe a specific type of practice such as the architectural design of new buildings, the interior design of existing spaces, the design of apps, or the industrial design of
mass-market products, or even the design of policy, or urban planning. Otherwise, inquiries could also broaden the scope of research. This project focussed on public spaces, buildings, services, and products designed by practitioners who advocate for inclusion. A broadened selection criteria could include private residential projects, or practitioners who do not specifically advocate for inclusive practices. This could provide bespoke solutions that translate to public projects, or a better understanding of the barriers to uptake.

Testing could involve a research-through-design approach. Researchers could embed themselves into projects as team members and attempt to design inclusively. They become carriers of knowledge who report on and embody the objectives, rationales, and practices within a project development process. Findings could report on the relevance of this research (the proposed guidelines). Reflections from their participation could also provide clearer frameworks and more refined recommendations. Testing could also focus on the arguments provided to support uptake analysed through the model of Open Innovation. This could reinforce its use as a more established means of analysis.

### 8.4. Final Reflections

The project was set to learn more about designing inclusively and improve its uptake in practice. It was motivated by the proposal that “Good design enables, bad design disables” (European Institute for design and Disability, 2004, p. 1). It associated bad design with a lack of user consideration and involvement along the design process to understand their genuine needs and requirements. It draws particular attention to the mismatches between design and user, especially those most often marginalised by existing designs (Holmes, 2018). The concerns within good designs have expanded from physical requirements (mainly (dis)ability and physical access) to social ones (including protected characteristics such as gender, sexual orientation, race, and cultural identity) (Nieuasma, 2004).

The journey through existing theories was exciting and frustrating. Whilst many had already improved uptake through inquiries, findings, and proposals, several studies were paradoxical. This thesis tried to cut across theorisations and uncover how real-world practitioners design inclusively. This has become particularly relevant in current design conversations – drawing focus on Equality, Diversity, Inclusion, and Accessibility. The contributions from this research hopefully support these endeavours and transform the conversations about inclusion into action.

Drawing to the end of this thesis, I have a better understanding of inclusion. I was concerned that findings would not serve in everyday practice. Since completing, and leaving the isolated COVID
bubble, I have had the chance to talk with others and use these concepts within our discussions about inclusion in design. It was incredible to interact with findings as part of a conversation about design and architecture with practitioners. Indeed, the breakdown of 4 phases (the early, design, make, and use stages) as well as notions and aspects therein can help practitioners as guidelines, but they equally help sharpen the hazy contours of inclusion and encourage to start practicing. This contributes to a personal key discovery taken from this research and the experiences of those involved in the study: The uptake of inclusion is incremental. It is built on the experiences and discoveries across practice and theory and should serve as continued proof of logic to entice more reluctant stakeholders to consider inclusive practices. We should not and could not promise a perfect solution for any potential user. Instead, we propose solutions that involve often marginalised users to help create designs that offer different but equal quality proposals for a broader audience. As each iteration takes shape, new discoveries provide more genuine solutions to both marginalised and mainstream users – one proposal at a time.
List of References


Inclusive Design in Project Development
Information Sheet and Consent
PhD Research project by Maxim Lamirande
Supervised by Dr Rachael Luck & Dr Katerina Alexiou
School of Design and Innovation
The Open University

Greetings,

You are being invited to take part in a research project on Inclusive Design, exploring the outlooks design project team members have when engaging with concepts like inclusion, accessibility, equality, and fairness. Questions can include: how do you perceive Inclusive Design?, who do you think should be included in the design process?, & how do you manage the needs of a minority and those of a majority? You have been selected because the projects you develop appear to make use of an Inclusive Design approach, or you have a declared willingness to design projects used by diverse users and take on an Inclusive Design approach in your work.

This research project has seen continued changes due to the nature of remote working and social distancing. Unless otherwise specified later – and your approval – participation in this project includes 3 or 4 remote discussion/interview sessions over the next year lasting about 30 to 45 minutes to discuss how your projects engage with inclusion in practice, as outlined in the questions above.

Please see below for details on participation:

You are completing the consent below because you have agreed to participate in the research project Inclusive Design in Project Development. This section will guide you through what data will be collected, how it will be used and managed, and information about your participation and anonymity. Please read each section and please contact the researcher to ask any questions you may have.

1. What is being collected as data?
The focus is this research is to discuss and explore your outlooks – or conceptualisations – of Inclusive Design. This can look at your experiences in design projects and engagement with inclusive design or other surrounding concepts. This may also include testimonials about your design practice or personal experiences as a user, or designer with users. During our discussions, you may feel inclined to share about experiences or interactions during the development process of recent projects. Given the context of design projects, I (the researcher) am willing to sign non-disclosure agreement(s) to comply with privacy and safeguarding, if need be.

2. How is data collected?
Most data is collected using a notebook, and audio recordings for accurate transcription during sessions using Skype, Zoom, or another preferred means of remote interaction. Your personal data will be anonymised and a pseudonym is created for anyone you mention, which includes a randomly assigned name and gender (in the case that a team member can be identified as the only gender in the team). Your role will be generalised to avoid any issue with anonymity (i.e. user / designer rather than your specialisation). The pseudonyms are used in testimonials and research results.

3. How is the data used?
The data collected is used to create conceptualisations (outlooks, views, framings, …) of Inclusive Design that are compared, and analysed. Data will also serve in testimonials or providing examples when explaining key themes within different conceptualisations. This research is expected to be used in academic publications, conferences, and the final PhD thesis.

4. Before final submission
Before final submission of thesis, you will be given the final draft and will have 1 month to return any comments about anonymisation. You can, during this time, choose to have the name of your firm or project (when approved by project leads or directors) mentioned in the acknowledgements. If no answer is provided, it will be assumed that no issues are raised, but the name of the project or firm will not be found in the acknowledgements.

5. Participation and Opt-out
Participation in the research is voluntary and you can choose to opt out at any time in the study. Opt-out can be done verbally, or by email. From that point, you will no longer be the subject of data collection.
we can discuss which parts of your participation can be included in the study. To avoid any issues with research submission, the final deadline for withdrawal is June 1st 2022.

6. Any issues questions or concerns?

Signature and Consent

I ____________________________ (name print), declare that I am fully aware of the information described above and have received answers to any and all questions I may have on the project. I consent to participate in this research and understand that I can cease participating or withdraw my consent at any moment until June 2022 through written or verbal communication without consequence. I understand that the research will anonymise data about me and use a pseudonym. I understand that I can contact the researcher, supervisors, or third party at any moment to discuss my participation in the project. Pending my consent before publication of any research or data, I consent:

To be recorded by audio with the intention of transcription
YES NO
To be quoted in the research project under a pseudonym
YES NO

Participant’s Signature:
Date:
Email:
Telephone:

Researcher’s Signature:
Date:

This research project has been reviewed by, and received a favourable opinion, from the OU Human Research Ethics Committee (HREC) - HREC #3624. For any questions or concerns on a participant’s rights and responsibilities or the responsibilities of the researcher, please contact the HREC at research-rec-review@open.ac.uk or visit open.ac.uk/research/governance/ethics.
Annex 2: Interview Notebook (Excerpts)
reflecting on the notions
22 Jan
2021

It's been made rather clear that accessibility must be split
with the two distinct frames as measured in the original notions.
Accessibility = for users; meaning, how the needs met
by the space for (all) users is considered.
Accessibility = for project / this budget, material / time
constraints. The "tool" project team can access.
User access will have to do with considerations like building
access, doors, curbsides, windows, heights, ramps. It will also
include sensory tests, tools, etc... There will still likely
be a relationship/building code at times / the cost of
purchasing tents, curbside space for a break-out room.
It's likely there will fall under project accessibility since
the initiative is there (user access). But the "P" of function
is place. Nevertheless, it's healthy to remember there were
once a unified notion and thereafter overlap naturally.

There's also something about the importance of values
(see, know, share) that suggest significant influence on
the implementation of inclusive design principles. Parameters:

define. The values in some ways are the subcategories to
what is, or is not included in the project or discussions (e.g.,
therefore, needed to add depth / research / insight onto the value)

Further suspicion with all 3, that aspects of collaboration are
approaching the degree of inclusive practice across the team.
As such, there is a significant effect. That being said, there's a change
in the quality of depth of interactions, and subsequently, its
customers. Considering how these cultural elements may play a
role in the nature of inclusive design, and if this is simply due
to the inclusion of access, inclusivity considerations in general.
Non-inclusive or "inadequate," that every space, design is a social project
also no matter where it is where needs are helpful in these cases...
Favorit Lines from this Interview (P2 P3 P4)

1. "The institutional attitude of don't change me because I'm in a wheelchair."

2. "You're more out of being inside the organization than outside."

3. "But that's where people can be done. What can be done. What can be done. What can be done."

4. "That's got to be the right way. Whether you can get it past this money. Whether good business cases can be put into it. Whether you have to talk to them in a language that helps, and most cases that's cost, or the loss of money."
THAT HE CAN’T MEASURE ON THE INFLUENCE OF A FACILITATOR, WHEREAS
MIGHT “FACILITATE” THE SUCCESS OF USING PARTICIPANTS, ALTHOUGH WE
SAY WE ARE MEASURING THE WORKING WITH THEIR NATURAL TO DISTRACT SOME
POSSIBILITIES OF THE ENVIRONMENT.

> UNLIKE OTHER PARTICIPANTS, PO DOESN’T NEED TO CONSIDER
FINANCIALS (HIS) SAME WAY AS OTHERS, ESSENTIALLY FUNDING
SADLY & ACTIVELY. STILL, SHE HAS AN UNDERSTANDING OF BUSINESS
MODELS, “UNLIKE THE OTHERS ABOUT MAKING MONEY” AND THAT’S HARDER
BY ACTING IN SWIFT & UNIFORM WAYS. THAT THIS CROSSES HERE.
OWN, INTELLIGENCE, INNOVATION, THAT I DON’T THINK EITHER OF THESE THINGS.
SENT HUMAN RESOURCES (SHE THAT) AN INITIATIVE WOULD BE BREATHTAKING
IN TERMS OF ENCOMPASSING THIS NOT SEEING TO BE CLUELESS OR HOW
LESS PRODUCTIVE, OR NO EFFORTS AT ALL, BUT THE FRAME IS ADORABLE.

> THE IDEA OF INCLUSION REMINDS HER OF NECESSITY IDEA OF THE,
PUTTING IT AT 15% FIVE EVEN PERCENTAGE.

> FOR PO, FAIRNESS IS ABOUT BALANCE, TO CREATE AN
EQUALITY OF ACCESS, YOU DO ACTUALLY SHINE UNDER DIFFERENT
OPPORTUNITIES,” HERSELF, PRO INCLUSIVE VS. OFA, VS. UNIVERSAL.

> HERE, NEW OF CIRCUIT SPACES REMINDS HER OF THE FEMINIST
PERCEPTION OF THE WOMEN, AND THAT ONE “ALWAYS” SOME
ROLES OF INHIBITION BETWEEN FEMINIST POLITICAL LEADERS AS I THINK
TO FEEL IT.

> THERE IS ROOM TO BE DONE ON THE CONTRASTING QUALITY INFLUENCES
I.E. THE DIFFERENCE BETWEEN INCLUSIVE AND SPREAD, THAT ALWAYS
SHOWS THAT HIERARCHY CAN ALSO HAVE AN ALIENATION THAT
REQUIRES COMPLEMENTARY INNOVATION.

> CAN ONE IT OK TO TRY TO DRIVE WITH THAT IDEA OF “REQUIRED INCLUSION”
LIKE FEWER EXAMPLES FOR DECREASED INCLUSION
MARKET: POSITIVE COMPETITIVE HIERARCHIES ENSURE MINDSET, WHICH
ALSO SOMETIMES IMPAIRS TOWARDS EFFICIENT COLLABORATION.

> ANOTHER UNDERSTANDED WAS THE CAVITY OF EXISTENCE WHICH
MADE CLEAR TO THE NOT JUST AWARE (AWARENESS OF CHALLENGES)
OBSTACLES TO PURSUE “MEANINGFUL” INCLUSION.

> PROJECT ACCESSIBILITY WAS ONE AT (5) CONSULTANT (FEM)

Recognition

work on the team

A2P1
KIPS

AND “ENABLING OR HINDERED” GOVERNING MENTALITY (TOWARD)

meaningful incl. exclusion

? meaningful & effective?

Can “social” innovation be

inclusion not value
does not enter “social”?

mean 100% is even “social”?
Annex 3: Underlying Themes across Notions

Underlying themes for Project Constraints

Documentation:
• Built Environment participants talked about the problem of out-of-date documentation and guidelines that need review. Guidelines are only guidelines, they are not legally binding.
• Documentation is nevertheless valuable and much needed but some propose proclivity to design for the minimum (P1 mentions clients, P5 architects, P6 architects) and that it is very easy to breach minimum (P6 on installing radiator, or bin).
• ASTM standards are practiced in product design, while guidelines from web developers are up to date and transmission to users is policed by suppliers (Apple).
• Accessibility driven documentation that needs work in B.E. but is current for web and mostly unproblematic in product.

Existing Product Range and Processes
• Parameters set by manufacturing processes and materials predicate types of ideas.
• Timeline and money to test new processes seen as not profitable.
• Existing product range and standardisations guide new ideas (6 models then, 6 models now)
• Algorithms and patents in mobile apps influence scale of production (migration to other Operating Systems.)
• Causing delays due to existing infrastructure (similar to retrofitting)

Money and Time
• R&D can receive funds for research, but underused if lacking time.
• Shortened timelines push User Perspective aside, non priority.
• Money can affect scale of possible impact and opportunities.
• Value as reputational damage, as clean profit, as translatable benefits to different user types.
• Optimising cost and production before fostering a sense of user participation and inclusion.
• Willing to compromise timescale / delay to get job right!

People
• Roles and Responsibilities of different participants
• P1 as a consultant - not an intrinsic part of the dev team.
• P2 as a designer working alongside / against engineering
• P3 as a funded practitioner less concerned with profit.
• P4 as a disability advocate and commissioner
• P5 as a managing designer between marketing and development
• P6 as disabled project leader
• Attitudes about roles and responsibilities
• Clients do not trust designer capabilities and insist they know best.
• Clients and not users in some cases
• Rallying spirit and committed team to the cause.
• Ego influencing decision making and confidence in others.
• Commissioned team to include insight and project development beyond public facing.
• Trust in team members and other stakeholders or participants.
Other Factors
- Accessibility driven motivations about documentation and standards
- Hygiene of public spaces in post-COVID era.
- Safety of users and their relationship with others (particularly)
- Impact of designing for a mythical user / persona

Underlying Themes for Design Stages

Starting Stages
- Always an insistence about inclusion as “the earlier the better”, for a few reasons:
  - P1: more time to discuss, frame and manage expectations with clients.
  - P4: To validate concepts during development phases with relevant disabled users
  - P5: To accommodate the needs of most vulnerable which likely suit all others.
  - Although P2 has many other priorities before user inclusion, they would ask about “the needs, the nice to haves, the pet peeves, what frustrates you about what exists in general.”
  - P6: Open conversations as group beyond audience/user facing participation and design.

Priorities
P5: User inclusion as a part of Universal Design outlook.
P4: Iterative user testing with small groups and “buying” users to maintain a strong feedback pool
P2: Using users only after proof of concept to change smaller effects
P2: Product, manufacturing, and assembly optimisation well before any thought of user participation or consultation.
P4: Accessibility for app use, whilst Inclusion is a layer on top (mainly imagery)
P3: a self supporting system that allows people to express themselves but not need to nurture it at all times.
P1: desktop review and consultation in the form of tiered advice - minimum requirement, then best practice, then user feedback.
P5: Let me get there, Let me in, let me participate, listen.
P6: Creative solutions to create quality experiences for a diverse range of bodies and minds, removing the fear and opening honest conversations. Live (living) conversations with no end to a project; active engagement with accessibility from all members (cultural). Real world experience for all participating in design process to gain experience, and open up to share about their own access needs.

Retrofitting
More expensive than achieving the desired results from the outset. There is a view that getting it right is more important than getting it out there in P4 and P5, whereas P2 was given short time but avoided retrofitting anyway and completely reviewed the design. Less costly to do the job right. Often times retrofitting will happen at the clients dismay or reluctance despite it being their own fault due to prioritisation of other values like perceived user desires (on time, attractive), versus true user needs (often safety or suitability). P6 focuses on quality experience and is willing to take the time it needs to get it right even if that includes delays to events.

Other factors: “Drivers”
P2: Client driven design where the user is not part of the stakeholders or plays a part in the decisions
P1: Either ethos of collaboration, or business case.
P4: Shifting from product driven with “gamefying" as the fitness game niche, to marketing driven which identified inclusive wellbeing through exercise as new market niche.
P1: Reports on new priorities from COVID about hygiene, ways of working and using space, and overall representation and safety therein.
P3: Driven by time and lived experiences to allow project and spaces to flex according to tailored realities which enable participants to fully present themselves.
P6: Stress testing venues by organising and implementing activities, using critical friends.

Underlying Themes for User Accessibility

Regulations and Codes
• Concern for compliance but equally criticism that documentation is out of date or no longer relevant to current needs. P6 views code as good, but easy to fail when designed for the minimum, and very easy to put a bin or radiator to fail code in last design stages.

Bespoke
• Acknowledgement of different uses and user types within a same product or range.
Importance across all participants that a diverse number of opportunities and types of engagement are needed, so long as they a consistent and framed to suit certain needs.

Values
Ground up (sort of to say Users)                  Top down (sort of to say clients but not a hard line)
Clarity * multifaceted
Predictable
Easily avoidable (if need be)
Confident in a space
Not complicated
Feeling of safety
Needs based to user activities and preferences*
Feasible price
Social interactions of the disabled
Allowed to be a rubbish disabled person (forgetful)

Compliance
Efficiencies and translatable benefits
Business case
Mythical User

Note: ressources are multifaceted: P4 claims everyone has a phone, whereas P5 points out that disabled users are often in a category of people who cannot afford a phone.

Universalism
• I criticise the idea that Universal Design sometimes puts forward that by meeting the needs of the most disabled, then you will also meet the needs of all. But this can be shortsighted in the design of services or spaces for a specific user type (low thresholds or bench and table heights) versus the needs of others. The concept of clarity can also be misconstrued or inconsistent between a user desiring harmonious, simple, and repeating colours or shapes versus the user desiring contrast to identify different objects, shapes, spaces…
• Feeds into concerns like normative and naturalised thinking.

Standing out and Benchmarking within the Industry
There is a question to how companies who are motivated can bridge the gap beyond compliance to reach best practice and become a benchmark of inclusion in their industry. Commitments: No new barriers, active engagement to reduce fuss and offer an (e)quality of experience. Challenge the term equality to differentiate or distance from the predominant mathematical/rational thinking of “=” 

Underlying Themes for User Involvement

Identifying a need for involvement
- New needs given world context - lack of good information - data not formed on human experiences and new or emerging values.
- Market niche identified by sales team
- Lack of specific user type attending or engaging with the design
- Gap in market identified by marketing
- Client desire to benchmark or showcase best practices through their designs
- Business case value and identifiable transferrable benefits from disability experience to other user types and efficiencies.
- Holistic application of Inclusive Design through disability-led thinking and involvement of users as not only user/audience, but as staff, as administrators, as family and friends.
- Disability leadership bypasses and shows the inherent bias in “identifying a need” and instead naturalises it into the process.

Who is included?
- User types to consider: Loudest vs. Unheard (and similarity to the idea of Friends vs. Strangers)
- Loudest and Friends are easier to contact and identify which can speed up the process, but they may be more biased to flatter the project, preach to the choir, or be already more comfortable with the design.
- Is this bias of overthinking mythical user profile before just recruiting and getting started?
- Unheard and Strangers are more difficult to find and recruit. This takes more time and effort, but they can provide more perspectives to the problem, may have less apprehensions about sharing the positives and negatives, and are possibly less comfortable with the design (which can reveal more).
- P3 users can become participants in the design and designers work to facilitate these people to become their “whole selves”.
- P4 users can be vested in the process as stakeholders to the design and will hold positions of influence across the process. This can streamline validation processes during development.
- Non users can include people from the core design group who can act as advisors, or influence the process as some form of gatekeeper in the process (P2 and engineers / P4 and CEO / P4 and Marketing driven) or consultants (P2). P5 suggests that it is not always necessary to have disabled users, but “at least people who know about the issues well”…impact can depend on what is driving the design (product, optimisations, marketing, user needs,…).
- P6: People with relevant experiences or responsibilities relating to the area of interest.

How to recruit?
- Different means to recruit via:
  - Clients may have already recruited key stakeholders that play a part in monthly or bi-monthly reviews (P1), Councils will often have the own people from the community to represent broader interests (P1,P5).
  - P1 made use of an agency which was enriching but took more time, money, and explicit precision to identify the right candidates ahead of recruitment.
  - Observations and testimonials from existing users or those who will succumb to the new changes imposed (staff of a company undergoing renovations (P1), or citizens of a public use space (P2), or varying degrees of user types (and intimacy (friends, power users, novice-users))(P4).
• Critical Friends: element of Trust
• Concern about compensation: how are participants compensated, and does this have an effect on the level of involvement possible? What are the expectations and different levels of involvement - and what are different levels of involvement?
• Different methods have varying chances of accuracy (not easy to categorise this but is there a way to influence accuracy?)
• Transferrable user types that serve as representatives to umbrella groups
• Risks involved as some forms of marginalisation are not captured in categorisations or transcend different categories without their own identifier.
• Certain physical of cognitive abilities transfer to non-disabled user types (age groups vs. Disability with P2, Accessible toilets and gender fluidity or additional time needed in bathroom P1, Wheelchair users and other wheeled accessories (pram, grocery cart, walker) P1, movement breaks for wheelchair users and other non-fitness app users P4, walking with “sticks” versus other handheld or ground based accessories.

How to involve?
“*You have to start somewhere and you have to learn*”
**As a leader!** - lest we forget what we’re actually trying to achieve...
• In the early stages
  • Determining the culture of a group of design context
  • Substantiating an ethos to the design practice
  • Allowing openness and framing a well bound context for better self-expression
  • Asking questions:
    • What are your pet peeves, needs, etc… (P2)
  • In the earlier stages, how can disabled users’ expertise influence “big concept stuff”? 
• During the design
  • Prototyping - But is there a challenge of speaking different languages (see expertise)
  • Validating layouts and ergonomics
  • To provide data to help correlate user experiences, policies, and design objectives
  • Final experience : validating final changeable options - not dissimilar to light retrofitting to ensure heights, spaces, dimensions, and effects.
• As disability led design (disabled leader, see P6).
• Across areas - not only disabled users, but possible staff/ constellation of people affected.

Expertise
• Expertise in: designing, or in being disabled, or in living within a marginalised group, or with certain perspectives and values that coincide or conflict with current and future design.
• How to juggle client and user needs - who is responsible for different aspects of the design and what are the expected contributions of different participants. Who is the facilitator and who has the onus of responsibility. Expert in experience does not suggest expert in designing, or expert in speaking design development language, with negotiating across gatekeepers and various stakeholders with different interests.

Underlying Themes for Fairness

Equalising
• Can be described as suitable to everyone, but there is not a consensus about how this can be achieved. In some cases this means to design for the worst case scenario (P5), but (P3) would suggest that the experiences are not the same for all and there should be a gamut of offers each tightly framed to meet specific needs.
• It is agreed that these needs have a multi sensory concern to enable accessible and suitable experiences according to need.
• This may include on the one hand hearing loops, but in other cases with demand flexibility from a space, or well framed experiences absent of what may be considered specific triggers (such as crinkling bags, or loud noises, lights, etc…).
• Equalising as high key objectives like clarity, not or less complicated, and safety.
• Quality of experience and finding creative ways to offer an experience to different bodies and minds.
• Equalising over time and recognising a need to offer as disabled children turn into adults, and as opportunities in one point within the year to another (seasonal offers and dry-spells).
• Moving further than technically accessible to a quality of experience (as the def. of accessible).
• Multiplicity of options within a subset of “accessible”.

COVID
The ongoing situation over the year has given space for discussion about what were less visible inequalities. It has also presented non-disabled users with a glimpse of the sense of imprisonment some disabled people face as part of their everyday. This includes an inability to access spaces and an enforcement to the confines of home as a way to work (Home-working not always a choice).

Transferability
• The notion that certain users can mimic the experience of others through their own. They are placed as an umbrella user who’s experience would align with another; such as wheelchair users and pram users. This seems to most often relate to spatial requirements such as widths and heights.
• The other idea is that designing for the worst case scenario as described by P5 as the guiding principle of Universal Design. Although I am still weary of this participants view with sometimes conflicts with their view on disability as a social model. It continues to conflate the concepts of contextually framed boundaries and ability framed boundaries. While designing for the worst case scenario can in fact prove helpful. There are two caveats; (i) under the premise of a social model of ability, a worst case scenario should not exist as all conditions are viewed equally, only the contexts can be disabling…but how can we decide what is a worst case (and forcibly decide on a best case), and (ii) designing exclusively for a worst case (if selected) would likely create disabling experiences for others. There is a lack of middle ground. For instance, designing exclusively for a wheelchair user may create clearance issues for non-wheelchair users if we are to design according to a specific case without awareness for other conditions and cases (worst or otherwise).

Middle Ground
• Can be viewed to happen between two elements but does not seem to require finding an equidistant point between them.
• Rather, it can be an acknowledgement of both and balance such as awareness or action is considered so neither is neglected or excluded. P2 presents this as finding a middle ground between the technical and play aspects of the project objectives and subsequent processes to achieve.
• Or, it can be seen as finding a position within the spectrum of (falsely?) dichotomised views where neither dominates. P1 explains the value in looking for the unheard voices and “making sure that the voices we hear are not the ones we always hear”. The governing ways of thinking are put in tension against more marginalised perspectives
and attempts are made to provide louder voices to those unheard (or space to hear them out as in the activities organised by P3)

**Institutionalisations**
The idea of institutionalised thinking (deeply embedded ways of thinking, or dispositions towards something or someone) with systematic effect. P1 mentions (a perceived sense of) personal safety when cycling, affected by institutionalised racism. This institutionalisation negatively affects (projected, perceived, or real) interpersonal dynamics between the rider and others on the road (fellow cyclists, motorists, etc…) This sub-theme will likely further strengthen the connection between fairness and governing ways of thinking (but don’t focus on that with Gov. Ways of Thinking at the centre b/c it’s not research crux). Normative and naturalised thinking about disabled and accessibility as a destination, in a non-interactive way, as an afterthought.

**Case Study: Toilets**
- Expressed as a “final frontier of inclusion and accessibility” in A2P1, toilets present the needs and interests of diverse user types in tension. A middle ground or equalising experience may be influenced by an institutionalised thinking about current conditions (higher number of male staff members suggests a bigger male bathroom), but this doesn’t consider future casting and greater dominating ways of thinking about gendering careers or future leaseholds for instance. Offering a single handicap stall may be disabling to people who require more time in bathrooms and a constant worry that the bathroom is occupied. It may also unwillingly reveal hidden disabilities, or conditions that onset marginalisations. There may be a number of cultural boundaries that affect gender neutralising bathrooms, and possible concerns of cost or spatial requirements for full single bathrooms. These concerns also transcend other gendering spaces such as changing rooms - but does it transcend to gyms? (What happens when a trans woman signs up for a women’s only gym?)

**Underlying Themes for Outcomes and Impact**

**Actioning Change**
- From before the project starts at the study of literature reviews and in light of surveys or trends. Personal motivation or existing position within a group.
- From objectives to help frame and spark conversation and guide the design development process.
- From production in the way things are designed, the materials used, the people involved or consulted.
- From sales at the point of contact with clients and hand off to marketing.
- From investing in disability leadership and adhering to commitments.

**Outcomes of change**
- To users: demonstrating new value to users who may or may not have been otherwise outcast by the current design, or who’s needs were not previously met.
- To companies: such as improved manufacturing processes in tandem to human value-driven commitments, improved financial prosperity, more attractive marketing to current affairs (namely representation).
- To staff who were not well versed or heard in the implementation of accessible and inclusive design practices. Benefit by gaining experience and proposing ideas to meet their own access needs.
- Short term or Long term perspectives are compared to illogical (short) and logical (long) in the planning and maintenance of large scale services.
• Continued active thinking about accessibility in the context rather than static outcome.
• Not as a space or design lost, but as a new different space of design gained.

To create change for the benefit of inclusion (for disabled/marginalised) is...
• To have proof of logic in involving the disabled (P5)
• To demonstrate translatable benefits of one user experience to another (P1, P2)
• Wheelchair and pram, young children and older children with cognitive disabilities, …
• To demonstrate efficiencies
• Congestion issues in spatial clearances, to improve visibility and avoid delays
• To show value in the business case
• As directly good business case like profit, improved or optimised production or greater network of user types and allies
• As worst case losses to business case like wasted training on staff (train conductors and suicide), reputational damage
• To stress test venues, and offer a range of opportunities to engage (P6).
• Giving everyone involved real world experience with thinking about access needs for a diverse range of bodies and minds.
• Providing the tools needed to enjoy a space for diverse bodies and minds (and sensitivities) so someone can forget their own tools and not worry or miss out on the opportunity (i.e. ear defenders, closed captioning, hearing loops).

Blending qualitative and quantitative arguments/insights
• Qualitative: experience of people to express value and demonstrate inequalities, and to substantiate design decisions (“person in front of you showing you it doesn’t work).
• Quantitative: percentages of user types (ex: ageing) and translatable value of wider user pool.
• Combining design objective with design initiative as a lever of change.

Tensions within the concept of Scaling Up
• Tensions between the intentions to create generalisable experiences, provide a greater diversity of offers, or an offer for all.
• Tensions between unifying and bespoke **although should highlight transferable value (bespoke can still be scalable, just more framed and tailored to less universal standards).

Bespoke framework…artefact or outcome is simply by-product of framing.
• Less interest in making every space accessible, but deeply embed in at least a few.
• Caution in statements (levels of abstraction and top-down vs. Bottom-up)
• Overarching ethos to be suitable to all (interpretations of universal design)
• Delivery of a (i) solution for all, or (ii) different solutions that together cover bases for different needs and abilities.

Underlying Themes for Governing Ways of Thinking
The first job is to break that idea that exclusion is something that happens to individuals - it’s systemic.

Group/Stakeholder dynamics
• Intention, attitudes, and relative impact according to position as “gatekeeper” (individual through whom the project must pass).
• The often the exclusion of disabled people is often presented as personal bad luck or misfortune and natural - of course you’re going to be excluded because your body or mind works in a non-normative way.
• Systemic thinking; where compliance is tacit agreement with marginalisation institutionalised thinking induces.
The Client
• Understanding of the Social Landscape
• Desire or not to “benchmark inclusion.
• Legacies (data, reputation, design, manufacturing processes, available hardware / software)
• Tensions between “WOW” Factor / Eye Candy (often client-driven, or lead architect-driven) and usability, suitability, and safety.
• Presumptions about others induced by indirect contact across project - i.e. what happens when people need to work together from across areas...

Demonstrating Value
• In the business case with “translatable conditions” (user types/situations).
• Benchmarking
• Present a niche in market
• Reputational damage and purple pound (ripple effect)
• Quality of experience to all involved (users, and adjacent staff)
• Outside the business case, such as artistic case (our collection of work is stronger). For instance, is Athena Swan for the business case? Ask Nic...

Disability and Accessibility
• Wheelchair as automatic reference (status quo), but equally exclusionary experiences beyond physical mobility
• Beyond accessing / entering a space (building, app, or otherwise)
• Safety (as regulations, as a feeling, as a sense of neglect, managing dangerousness)
• Categories outside biomechanics or cognitive conditions protected (or not) by the Equality Act.
• Documentation as both regulatory and needed, but also (out)dated and requiring review.
• Not as a goal but as a continued process.
• Cumulative oversights lead disabled to believe they are not welcome.

A.K.A.s
• “Everyone” Statements
• “Automatic Presumptions”
• Normative, naturalised

Underlying Themes for Proof of Logic
Transferability
• Needs and abilities relevant to different use and user types.

Ripple Effect
• Purple pound
• Reputation damage
• Lower quality offer makes for lower demand, less opportunity to engage with group

Case type and weighting
• Arguments according to a business case
• Often, sales drive everything
• Taking from transferability or ripple effect to build case
• Strengthen the company with an artistic case
• Finding a niche in the market - driven by accessibility, inclusion, underdressed use or user type
• Human case or case of convenience - communicating how they envisage the space being used
• Understanding and putting to use stakeholder and gatekeeper intents within proposal.
• Tiered advice according to
  • (i) minimum regulations, (ii) achievable initiatives & (iii) long term aspirations
  • (i) minimum regulation, (ii) good practices, (iii) sector benchmarking
• According to a governing way of thinking - Accommodating the prevalent top-down thinking

**Scaling up**
• Tensions between bespoke and universalism
• Ability to scale up or repeatable design process/outcome onto other/future projects/outcomes.
• Demonstrating continued engagement with a specific type of proposed activity
• Demonstrating a way to communicate and replicate for different user types, events, opportunities, locations, …

**Championing**
• Key experts included in argument, i.e. Consultants with track records
• Involving expert knowledge from outset
• Selling a well informed "ideal" experience for users/key decision making stakeholders.
• Providing/setting up key practical questions
• Understanding the culture of a building and addressing “non-spatial requirements” (i.e. non-spatial protected characteristics.

**Maintenance**
• Viewing accessibility as a continuous practice rather than a goal.
• Inclusion as a running part of building maintenance.
• Sharing responsibility and advocacy with active users and maintenance teams rather than exclusively original commissioners and architects.
• Participatory thinking
Allowed to “get it wrong"
<table>
<thead>
<tr>
<th>Inclusion Barriers</th>
<th>Development Barriers</th>
<th>Inclusion Enablers</th>
<th>*Involvement</th>
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<tbody>
<tr>
<td>Logic of Involvement</td>
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<tr>
<td>Proof of Logic:</td>
<td>(i) by demonstrating translatable benefits (iii) By showing value in the business case</td>
<td>(iv) By showing worst business case scenarios from damages (Reputational Damage)</td>
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<tr>
<td>Stakeholder Dynamics</td>
<td></td>
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<tr>
<td>Includes, (i) roles and responsibilities (+attitudes therein), (ii) influence from whoever is at the centre of the transaction, (iii) Gatekeeping (see Gatekeeper), (iv) The values of a client versus the designer, versus the user, (v) Trust (opening to Rosen’s collaborative culture + Kleinmann as reviewed by Laminande, 2020).</td>
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<tr>
<td>Gatekeepers</td>
<td>Looking into the effects of (i) who is in charge or has final say, and (ii) who are those along the design process needed to advance the project.</td>
<td>Recruitment Finding suitable people; the unheard/ more difficult to find. Existing groups, council recommendations, agencies, etc.</td>
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<tr>
<td>Regulations and Guidelines</td>
<td>(i) Both as a baseline resource and as a requirement to companies, but also criticised as (out)dated; (ii) the reality that guidelines are not legally binding, and (iii) the challenge that qualities outside quantifiable (physical) requirements within Equality Act are difficult to capture in design requirements.</td>
<td>Participation (i) expert as user, as team member, as designer…, (ii) the challenges of communicating and participating with others.</td>
<td></td>
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<tr>
<td>Universalism</td>
<td>(i) Experiences that transcend differences or diversity - such as a feeling of safety, or using a toilet as needed/ required. (ii) Tensions between the beliefs that solutions are bespoke and framed, or solutions should be suitable for all. (iii) Coexisting with the social model of disability where B.E. should accommodate any human condition (onus on designers, architects, planners, not users).</td>
<td>Participant Type (i) Loud/unheard, friend/stranger. (ii) Represent user-type or needs</td>
<td></td>
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<tr>
<td>Optimising</td>
<td>Often associated with production, assembly, experiences and linked to profit or flow of other quantifiable values. Can be associated with qualitative values, but usually only to substantiate/ create impact on quantifiable claims.</td>
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<tr>
<td>Money and Time</td>
<td>Together predicate possibilities in projects, especially impact on users. Money and time directly affect one another in design outcomes (lots of money but no time, lots of time but no money are both hindrances - although lack of time seems to trump). Earlier the better Earlier involvement of or talks about users allows for more time to frame value with client, and embed user insight into outcomes. More challenging in very short deadlines or projects (already) starting late.</td>
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<tr>
<td>Transferability</td>
<td>(i) The conditions of one user can translate to satisfy the needs of others, (ii) the processes developed from an inclusive project can apply and benefit other projects, (iii) the overall method is multiplicable or easy to copy, or (iv) design for the worst case will suit the needs of all. Market Niche Opportunity within market or noticeable user desire for inclusivity +/-or accessibility. Maintenance Seeing accessibility design and standards.</td>
<td>Compensation Tensions within (i) compensating users as equal experts in the team, (ii) compensation in conjunction with universal or disability credits, and (iii) the ethics of involvement in research.</td>
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<tr>
<td>Involvement</td>
<td>Questioning how to recruit, how to access users, how to let them participate, how to compensate them, or represent absent users.</td>
<td>Institutionalisations Deeply embedded ways of thinking with often systemic effect. Institutionalised values, design methods, processes, structures.</td>
<td>Expertise (i) Lived experience is an expertise in navigating within/design a design, but users (dis)abled are not inherently experts at communicating, designing, resolving. (ii) Responsibility of team members according to their expertise, balancing facilitator as enabler and decision-maker.</td>
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<tr>
<td>Bespoke</td>
<td>A design tailored or framed to the unique needs of users is sometimes difficult to monetise or scale up. Existing Practices &amp; Processes Investments in current methods, pipelines or manufacturing in a company.</td>
<td>Benchmarking To hold the best practices/standards in given industry.</td>
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<tr>
<td>Scaling Up</td>
<td>Moving into a larger market, or growing own market and coping with the demands from production, maintenance, user queries and diversifying needs (sustainability). Retrofitting More expensive than resolving at outset. Complex access to the site, changes to existing structures.</td>
<td>Safety</td>
<td>Feeding of being safe highly valued &amp; desired by users. Subjective to user - as physical space, or with others (interaction).</td>
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<tr>
<td>Presumptions</td>
<td>Automatic frames of reference; problematic when trying to involve or design for marginalised groups. World/Local Context Requirements set by global conditions or local specifications (weather, pandemic, …).</td>
<td>World/Local Context</td>
<td></td>
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<tr>
<td>Disability prejudice</td>
<td>Team members or stakeholders perceive disabled users negatively; marginalise, neglect, omit. Cultural Contexts Conditions or frames formed by cultural practices/backgrounds.</td>
<td>Cultural Contexts</td>
<td></td>
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<tr>
<td>Middle ground</td>
<td>Not always equidistant point between two views; influenced by weighting of specific values over others. Compromising, or finding opportunity. Reputational Damage Knock-on effect of marginalising designs.</td>
<td>Reputational Damage</td>
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<td></td>
<td>Actioning Change The effort and motivation to initiate and mobilise changes.</td>
<td>Actioning Change</td>
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<td></td>
<td>Equality Act Legally binding representation of marginalised/vulnerable groups.</td>
<td>Equality Act</td>
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Annex 4: Analyses for the Model of Open Innovation
<table>
<thead>
<tr>
<th>Testimonial (excerpt)</th>
<th>Enablers</th>
<th>Barriers</th>
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<tr>
<td>But they argued that “well we don’t even meet that percentage of needs for the number of rooms that are really filling the clients that would need them”. We pointed out that the requirements weren’t really been met in the first place with the designs of their previous rooms in a lot of their buildings. Not just those specifics; wheelchair users have another perspective to it where we can show benefits to ageing users or prams. So one of the concerns that we have looked at is the idea of people that do not fall into categories; ambulatory, disabled, different forms of access needs, or religion. Things that aren’t seen in the clear categories of the regulations or best practices that fall out of the categories of things that are part of the built environment. One thing that is less easy to measure are groups that are not disabled or disabled in a physical way. The hardest sell is the idea of social, culture, ethnicity, anything protected by the equality act that isn’t a physical disability because that’s not captured in codes, and can’t really be captured in data or building codes.</td>
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<tr>
<td>Year bridging to the forefront challenges that different groups have in relation to using space and policy that exist and how spaces are operated. And that recognition and voice that has always been there but has been much louder because of things happening outside the bubbles we all work in and because we have that social landscape that’s reflecting it in relation as an example BLM. The voice, views and perspectives are much louder and it’s finally opened people up to the fact that it’s just not good enough what we’re doing at the moment. Partly that and partly again a recognition that we have to do things differently because of COVID and the fact that issues — we’re talking about normality but actually things can’t be the same as they were — so we’re getting commercial clients saying that “people probably aren’t going to want to rent office space in the same way as before”</td>
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<td>It scared me for years on and I can say it was a project I really didn’t enjoy because there was that very clear reluctance to even thing about anything beyond that minimum standard. It wasn’t enjoyable. It was very clear cut that their perspective was “if more accessible rooms, it means more space, it means less rooms, and it means less money.” So there were lots of concerns other hotel operators have expressed but again there are solutions we’ve worked together with them like demountable grab rails as an example. Very simple things that don’t take a huge amount of time to install if guests require and if there’s no need, no one is the wiser and rooms are just a bit bigger, and who doesn’t want a bigger bathroom. When the client is open to the discussion, there’s 9/10 a really good solution to address those design issues or concerns. Within the organisation there was a higher percentage of people who identified as male than female and so automatically a presumption that “we need to push for more mens rooms, surely regardless of policy, that’s what we need to push for to accommodate for the population we are designing for” well we have accessible for gender neutral” then surely we’ve covered all bases... but that doesn’t address it.</td>
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<td>They’re a 25 year old company and one of the first water play companies worldwide. And as I said, they’re second worldwide, they sell everywhere. So they have all their own experience in the field, but they also have the R&amp;D department so it’s based on research and experience. Specifically because the rules in Asia, even the standards are not the same as North America. Europe was much more lenient when it comes to ‘dangerousness’ or ‘safety’. So they don’t really bubble wrap the kids. You can kids playgrounds that are quite ‘out-there’, very experimental. It’s really more discovery trough play and risk taking… You play, you fall, you hurt yourself, you learn. Whereas in North America, specifically the USA, it’s about bubble wrapping, you just want to eliminate any chance of anyone suing you basically. And this hurts the kids.</td>
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<td>I don’t know if that’s actually how it is, but everything falls into one big category of how many people can fit, and how much fun can they have? That’s how the idea of having structures adapted to younger age groups was very... that’s how we presented the niche in the market, and the customer wants it because the sales department says so.</td>
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<td>Let’s say a client really really wants what we sell a big splash, a dumping bucket for example. It has over 20 gallons of water, if a client absolutely wants to put one of the the elevations and there are three decks. The play specialist warns that everything will be fully splashed every thirty seconds, that may not be the best idea. Yes, the 10-12 year olds are okay, but the rest are traumatised. These are the most problematic issues we have. It’s really with the big splashing overhead water. It lowers the play value in general but gives a big wow factor so clients think they’re getting value for their money. Not everything that’s shiny is good.</td>
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<td>There’s huge opportunity but it has to be handled with care and awareness that you’re not accidentally going down a route of ‘this is for these or these families, and this in the inclusive one’ because I’m sorry, is the other the ‘non-inclusive’ one, and it this how we want to operate, and is this how we’re using public funds. It’s definitely not a case in my mind to try... it’s so complex. There’s always that balance of bringing and ensuring a visibility of disability or neurodiversity. Awareness and exposure into the mainstream, whatever that is. But at the same time these are individuals living their lives and I’m never on a plait to push people along a production line. This is your access point, and by this point you will attend this mainstream events.</td>
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Yeah, I mean I don’t want to say I was fighting for it because there wouldn’t be all that much to resist like 'No P3, please don’t engage with the children with complex needs’ at all, but I was fighting to say this has to be priority. This is not reflecting well on us. How could we say we serve the community but the moment it gets hard, we shut our doors and disappear.

for me inclusivity is more of a social aspect of it I find and accessibility…I find for myself accessibility is more important and inclusivity is a layer on top because it’s including in the visual. If not if I do a box is a box. I don’t care what the image is, but my notes will just be “person doing squats”. I don’t need to know any more, just this information goes here, and this type of information goes here and this action here. Accessibility needs a lot of work on my end, like how we place things on the screen. Whereas Inclusivity is about what’s in the copyright and the photos is how I understand it …currently. Working with the marketing team, this is how they use it. The message they build in the app, the story of our app is marketing that built it, and I apply it everywhere and we merge our stuff together. But it’s more on the marketing side that they will talk about it.

Yeah...well...When we did the switch to marketing driven company, that’s when we changed the branding of the app. We used to be illustrations, illustrations are pretty much general for everyone. It was never an issue, but it was never a conscious decision like “we need to put this image this way for a specific reason”.

Most people equate disability to wheelchair use to access an entrance, but once inside the building, do I know where to go, how easy is it to find my way with learning difficulties or dementia which is now a more fashionable argument. It’s hard to access without signs, or a hearing loop in a room, can visually impaired “see” what they are meant to be looking at. Again the easy ones is restaurants with same colour flooring, chairs, walls and tables, no colour contrasting cutlery.

So Inclusive Mobility is guidance, currently redrafted but it’s 18 years out of date. One example has wheelchair sizes that aren’t consistent with the Blue badge and it’s guidance used for public service use. The MK to Bedford bus doesn’t fit wheelchairs, it has space for them on the bus. The comment is, it complies with the requirements…it does but the requirements aren’t up to date. Which is why they need to be updated. Going back, getting around is the streets, and public transports.

We talked with them and designed basically a ramp covering for changes in platform height and platform to train gap, and we looked in terms of doing it for open stations. On JLE was a retrofit, we had an open system and station for JLE and Elisabeth is a closed system. Tunnel ventilation is separate from station ventilation. You could do screens with a partial height to stop the winds coming through with train or lower to guard rail height so that it stops people falling off but none of the impact apart from weather protection. And you can do that quite easy. Most platforms - not all - but most can take on a guard rail. You would have the issue of it being too easy for people to lean over to see if the train arrives. But those are the issues and it can be done. What can be done, how can we do it, what does it involve, let’s work it out. There’s got to be the will of the way, whether you can get it past the money counters, that’s where the business case can get into it. That’s what I would say to the retail company, “I can’t get into your shop, which will go back to your family and friends”. You have to talk to them in the language that hurts, and most cases that’s cost, or the loss of money.

Reduce Fuss. As a disabled person there’s often a lot of additional fuss around access requirements. That may mean that you arrive somewhere and people may not know where the key for something is, or where the hearing loop is or no one knows to access the accessible toilet or any of those things that feel really small in of themselves, but cumulatively send the message that you're not welcome, not thought about, not valued.

And so I hope what we were trying to do with relaxed venues - part of the explicit aim - was to change those messages about who is being told they are being value, who is being told they are considered and cared about. Often for a disabled person those messages are negative and boil down to “we haven’t thought about you and your fire risk” and we want to change them to “we thought about you, we want you here, you are valued, you are welcomed”.

That’s the thing about thinking about accessible spaces and systems is that historically there’s been this idea that access is a goal that you achieve, but it’s you make your spaces accessible as a process of constantly looking for, identifying, and removing disabling barriers. One of the important things that I hope relaxed venue will do is open a conversation about constantly looking for barriers and removing them and thinking about a diversity of bodies and minds in everything that it does because if you think inclusivity and access as something that you do and complete, then those barriers have a nasty habit of re-emerging. There’s also so often, architects design to the minimum. The guidance - and I really think it’s great to have standardised guidance - but I can see over and over again that people design to those minimums, then it’s really easy for a bin to be put in the wrong place, or a radiator to be mounted that just makes them unusable.

If you’re doing something for a mythical audience or artist, you will eventually meet those targets but you don’t know quite when, whereas they would learn and put these skills to use immediately. This stuff seemed to help people understand the value and importance of their role within that whether that’s like - the welcome you give as a security person is as important as the show they watch. If someone sees an amazing show, but someone else is rude to them at the bar then it doesn’t - they’re going to remember that. So everybody is part of creating this experience.
Since the pandemic there has been a shift in the attitude, where some firms seem to really ‘get it’. The Black Lives Matter, and other advocacy that has happened throughout the pandemic, firms have started looking at different thinking. With regard to if it works or not; with the good companies that we work with. For example we have two global companies, the way that they use space. For some its a really easy conversation to get started with pushing beyond and advocating for some of the inclusion that we think needs to happen and that should be happening. But for other clients, and honestly the majority of them, its a lot bigger push back from their side because it is seen as a lower priority.

We showed them that they could stand out from the other competitors and there was a business case for it because there was a need for these particular types of rooms in London so they could a be quite a reference, or beacon, or stand out for it outside the status quo in that way. To be able to offer this. We got quite a bit of push back, but the architects that were involved in the project were really great because they were able to fit some of the accessibility ideas into the footprint of the building and it didn’t really compromise on the room number or the dimensions. But the company gave us push back because ‘well we’ve always provided X% of rooms and that’s been fine so why would we change that. And we tried to tell them the push back about the dimensions of the rooms that were not all that ideal, but this was a new build. We pointed out to them that a lot of their portfolio was historic buildings so it was a lot of retrofitting and that X% has been sufficient in that it meets the needed requirements. But they argued that “well we don’t ever meet that percentage of needs for the number of rooms that we have, so were not filling them up with the clients that would need them”. We pointed out that the requirements weren’t really been met in the first place with the designs of their previous rooms in a lot of their buildings.

It was very clear cut that their perspective was “if more accessible rooms, it means more space, it means less rooms, and it means less money. Clear that it wouldn’t add value to the business case so they weren’t going to do it. I think a lot of push back from them was using existing hotel buildings and portfolio of hotels across the country as evidence as they think of it the fact that there wasn’t a demand for accessible rooms since they were always underused. They based their decisions on this even if the room they claim accessible are actually quite bad and that’s probably the reason why there’s no demand.

They’re talking about how they are a creative company and want people to hot desk and collaboration spaces and spaces where people bump in to each other and hoping for these open spaces and stairs where people could shout or see each other across levels and have that culture of collaboration and creativity. Understanding that was important from the beginning and their objectives from a high levels, but then honing it down to how useful that is and “yes that’s what you want to create but breaking down to different user groups, preferences “ then working with them to see how effective what their proposing is…again that objective. Not necessarily what you’re looking for.

again going back to the preaching to the choir - for the people who aren’t necessarily keen to do anything beyond the minimum, could there be a way of addressing or trying to target those clients. Whether it can be brought back to - again I’m being very cynical here - the business case, the economic value, the things that some of those clients may be more concerned with and how to bring them round. I think rather than just helping the people that already have that mindset and that attitude and are as a result likely to have people in house, and employing

The original elevations, we had architects and designers working on how to build those elevations based on the clients needs. Playnook, we used our research kind of like the argument. “We specifically placed these things here, and that type of layout or configurations because this is the ‘ideal’ play experience” and we sold them as pre-assembled modules.

From a play perspective, it’s the optimal experience, but from an administrative perspective it was also optimal because there was no extra work to do once it was done.

it’s based on research too. We did a huge survey, we have about 150 sales reps. So we did a survey with them and back to back surveys trying to figure a bit other than the research from literature review. Kind of what their take on it was or how they perceived things. That’s how I came up with the sheets with the user types.

You pay more to get it fixed. There’s a play specialist who designs with clients so the client gives them a top view drawing with all the elevations, and they design what to place where given the budget and intention or desire. Something more adventurous, more discovery, soothing, relaxing. There are designers who actually design with the intention of having a good play value with the new elevations. But the customer determines everything. There’s a list of things where they just check off what they want or not. It’s plug and play...

a very new interpretation of how to structure the team. But I guess, I’ve understood it as having the intention of not silo-ing the teams and trying to ensure that there is more concise, more overarching philosophy around being a site and venue that welcomes the full community around it.

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So yeah, Business models, seem to be primarily about making money. And money it seems to make the most money, you have to act swiftly and in very uniform ways and I don’t think either of those things suit humans or human life or the development of people. I think for me, there is a definite initial awareness that would be required in terms of recognising that this isn’t going to be quick, or about mass production, or one-size-fits-all.

It’s important to have a balance between very bespoke occasions with specific sensory adjustments where we can confidently say “at this point on this day with absolute certainty we can confirm that the hand dryers will be turned off in the bathrooms” because for some families, that’s the only way they would use the toilets in a public space.

This is where interface design is important. This is something I brought up in the company that we were struggling with, we wanted to publish fast and were skipping user experience which caused loads of problems with the product because it was unclear. People gave comments or messages on the app store, users reaching out trying out, “hey I don’t get what’s going on, I’ve lost sight of this or that because the app became unclear. Now marketing is more about the gaps in the market and the app working towards that way. So they are how we moved to focus on inclusivity as a fitness app, instead of. When we were product driven, we worked towards gamification rather than lifestyle because we saw the gap at that point, but now people as less likely to pay as much for a game than the social aspects like right now, they will for organic growth, the social aspect is more important. So it was a conscious decision we made a couple months ago.

It’s not legal, you won’t get a ticket if you don’t follow button size, but Apple is very strict in that they approve of every update you publish to the Appstore and you could get denied. We get denied easily one week out of three. The app may not work because they found a loophole to break it. Or the charging image doesn’t follow their guidelines, they can reject. If you show an older version of the iphone in an image, they can reject.

Retrofitting is expensive, you can. But then again, the value of the Purple Pound is such that “can you afford the loss as retail or a community area” as they are part of your community.

Right, that’s a terminology that’s grown up as to how much money the disabled have to spend. Which is about 20 billion. It’s a noticeable figure and if you add onto that nowadays my family plus the line of family in effect will look to see if it’s accessible. My sons wife rang me up to tell me “did you know so and so don’t have disabled parking”. Well no, but there’s not a lot I can do about it at the moment. But yeah, it’s that type of thing that deters people from going. Because then they see the reputational damage to that organisation is that it doesn’t cater for them. So that’s the purple pound and it is something that you can put pressure on with. It’s also the issue that comes around with Universal Design of the design process and when you incorporate it.

It’s obviously about bringing someone in who knows about these things. It’s about bringing it in with the business case. There’s been a comment on Linked In about a blind person walking off the platform because it lacked tactile. I then suggested you could use screens. She was an architect and said they are expensive. But….how much is a life worth? I’ve been through this argument. I know the accountancy method and the reality, but then all the other issues to emphasise the representational damage it does.

But those are the issues and it can be done. What can be done, how can we do it, what does it involve, let’s work it out. There’s got to be the will of the way, whether you can get it past the money counters, that’s where the business case can get into it. That’s what I would say to the retail company, “I can’t get into your shop, which will go back to your family and friends”. You have to talk to them in the language that hurts, and most cases that’s cost, or the loss of money.

I think there’s a lot of anxiety around getting it wrong around disability. We hear lots of places say they don’t want to get it wrong or think that’s too specialised and somebody else is probably better at doing it that us. I think a big part is taking away that fear and showing that this is already part of your work but it hasn’t been part of your work just means that

For us, there were moments of tension and quite early on there needed to be long term for relaxed venues to work, there needed to be somebody with expertise who could be championing, watching, challenging. That sort of inclusive practice coordinator role felt important to have longer term. And I think there was some ideas - “isn’t its everybody’s responsibility so if we have one named person, won’t others think it’s less their responsibility and I don’t buy it. I understand the theory behind it, but don’t buy it. You need someone who has knowledge - disability is so much more than impairment. There’s politics and culture and you need someone who understands that.
## USER ACCESSIBILITY

**Testimonial (excerpt)**

To be able to offer this. We got quite a bit of push back, but the architects that were involved in the project were really great because they were able to fit some of the accessibility ideas into the footprint of the building and it didn’t really compromise on the room number or the dimensions.

The elevators were close enough by, you weren’t over exerting yourself to get there. They were close, in therm of box-ticking everything was fine. But what we wanted to have the company think about was the experience in the space for every user group. To substantiate that we relied on user experience and user feedback. Less on numbers, really the experiences that people had.

So, lots more demand for cycle storage, showers, changing facilities. Reactive so if people are not ready to take public transport and reflective of the increase of these activities since lockdowns.

We’ve had requests for specific or explicit needs to understand the minimum. We’re working with one American company trying to understand how the US standards with British standards so we’ve categorised and split and presented that way to help them compare and how far they need to push to meet good practice.

There was also a large religious population there that didn’t like the idea of gender neutral toilets and so again a big push back from client in relation to providing gender neutral toilets. And that’s a really difficult once because whilst there’s recognition - toilets are always a tricky one.

It’s the whole fact that people using the accessible loo may need to use it more often and as a results you’re increasing the wait time for someone who needs the additional space or they may not feel comfortable because you’re trying to combine services that are very different, different needs and requirements.

They answered to the standards, the norms, ASTM is the monster since most of our business is in the US. ASTM is number one set of …rules I guess. Simply because this had to be done because inclusive elements are included in previous designs and the standards.

The areas that are ok are the arms, the legs, the feet. Anything beyond that starts to become uncomfortable. We made sure the water splashing on deck was either predictable or easily avoided.

What we tried to do with playnook was to make it idiot proof in that way. Even with the choice, you couldn’t modify because it would take away from play value,[…] That was why we integrated some of those elements but made sure the water effect was very nice and a shading feature. We made sure it was opaque so kids playing on the ground would have shade. - It’s not an equal part, but a concern… kids will burn. That’s why usually parents stay with younger kids under shade near the play area. On the actual water playground, you’re very exposed to the sun. We wanted to integrate more shading elements. It was one of the design criteria but not as important as the rest, but important to this kind of play value.

program is that although it created some very focused bespoke opportunities in recognition that some families, or audiences members would ONLY feel safe and comfortable to access in these bespoke ways, and where possible these moments would open up to much wider experiences and programs. It’s keeping that balance between intimate and… not… not invisible, but not placing people on a platform that they don’t want to be on.

It was about thinking about those core ingredients, and creating a core or foundation. I guess you could call it an access point, a very safe recognisable way in that families would hear the language about it and hopefully feel a resonance or immediate relevance and would have their needs met, be safe, have a positive encounter.

But I do think that you never know who is going to build their confidence or seek relaxed event access as a safe starting point or first connection with us and then go into build their confidence and desire to attend another event, join a program, attend a studio, or whatever it is. You never know who is going to decide it’s the only way we’re comfortable and feel welcome elsewhere but ma de a deliberate decision. And I think both of those need respect.

You don’t have to worry about this kind of volume, crinkling from packaging. We never limit those families and not hand out things at that event that don’t support in the same way. It’s about sharing information and letting them make informed decisions about what they are comfortable with at that time. Constantly keeping that alive dialogue and messaging the fact that you are welcome and belong wherever you want to be and comfortable to see yourself, you belong.

### Enablers | Barriers

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<td>The clarity in what is being offered is such a great starting point in that. There’s a lot less anxiety if you know exactly what you’re going into, what’s happening, for how long, the elements, and that absolute clarity in what is being offered.</td>
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<td>…It’s very complex because in one respect, we do what we do and it’s specific to the gallery and strength and knowledge and expertise in terms of engagement. But I recognised we play a much greater role in the lives of the families that access the program in terms of them having routine and sense of belonging, ever having a friendly welcome, just a space where they can decompress and it’s bigger than handling clay and paint even though I’m not undermining the value of those acts.</td>
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<td>We are currently working on the clarity of the app and redesigning it because it’s a rather complicated app. We are paying attention to the contrast for the visual aids and also how the app is structured for closed captioning and blind users who read by blocks so when text is inside our outside a block it reads certain things first. We’re taking all of this and rethinking the app so it’s a good experience for people with disabilities.</td>
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<td>For someone in a wheelchair it would be to offer different moves. What I call move is the exercise style, like passive (counted by apple), and our more active ones like squats, active planks, push ups, steps, stairs, and movement brakes.</td>
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<td>Yeah, obviously, fixing the session recorder where you start and do your exercise. Making it accessible for everyone is important, it’s only audio so that need to be fixed. Then it’s visuals like font size, colour contrasts, button sizes. We had this thing where art direction were using outlines and small things, but that’s not doable for chubby fingers.</td>
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<td>You need a certain percentage to &quot;pass&quot;. If you put text on an image and if it’s a 1.1, it’s a pass but recommends the change. No one verifies, but as an accessibility, you want to check it yourself, as a designer.</td>
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<td>JLE is designed to be totally accessible in terms of access from street to train with level transfer from platform to train. You can do very easily if you’re building it. if it suits the disabled person, chances are it’s going to suit everybody else.</td>
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<td><strong>Let me get in</strong> is the obvious, can I get in, can I see it. But that’s also housing. If I want to visit a friend, if I can’t get in the door, I can’t do it. Now that becomes more wheelchair centric, but it’s also street names, signage. 2015 they put in that all places have to be visible which means low thresholds, toilets on entry. That’s been picked up by some councils but not others and that mandate is like everything except fire, not retrospective. So if they put in for planning approval before the date, it doesn’t need to happen. Let me in, the space applies to public buildings but becomes wider than that in <strong>Let me participate</strong> starts to bring in all the other issues of hearing loops, systems, visual issues that go with it, spacing in meeting rooms and one of my favorites, is how the hell do I get out of this place if something happens (think Greenfell). The institutional attitude of don’t ignore me because I’m in the corner in a wheelchair.</td>
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<td>They are <strong>No New Barriers</strong>. That’s the idea that you may inherent barriers that take time and planning to dismantle and undo, but if you commit to not creating any new ones by thinking about a variety of bodies, minds, and perspectives. Whether you’re making something new - be a working space, a new show or laying out the tables in the cafe - whatever you’re doing, you’re thinking about a variety of bodies and minds and aiming to not to create new barriers.</td>
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<td>into three groups: (i) really basic <strong>Equality Act stuff that we weren’t going to touch but they had to sort out immediately</strong>. Things like you can’t access the toilet in a wheelchair because someone put a radiator there, or claiming an accessible toilet when really it’s way too small. You have to stop calling it that <strong>It’s a slightly bigger toilet Yeah Exactly! It’s a marginally larger toilet, but definitely not an accessible toilet</strong>. So that was one group, basic equality act stuff, then (ii) the longer term strategic stuff that’s going to need - it’s an important thing to address but we aren’t going to be able to address in the life of this project straightforwardly - so things like they really need a changing place toilet which is a better standard of accessible toilet.</td>
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One of the considerations of these last two tiers is the problem of documentation: since documentation is from quite a long time ago. So when the 60s and 70s were about calculating the usability of assets and standard for settings, the minimum requirements aren’t even really minimum in that the best practice (tier 2) should be the basic standard.

It is part of the majority of the design team, but we go between being consultants and being active participants in their projects. Normally, we’re sort involved but also take the back seat when some decisions are being made because ultimately we aren’t the deciders.

Yes, sometimes it is quite similar themes where there is reluctance because of the value of it. But in one of our cases we had quite a good client who listened to us quite a bit and we provided data from the census to help him think in percentages. We showed that the data from the UK shows there is a growing and higher number of ageing and disabled people. So in showing that, there was a much larger number of people than what they had anticipated and we could show that there were translatable benefits.

I may have mentioned that clients were much more aware I think of some of the challenges that people have been facing - but I suppose that because people are now working from home, seeing that as an opportunity to do something about it. They have all these empty buildings and there’s no excuse or disruption. All the possible barriers to implementing these things was no longer there. And so I think we definitely noticed more clients approaching us and saying they wanted really good things, go beyond the minimum they were looking at previously really wanting to be the best in what they do and offer the best office or workspace or whatever.

It was really successful in this occasion having someone employed and specialising in reaching and contacting people.

And part of that will be challenging whether it’s the right, maybe challenging is too strong but a discussion of whether or not anything in those policies can adapt to better reflect what they’re trying to achieve and who they’re designing for.

Let’s say if we had 50 great ideas, we can only develop 10 of them because we don’t have the resources and time to develop and test them all, and second manufacture them. When you create a manufacturing package, you employ 10-12 people from different departments, and keep the materials you need in stock, you have to have everything in place for when you get the order and make and send it.

Now, we’re more expensive than almost everyone because we manufacture our own steel that’s high grade, and we use really durable materials like polycarbonate and those fancy things. So we’re always at the highest price range and we have our notoriety and our aesthetic of the designs that are appealing to some or most clients.

Although we spent more time developing and setting in place these things. At the end, we projected that it would cost us less because we would need less people to deal with it after.

Everyone was also burned out, overworked. Everything that we had to deliver was too much for the delays. One of the worst experiences of product development I've ever had. We had to three months to develop, manufacture, and test it.

So I think mainly the issue was the quantity of work that created frustrations because we had difficulties prioritising some games of structural qualities before the others.

it’s an inclusive play area, that it falls under the standards that we have to respect for the US. Because under ASTM standards, you have to include things like transition decks and no protrusions so you don’t trip, etc…

Anything CNC’ed. 4 axis, we didn’t thermoformed so we worked with steel, copper, metals mainly. So anything that was machined could be changed or tested quickly. That’s in house. It couldn’t be anything external.

It was such an unnatural process given the time frame that, as is, no point in the process would user involvement have been useful because we skipped entire elements that we should have searched and tests.

There was no specific budget, since we’re R&D, we have a good amount of grants. So we had a lot of extra money into the studio.

One of the intentions was to reduce the amount of labour it takes, time and money wise that it takes to customise. Although I honestly think that’s a mistake given the different layouts, slopes, pools. All these small intangibles accumulated create a big monster.

But there’s a general six or seven different standard layouts that are usually found in pool projects or wet playground designs. So for these, we had figured out six or seven layouts in playbook. I think 6. The things most difficult to fit was the slide. At the end you had a run which lowers your speed as you go down the slide. There’s a big pool of water that’s about 8 or 10 feet long and that’s what protrudes the most in the space. But you could have it left or right and that’s what changed the most from a top view layout. That gave enough flexibility to fit better I suppose.

So it’s been really useful from my perspective to have that intensity and regularity and dialogue and lived experience alongside those individuals. Both to determine next directions, and as you suggested to evidence the value and worth, and its evidence of integrity as a way of working.

I think to bring it down to basics, my role and this program is externally funded. At the point where I started, I was handed essentially a successful funding application and that did - pre my arrival - outline some parameters and basic structure like the fact it would be weekly encounters. It’s not that I had full creative control of the way this panned out.

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<tr>
<th>PROJECT CONSTRAINTS</th>
<th>Enablers</th>
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<td>Fea</td>
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<tr>
<td>One of the considerations of these last two tiers is the problem of documentation; since documentation is from quite a long time ago. So when the 60s and 70s were about calculating the usability of assets and standard for settings, the minimum requirements aren’t even really minimum in that the best practice (tier 2) should be the basic standard.</td>
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<td>It is part of the majority of the design team, but we go between being consultants and being active participants in their projects. Normally, we’re sort involved but also take the back seat when some decisions are being made because ultimately we aren’t the deciders.</td>
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<td>Yes, sometimes it is quite similar themes where there is reluctance because of the value of it. But in one of our cases we had quite a good client who listened to us quite a bit and we provided data from the census to help him think in percentages. We showed that the data from the UK shows there is a growing and higher number of ageing and disabled people. So in showing that, there was a much larger number of people than what they had anticipated and we could show that there were translatable benefits.</td>
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<td>I may have mentioned that clients were much more aware I think of some of the challenges that people have been facing - but I suppose that because people are now working from home, seeing that as an opportunity to do something about it. They have all these empty buildings and there’s no excuse or disruption. All the possible barriers to implementing these things was no longer there. And so I think we definitely noticed more clients approaching us and saying they wanted really good things, go beyond the minimum they were looking at previously really wanting to be the best in what they do and offer the best office or workspace or whatever.</td>
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<td>An awareness I had very acutely, I think it was about bringing it back down to basics; we needed a space, with an open door - you know physically and metaphorically - a space, or a sort of recipe that mixed up these core ingredients I reflect on.</td>
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<td>And if you look at the guidelines - by that I mean apple dev guidelines like you see button sizes and contrasts for example. They underline that a lot for accessibility. People will put a specific button because it looks good, but it won’t work for someone with big fingers who is also touching three other elements around it. So they are how we moved to focus on inclusivity as a fitness app, instead of. When we were product driven, we worked towards gamification rather than lifestyle because we saw the gap at that point, but now people as less likely to pay as much for a game than the social aspects like right now, they will for organic growth, the social aspect is more important. So it was a conscious decision we made a couple months ago.</td>
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<td>It’s always been our goal to move to android. We have the research done and it’s feasible. But since we detect with the phone, we also have a patented algorithm. To convert the alto to android is a big step to take. We also use phone hardware like gyroscope, alterometer, and pressure in the phone. Apple uses the same for all devices versus android which depends on the device. The components differ and we would have to set the algorithm for every phone. It’s more complicated. It’s possible and we’ve tested it successfully with androids. As a company, it’s a bad decision to make the app work on a huge market. We prefer to focus on a single market, then we will spread it out once it’s perfect. So we’re not spending money on every platform but exclusive to iPhone users.</td>
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<td>There are the “laws”, you can get sued, but there’s no law especially for visually impaired people. If you send out an email, there has to be a description. There was a lawsuit with Mailchimp about that. If someone if disabled they should be able to have an audio description of the image (the text of the image)</td>
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<td>There’s built environment and building regulations, but no standards on open spaces. That leaves public realm at large. There’s bits and pieces around, one called inclusive Mobility which gives lots of dimensions and spaces and makes recommendations. It’s guidance not regulation. JLE hired a guy from queens council and London Underground moved to Westminster where I was sat with Legal. What a pay rate, but boy was he good. We’d sometimes go down to the coffee or vending machines and knat on about the project. What I got from legal was that guidance is only guidance, its not legal. You go in front of a judge and have them comply with guidance, you’ll lose.</td>
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<td>2015 they put in that all places have to be visible which means low thresholds, toilets on entry. That’s been picked up by some councils but not others and that mandate is like everything except fire, not retrospective. So if they put in for planning approval before the date, it doesn’t need to happen.</td>
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<td>It’s an old town so there are complications, but London is an old town, and they’ve made the public realm totally accessible by way of dropped curves and signage, and London was ready to commit the funding. But in an overall project, installing dropped curbs is peanuts in the budget.</td>
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<td>When London Underground moved under JLE it became annual budgets even for capital projects… so how can you plan for the future? You can’t. And then the magic one, you can’t carry money over and if you didn’t spend it all this year, you obviously don’t need so much next year.</td>
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<td>First, at every point we were looking at it from audience, artist and staff. At no point was it just about doing something from a public facing way and have to look at it from all those areas. Second, We were also very clear that I was leading the process but not doing the work for them. We were designing/guiding the process with our politics and understanding of disability. Arts and Culture were very much at the heart of that but the BAC team had to do the actual work.</td>
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<td>I think there’s a lot of anxiety around getting it wrong around disability. We hear lots of places say they don’t want to get it wrong or think that’s too specialised and somebody else is probably better at doing it that us. I think a big part is taking away that fear and showing that this is already part of your work but it hasn’t been part of your work just means that you haven’t been doing that part of your job or it hasn’t been realised as it should be.</td>
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<td>And there were things that were perhaps less visible, it was hard because part of the refurbishment they have a single lift and the lift had lots of issues. That did affect our timeline because we have to have basic physical access. There were times where we thought we could just work in accessible downstairs spaces, but I was ready to compromise on this. If we have to pause and wait for us to create the best conditions in the building to make this happen. Disabled people have waited hundreds of years, we can wait a few more months, it is important to do it right. Doing it badly will send the wrong message and compromise on things we don’t want.</td>
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### USER INVOLVEMENT

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<tr>
<th>Testimonial (excerpt)</th>
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<tr>
<td>And then on a third tier, we push past all of this and start providing information from user feedback (user groups) give them insight on some of the trends that are happening and thinking about what is fit for purpose throughout the life cycle; from construction to end of life (considering that the building has a fifty year life span).</td>
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<td>Not just those specifics; wheelchair users have another perspective to it where we can show benefits to ageing users or prams. So one of the concerns that we have looked at is the idea of people that do not fall into categories; ambulatory, disabled, different forms of access needs, or religion. Things that aren’t seen in the clear categories of the regulations or best practices that fall out of the categories of things that are part of the built environment.</td>
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<td>Of course it depends on the project, but in some users a really an extension to the team and we have consistent dialogue with them. In other cases it is the review, and in some consultations so for instance at the moment we are working on a project and Arup, we have our consultants are working with them but the council has an access group that they want involved in the process, so the client is managing that side of it. We are working with the local council and they are meeting once a month or two months with this access group to review and see what they think.</td>
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<td>where it's more successful, it's been where it's driven by the client than through us, because in those cases, there can be a very conscious effort to involve the appropriate internal stakeholders to reach out to the community, to connect with a wider stakeholder group. Where we organised the groups, it’s been a combination of probably an official term, but umbrella groups.</td>
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<td>we’ve employed an agency to specifically help recruit people; the type of consultation we want. In that one, we were very conscious that consultations about cycling attract avid cyclists, not who we were looking for. So instead we employed an agency to contact people who don’t cycle because those are the views we are after and people who lack the cycling infrastructure they need because that would likely be where implementation needs to happen. It’s making sure that the voices we hear are not the ones we always hear. The hard to reach stakeholders are only hard to reach because people probably haven’t bothered trying to get in touch with them.</td>
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<td>If I were to sit in their office for a day and see how they move in the space and are expected to interact with each other and in the space. That’s what we’re trying to get out of it, not necessarily sitting and watching them but sometimes observation but most of the time through the discussion with end users and people who are setting the policies and management strategies in place and getting feedback in that way.</td>
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<td>The original elevations, we had architects and designers working on how to build those elevations based on the clients needs.</td>
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<td>Anything brought forward was always met with resistance, firstly from the engineers who hate change with a passion. And I’m saying this because the engineers that we mainly had were an older generation. They were maybe the age of... boomers? Boomers. So I think that just bringing forward an idea from someone that’s young and kind of wide eyed generally they’re first response was ‘you’re crazy, no.’ So we had to go through a lot of back and forth, back and forth, back and forth, and start to include them in part of the ideation process to make them think the idea was a s much theirs as ours.</td>
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<td>Yeah, it’s based on research too. We did a huge survey, we have about 150 sales reps. So we did a survey with them and back to back surveys trying to figure a bit other than the research from literature review</td>
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<td>There was none. We had to fight to have user tests, we had to fight... yell almost to have one user test. It was very difficult to organise, difficult to get done. We’re also in Montreal, so winter time can’t really test anything. It’s really cold outside, even in our R&amp;D section of the warehouse, very difficult to test things with water with kids. It was always a hassle, begging to get tests done, nothing was user led. Although I loved to do observations, so I would take my lunch hour at a splash pad and watch kids play, in a non-freaky way because I had my Vortex T-shirt on, and take notes. But that was the extent of it.</td>
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<td>No one mandated that of me, I brought it forward, as well as the idea of inclusive play. In my case, my client is not my user, my client is my client, my user comes farther down the line.</td>
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<td>the design team hired a behavioural psychologist who specialised in children with disabilities, mostly cognitive and she studied play for cognitively disability kids (at Concordia). We hired her as a consultant</td>
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Yeah, final fine tunings. So we were working with water games and testing water games, if it’s too intense, too subtle. There’s big assembly to water features, but there’s also small pieces like nozzles that could be machined within 2-3 hours and modified that were easy to fix. But pre injected, thermoformed, rotomoulded pieces were set in stone. So it was more for the details, the final experience.

A child is never on their own, you need to think about it as a group. So generally inquiring in the beginning because there’s nothing to test since there’s no product. But asking what are the needs, the nice to haves, what frustrates you about what exists in general. Then when we get to layouts, the ergonomics of it, maybe testing it out with actual people with disabilities, cognitive and physical, and of course the water effects and play values and the end.

And the role is very much about working in recognition of the fact that individuals especially families with children with complex needs were recognised to be basically not visible, not attending the gallery. An acknowledgement that there was a reason behind that.

I mean, I always seek to meet people as people so working with a new participatory artist is no different from working with a new participant. It’s about the whole person and identifying areas of interest and I would say strength in terms of employee, not that I would maybe have verbalised in quite the way in a participant.

Like the fact that when you actually create a space that invites people to bring their whole selves and create trust that they consider the realities of their daily life to have some relevance and value beyond their home. The bureaucracy or forms their filling or conversations with commissioner, head teachers, trying to get certificates. To just be saying it because they feel it will be heard and respected and have the ability to shape moments that grow from that and become another starting point.

If you put the work in to create time and space that genuinely flexes with actual people and recognises their expertise because I’m such a curious believer in the fact that every single one of us is an expert in our own lives. It’s completely logical, but I think it’s so regularly forgotten by people in power in all respects.

We had a talk with our users and one of them who’s actually in a wheelchair; they like the app but they can’t use it. They can do the movement break and that’s about it so we’re thinking of trying to find ways to provide exercise or allow those people to have the same experience and advantage of moving every hour. So it’s a big concern that came up recently.

He’s a good user base to have and more recently we had user interviews where one person said they were annoyed that the reps weren’t counted during squats for example. Since the phone is in their pocket, they couldn’t check to see if the missed a count or where they were. Our rep counter vibrates at the start and end of reps but doesn’t keep track during. People gave comments or messages on the app store, users reaching out trying out, ‘hey I don’t get what’s going on, I’ve lost sight of this or that because the app became unclear.

We aren’t massive so we’re still at a stage where we can afford to test directly on our users and get feedback on them versus user testing groups. But, for larger changes, we do contact users; regular users, power users etc. We select people and schedule video calls and will send prototypes which they can open on the computer or phone. I’ll send that. We also have friends of the company who are power users, we get their feedback.

If you had a visually impaired person in the commissioning, that wouldn’t have happened. You don’t absolutely need someone disabled, but at least people who know about the issues of the disabled.

Some councils do, others don’t, but some bring in disabled groups at commissioning stage to also look at the installation, (Commissioning in the engineering term is putting into service). JLE and London Underground do this quite regularly. So my bother had a woman who was paraplegic with some complaints. She could get around with sticks, but nowhere to park them and issues at the reception area. He said there is no way you can argue with the person standing there in front of you showing you the problem.

Yes, if you’re working and being employed, you won’t be eligible for some benefits. Disability allowance which has now been stopped, could. Universal credit is wage related.

ChangeMakers was an opportunity for NPOs to work with an underrepresented or marginalised leader. It was about investing in leadership in people who were underrepresented in the sector. We’d been working with BAC in a very flexible and creative way on a couple different projects over the past years. My background is in Inclusive Play so I’ve done lots of work in the play sector embedding access in a really full way in mainstream play services at every level.

It was funded by arts council and ChangeMakers programme and that was linked to Battersea and had this existing relationship. We had a closeness and were involved and got involved in every element of the organisation but also kept that external perspective so we weren’t staff members straightforwardly but had wiggle room. But were treated as such in lots of ways. It helped have a freedom and access to leadership that we probably wouldn’t have had if we were just sitting within the existing structure.

Then (ii) there’s this group in the middle that we think we can explore together and address through the relaxed venues process and have potential. We would then build teams from within Battersea for each of the ideas with cross-areas of working. People would have relevant experiences or responsibilities relating to that area. Then let’s think about those things creatively, come up with suggestions, test them out, and see what works.
The energy of just having basic things met at that point was quite an overwhelming experience and I think there was definitely a point around this time last year where I could see progress shifting across the cultural sector and other sectors. There is a concern that I really don’t think as an artist and a creator - I have to address the barriers before I get to make the work that I want. That can feel really frustrating, I’m having to address all these barriers. I’m not able to just do what I want - there’s lots of people who want to be an artist but I don’t feel like I have that choice because those barriers are real.

We can’t build a relaxed venue on the stress of the staff so it was really important to try to think about. There was a lot, that felt quite exposing, not exposing but I was very aware of that and going into that process, I took a decision to expose myself to potentially difficult discriminatory or challenging situations but I definitely take my responsibility seriously when it comes to inviting other disabled people into that space. It doesn’t have to be perfect - I think that’s the whole point - you have to start somewhere, and you have to learn.

- We did invite critical friends in, we were stress testing but were quite careful who that was happening with. People who could cope well if something went wrong, you already have that trust and camaraderie Yeah certainly in the beginning and in the spirit of it being an experiment.
### DESIGN STAGES

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<td>In good cases we would like to be at the starting stages the very beginning of the project. Big concept stuff like the orientation of the building, spaces, limitations, heights. So in a typical project ideally we are shared the proposal and we do a desktop review. To get it moving forward, we try to frame these values within their objectives. And that’s where the point of ‘the earlier the better’ because we can better embed this thinking into their frameworks and into the dialogues and discussions and have a longer talk across the project.</td>
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<td>I think also for people especially earlier on in the project stages, it's a way of framing that and making it, or managing the expectation as to how much space they might need, what sort of things they may need to think about even really early on from a site selection perspective. Making sure they have the right location for whatever project it is they want to design.</td>
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<td>Mainly bringing some design methodology that we studied. We really just tried to bring forward ideas and criteria that included every type of inclusiveness.</td>
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<td>No, so there was a niche in the market that was lacking. We researched before with marketing, sales, and senior management. We tried to identify what was lacking and what we could bring forward that could fill the gap at a decent price point.</td>
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<td>So that’s what we tried to shed light on, and we tried to establish design criteria that helped this type of user.</td>
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<td>M: Okay, so by the time you’ve tested with the users, you’ve already been through the proof of concept... T: We’ve already established everything yes.</td>
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<td>When it came to developing something new, you first have to develop, then prototype it, then test it, watch it fail, then it’s a circle of optimise and test. Usually how we worked, the designer created an idea, made a 3D, sent to the engineer who looked over it and optimised for production. Since we’re a manufacturing company, we’d walk over the the production technician who would also propose changes, make them with the engineer, then manufacture it, plug it, test it, criticise it, and on and on and on.</td>
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<td>It was such an unnatural process given the time frame that, as is, no point in the process would user involvement have been useful because we skipped entire elements that we should have searched and tests. Although it’s of course the first steps that we would need to inquire and learn about general user needs, and it’s not only about again - when it comes to play and children - it's about the parents, carers, other children.</td>
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<td>So many other things before that. But this was part of my concerns, my personal concerns. But we’re a team. It’s a structure, so it’s rather complex project; there would be safety, optimising some of the assembly, some of the materials, in general optimising on multiple levels. That would be the first priority. Yes the play value is important, the user experience is important but also the project management. And for the most efficiencies, let’s say the most ecological way to build it using existing products that we have or materials that are recycled, that have been tested. So there’s a bunch at different levels of optimisations that I would have liked to have had or done.</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>You’re stuck with it. You pay more to get it fixed. There’s a play specialist who designs with clients so the client gives them a top view drawing with all the elevations, and they design what to place where given the budget and intention or desire. Something more adventurous, more discovery, soothing, relaxing. There are designers who actually design with the intention of having a good play value with the new elevations. But the customer determines everything. There’s a list of things where they just check off what they want or not. It’s plug and play.</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>the way it makes most sense to me as an individual and resonates most is ‘start where you are now’. people in space, mediated by material, substance or something, seeing what happens and ...it’s so much about feelings it’s very hard to verbalise. Start where you are now is a good explanation for me, bring it down to the moments you have with people.</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>It doesn’t limit, you know a structure that doesn’t contain you, but gives enough support that you can step away from it but know it’s there and still got your back.</td>
<td>x</td>
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</tr>
<tr>
<td>If not, if I do wireframes a box is a box, I don’t care what the image is, but my notes will just be “person doing squats”. I don’t need to know any more, just this information goes here, and this type of information goes here and this action here. And then when we go through the design and add photos.</td>
<td>x</td>
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</tr>
<tr>
<td>Our other main differentiation that’s giving us traction is the inclusivity aspect, as the algorithm we’ve created to count reps. We validate that you did the exercise versus cheating. You can’t lie about the amount of push up, squats, planks. This is how we got partnerships with insurance companies who want to promote healthy lifestyles. Since we validate, they can validate their people are exercising and possibly offer reduced rates. How clever. If you check on our website you’ll see luminos which is part of sunlife and manulife.</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Basically, because I’m the only designer in the company, I’m trying to build a flow within the marketing and product. It’s more to see how their companies deal with user experience. How they integrate them, what’s their role. More of a reassurance while trying to figure out if I’m doing things right. I founded the department but I still wonder if things are good since I’m not</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>“I don’t care how much time you spend on getting the design right, providing you don’t go beyond the date, get the design right. Because at that point it’s just words in a document or lines on a drawing. It doesn’t cost anything to change. It’s about getting the design right to start</td>
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with. I’m a great believer that that should happen… it doesn’t as we’ll very often find disabled people aren’t involved at the early stage and with Universal design, if it suits the disabled person, chances are it’s going to suit everybody else.

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<tr>
<td>People saying they are now trying to satisfy shareholders, so you cut numbers, do this and that and don’t spend anything you haven’t got to, so the distribution network starts to fall over.</td>
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<td>X</td>
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<tr>
<td>Yes, if it’s done on time and within costs, but doesn’t work. Everyone will remember everything about it. No one will care it was submitted on time, or on budget. It is about getting it right.</td>
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<td>We obviously didn’t solve all of them but it was part of a live conversation. So I suppose that’s one way of addressing fear is giving people real world experiences that they can drawn on, and so they can manage these situations.</td>
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<td>Testimonial (excerpt)</td>
<td>Enablers</td>
<td>Barriers</td>
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<td>Yes, sometimes it is quite similar themes where there is reluctance because of the value of it. But in one of our cases we had quite a good client who listened to us quite a bit and we provided data from the census to help him think in percentages. We showed that the data from the UK showing and higher number of ageing and disabled people. So in showing that, there was a much larger number of people than what they had anticipated and we could show that there were translatable benefits. Not just those specifics; wheelchair users have another perspective to it where we can show benefits to ageing users or prams.</td>
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<td>so we’re getting commercial clients saying that “people probably aren’t going to want to rent office space in the same way as before”. Therest probably going to be more flexible working and hot-desking, people not necessarily coming into work. Working from an office in the traditional way for years, in the past year we’ve proven working from home the whole company isn’t going to fall down and the economy won’t go bust. In order for companies to adapt to that new future, they need to think about it in a much more holistic inclusive way.</td>
<td>x x x</td>
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<td>It suggests there are new ways of designing spaces to try and future-proof them. That’s a much more succinct way of saying it that I managed!</td>
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<tr>
<td>Since lockdown, we haven’t had new hotel clients so I don’t know but I would imagine from discussions in other sectors, there’s a lot of questions about especially in public and communal areas. Everyone touching everything and how hygienic that is going forward, how comfortable people will feel using shared amenities.</td>
<td>x x</td>
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<tr>
<td>For existing buildings we tier the recommendations based on essential etc... and the way we try to distinguish between those, something essential is something is that buildings or space that directly discriminates, prevents them from accessing a facility, service or something that constitutes a health, safety or risk. And then recommended are items which doesn’t directly discriminate or segregate prevent access but might make it more difficult unnecessarily. Then preferred items are best practice, what we should be aiming for. I make the distinction for where we do have existing buildings, we recognise (assuming we don’t knock down and start again) there are those constraints to work within. Tiers are to frame the discussion for the budget and prioritising the most important and add the most value to the experience overall.</td>
<td>x x x</td>
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<tr>
<td>they decided to design the core so that it could be split in whichever and be flexible to the future. They essentially had toilets with partition walls to lock them to create different blocks or you could just remove and unlock the doors for a whole type of toilet. Understanding and recognising “fine you need to reflect needs at this point but equally the fact that it’s not going to necessarily remain that way to accommodate the diversity and trends happening across the globe</td>
<td>x x</td>
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<td>I think yeah... no, I think it would be useful... I suppose for the clients who want to do better. But I’m thinking of some client I talked about earlier who want to be best in class and gold star exemplary building, I think that would be really useful thing for them to pick up and to understand what that gap is between minimum standard and what they actually want to achieve, their vision. So I think that would be a really useful thing. I think also for people especially earlier on in the project stages, it’s a way of framing that and making it, or managing the expectation as to how much space they might need, what sort of things they may need to think about even really early on from a site selection perspective. Making sure they have the right location for whatever project it is they want to design. I think that would be a really helpful tool.</td>
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<td>Second, were the materials. We tried to play on tactile play, and tried to include especially with the polymers included. We had roto-moulded polypropylene and injected moulded polyurethane. We included textures that were really signalling where you would like to manipulate and play with the water effect.</td>
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<td>By having one manifold, we’ve created space on the six different facets and this is where we added the inclusive games. This is where the poles extended to the ground. But with a feature on them. So that notion was very interesting because we added games without having to add anything else, and the games were ground level. That was something that the elevation designers found very interesting.</td>
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<tr>
<td>And this is a very... we’re talking about a nozzle on a specific game that needed all that process, so imagine developing 20 games, or 10 games on a structure that also needed to be designed, and all of this is done by vitally 4 people... it was a lot.</td>
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<tr>
<td>Kind of what their take on it was or how they perceived things. That’s how I came up with the sheets with the user types, and types of play. We also used the types of play in our marketing campaign of the playout.</td>
<td>x x</td>
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<tr>
<td>But I guess, I’ve understood it as having the intention of not silo-ing the teams and trying to ensure that there is more concise, more overarching philosophy around being a site and venue that welcomes the full community around it. So we’re not silo-ing this group as working with children, and schools, and families, and this group with adults or practicing artists. It’s much more about unifying a sort of outlook of unifying as a site with an open door.</td>
<td>x x x</td>
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<td>It’s not an ultimate aim to have a child with Autism and doesn’t eye contact. You’re not hoping to work with them to mend or change or seeking to say that the non-relaxed version is the standard or normal or one you’re aspiring to be comfortable in. Who am I to say that it’s the baseline. My own sensory needs would be met within a standard screening but again that’s MY sensory needs. So I think it’s really important to me that we consistently have offers which very certainly and confidently say ‘these are the fixed conditions and certainties’.</td>
<td>x x</td>
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</table>
So there is a gesture of connectivity and reminder that we were here, are here, and will be here. We remember you and miss you, but there’s no pressure, not that a sense of pressure we were seeking to create.

| x | x |

That’s what we thought could be cool. If we could decide, if we could be the standard for accessibility. That’s what came out of our meeting about how we would attack this. We want to make something beautiful but that could be standards of accessibility. That was our motto at the end of the meeting.

| x | x |

The chief engineer said, ‘well you’re in the business, give it a go’. The engineer knew it could happen, he was Malai and had seen it in Singapore. Something about 99% of drivers who are involved in an accident like that (death on tracks) never drive again. So you’ve got the loss of their training and the cost of training someone new, the cost of disruption of service which can all go in the business case.

| x | x | x |

In terms of where relaxed venues go next; it’s not about making every venue say they are a relaxed venues, I’m interested in that methodology developing and being deeply embedded into those organisations.

| x | x |

You can’t make choices just because you can, you have to understand why you’re doing it to be able to communicate it or replicate it for different audiences. Certainly in our experience of making work, we did this Neurodiverse presentation of Samuel Beckett play’s Not I. Part of that because there was a cultural curation about what work was and was not being made accessible to disabled people. We would often hear venues say they are interested in relaxed performances but they don’t have the right type of show yet. And it’s like what’s the right type of show! Exactly! So by taking a really obtuse bit of intense theatre like “Not I” that’s part of that canon and demonstrating how you can make it accessible to audience and performance at every level without reducing intensity. If we can do Not I as a relaxed performance, then no one can say anything to us.

| x | x |

Relatively quickly people started talking about their own access requirements and having those conversations, people start thinking about it and applying it to their lives and to themselves and it was interesting that it opened up conversations and brought out talks that hadn’t felt as easy to have before.

| x | x |

And it’s the same learning process you apply in every aspect of your life. It is your responsibility, you do have to think about it and you do have to start building skills and use them and learn from them. I would often say in response to fear that as a disabled person, I’m so used to not being thought about at all and not being considered. It’s so much worst to be totally ignored, then to have someone try and not have gotten it perfect, because that’s the start of a conversation. It’s better to start a dialogue and create a conversation than be in a situation where you are being quietly excluded with no recourse for any or a wider understanding of that being the case.

| x |

Specifically, this activity is in 3 steps.
1. Read over the proposed seven aspects: Definitions, and descriptions are provided. Your reviews and thoughts are appreciated!
2. A design process was designed that suits your way of working; for each aspect, please indicate where you see it being most impactful or valuable along the design process (an example is provided below).
3. Once the table is filled, we will take the time to talk together and review the choices.

Example:

<table>
<thead>
<tr>
<th></th>
<th>Definition</th>
<th>Description</th>
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<tbody>
<tr>
<td>3</td>
<td>User Accessibility</td>
<td><strong>Definition</strong></td>
</tr>
<tr>
<td></td>
<td>• Ability for users to interact with and understand a design.</td>
<td><strong>Description</strong></td>
</tr>
<tr>
<td></td>
<td>• Accommodate user capabilities, personal characteristics, and access requirements.</td>
<td>Aspects of the project or discussions which have to do with access requirements. This includes designing according to regulations and access standards (like visible signage, hearing loops, suitable dimensions or clearances, and step free access within buildings). This determines what abilities are needed to use a building, space, or artefact. Accessibility includes disability access needs as well as other characteristics protected by the equality act (such as race, gender, and sexual orientation). At a minimum, the design should comply with regulations to be ‘technically usable’ but can be improved by addressing the quality of different users ‘experiences according to their needs/requirements.</td>
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<tr>
<td></td>
<td>• Comply with relevant codes, regulations, acts; consider guidelines and standards.</td>
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</table>

Then, using the RIBA stages,

++ Two crosses show that it is **very important to consider** and include User Accessibility in Stages 1, 2, and 6;
+ A single cross shows that it is **good to consider** user accessibility in stages 4 and 7;

The blank boxes imply that user accessibility isn’t prevalent or needs to be as considered in stages 0, 3, and 5.

<table>
<thead>
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User Accessibility
Ability for users to interact with and understand a design.
7 Proposed Aspects to Designing Inclusively

1 | Proof of Logic

Definition
• To compel with reasons that demonstrate value to the design.
• To establish criteria with evidence and statements or inferences deemed valid to those involved in a design project.

Description
People (team members, stakeholders, clients) and documentation (regulations, guidelines, brand standards) create different goals in a project. The varying goals may aim to strengthen the business case, gain a larger client base, create a more reliable product, or create innovative and thought-provoking designs. Proof of Logic is about showing how the involvement of disability perspectives adds value to specific or overall goals. Some examples include reasoning the translatable benefits of one type of user to another, optimising manufacturing, or construction processes, highlighting social values, avoiding damages that come from ignoring certain access requirements, or providing compelling examples of personal lived experiences of being included or excluded.

2 | Governing Ways of Thinking

Definition
• Mentalities, norms, or standards that influence how something is conceptualised; usually controlled by social, cultural, ideological, or economic values held by a dominant group.

Description
Governing Ways of Thinking are well established mentalities that motivate people's decisions. They frame how something is perceived and shape our assumptions. Also known as Status Quo, normative thinking, or Governing Mentalities (formed by widely shared values, norms, expectations, and assumptions that hegemonize society). They can promote inclusion, but 'traditionally' marginalize disability. A single person, a group, a company, or a society can have different governing ways of thinking that intersect.

3 | User Accessibility

Definition
• Ability for users to interact with and understand a design.
• Accommodate user capabilities, personal characteristics, and access requirements.
• Comply with relevant codes, regulations, acts; consider guidelines and standards.

Description
Aspects of the project or discussions which have to do with access requirements. This includes designing according to regulations and access standards (like visible signage, hearing loops, suitable dimensions or clearances, and step-free access within buildings). It can also include personal positive or negative experiences with accessibility. This determines what abilities are needed to use a building, space, or artefact. Accessibility includes disability access needs as well as other characteristics protected by the equality act (such as race, gender, and sexual orientation). At a minimum, the design should comply with regulations to be 'technically usable' but can be improved by addressing the quality of different users' experiences according to their needs/requirements. Sometimes, projects can find it useful to design according to non-mainstream access requirements. For example, designing a website that does not rely need to rely on vision (seeing the screen) or touch (typing, moving a mouse, dragging fingers on a trackpad).

4 | Project Constraints

Definition
• The imposed restrictions to a project plan; includes budget, timeline, processes, requirements, values, and participant availabilities.
• Guide a project forward and frame its opportunities during the process, and estimated outcomes.

Description
The context, time, resources, and people available for a project frame what can be achieved. Designing inclusively considers the relevant documentation like standards, guidelines, and regulations. These can impose minimum requirements and restrict what is possible. Some ideas are also limited by the established materials or manufacturing processes, ongoing contracts, and production delays. People’s roles and responsibilities also frame the project. It is important to find out who are the key leaders, gatekeepers, team members, and potential additional consultants/support. It is even more important to ensure people are available within the project time frames or during specific phases.
5 | User Involvement

Definition
- To take part in a design project as someone who uses or interacts with the design outcome.
- To listen to or include (the concerns of) those using a design or who are affected by it in some way.

Description
Involving users means to have their experiences, thoughts, or insights included within the design process. They may provide advice about current designs, recommend changes, advocate for and help identify unmet needs or oversights, or test out prototypes and help make design decisions. Users can be recruited from personal networks (as critical friends), may be provided by the client, or they can be recruited from local councils, recommended by advocacy groups, or through agencies (keep in mind to provide specific requirements and expect delays to find the right users). There are different degrees of involvement. At a lesser degree, users may be represented as a ‘mythical persona’. They could be advocated for through a representative or subject-matter expert / consultant. To a greater degree, they may participate in tests, as equal team-members across the process, or as leaders who guide the project. In these cases, it’s important to remember they are experts in their lived experience but not necessarily in designing; they may need help to express, defend and negotiate their views in the project. It is also important to consider how they are compensated. They may be on a permanent or short-term contract although this may be complicated by universal credit programmes. Alternate compensation can include gift cards, or paying for transport, accommodation, or other resources.

6 | Design Stages

Definition
- Development strategy organised into distinguishable parts, separated by milestones (significant points in development). Each phase consists of specific actions, objectives, processes, results, gatekeepers, and participants.

Description
Design stages form the design process which may differ from one organisation, team, or project to the next. There are usually four main phases to a process: planning, designing, making, and using. The roles of a user, or disability initiative or advocate will likely differ in each phase. Consider the governing ways of thinking, and the project constraints when entering each phase (or sub-phase) to understand how to create the best proof of logic, and how to best involve users.

7 | Outcomes and Impact

Definition
- (Outcome) The consequence of decisions made during the design project and (impact) the after-effects of decisions to the final design.

Description
During the project, team members will go about their work and complete their tasks. It is important to keep sight of the end goal, otherwise even small oversights may compromise the design. Specific key moments may present themselves or need to be provoked to ensure that ‘inclusive’ goals are met. These decisions may change the outcomes. It can be very useful to explain the impact or after-effects of decisions to ensure a good design. It can be useful to keep in mind that small decisions can impact access and lead a user to think “I have been forgotten again; I am not welcome here!”. This can be large access issues, or small oversights like misplacing the accessible toilet key, or installing a bin in front of the ‘automatic door’ button.

On the Next Two Pages (Step 2) ...

Page 1 presents The RIBA (Royal Institute of British Architects) Architecture process which we have discussed before. Our email exchanges confirmed that this is what most closely represents your way of working (from our email exchange August 31st 2021).

- No changes were made to the process.

We can talk about further or more specific changes if needed. Otherwise, page 3 presents a table with columns for each phase and a row for each proposed aspect. Please fill in the table as shown in the example at the beginning of this document.
## Proposed Aspects for Designing Inclusively

### Proof of Logic
To compel with reasons that demonstrate value to the design.

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Important to determine "level" of 0 and assess need for construction when things start to get value engineered out/devise. Important also in use for following through intent. Once established at 0.1, it serves as brief completion through design.

### Governing Ways of Thinking
Mentalities that influence how something is conceptualised.

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Important to understand baseline / legal requirements throughout, but problem that this may be seen as "minimum" and project does not stretch beyond this.

### User Accessibility
Ability for users to interact with and understand a design.

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Important throughout but see above for 'Gov. Ways of Thinking' regarding the risk of minimal provision.

### Project Constraints
The imposed restrictions to a project plan; includes budget, timeline, processes, availabilities.

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Considering this from 0.2 means that the constraints can be mitigated to (hopefully) not compromise inclusive design. Then acts as brief for remaining stages.

### User Involvement
To take part in a design project as someone who uses or interacts with the design outcome.

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Important throughout but especially at the design and use stage where intervention is possible. Important for construction, but wider issue re accessibility of constrcution sites at the moment.

### Design Stages
Development strategy organised into distinguishable parts, separated by milestones.

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Not sure I understood this one — not answered at the moment.

### Outcomes and Impact
The consequence of decisions made during the design project, and the after-effects of decisions to the final design.

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Important throughout for clear audit trail and documentation for understanding and feeding into design/operations decisions.