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Screening Smart Cities: Managing Data, Views And Vertigo

There is a long history of imagining how the cities of the future might improve on those of the present. The past fifty years have seen two periods in particular when many architects, planners, designers and visionaries were imagining new urban futures. The first was between 1960 to 1974, and the second began a decade ago and is still underway (Dunn et al 2014). Both can be seen as responses to periods of structural crisis and transformation that were expressed especially clearly in urban social relations, city governance and built environments. In the 1960s and 70s, physical blight and social unrest seemed to point to the failure of modern architecture and postwar planning; more recent visualisations have responded to the urban consequences of irreversible climate change and the need for cities to become more sustainable.

In response to the current urban situation (which is of course immensely complex and diverse), many city governments, corporations, startups and thinktanks are advocating the 'smart city'. According to recent research by Rand Europe, over half of cities in Europe are hosting two or more 'smart' initiatives.¹ The term 'smart' refers to the use of various kinds of digital technologies to achieve environmental sustainability by encouraging and enabling the more efficient use of resources, especially energy and water. Other goals include increasing economic growth by innovating new products and markets, ensuring urban security by surveilling populations and increasing democratic participation in city

¹ <http://www.rand.org/randeurope/research/projects/eu-smart-cities.html>

governance (Crang and Graham 2007, Hollands 2008, Rossi 2015). As such a list might suggest, 'smart cities' are complicated assemblages of various things – technologies, policies, data, products and discourse – with a wide range of aims and effects. In amongst all the hype, experimentation, idealism, policymaking, research, play and commercialization, several large corporations are making an extended effort to visualize smart cities. Indeed, the term 'smarter city' was trademarked by IBM in 2011. It matters a great deal to these corporations, not only that certain stories are told about smart cities (Söderström et al 2014), but also that they are visualized in particular ways. This essay focuses on just one example of this corporate urban vision: a short film made in 2012 for the engineering company Siemens.

The film can be seen in a building funded by Siemens called The Crystal. The Crystal is described on its website as "the world's largest exhibition on the future of cities" and "one of the world's most sustainable buildings".² Designed by architects Wilkinson Eyre and exhibition designers Event Communications, it cost around £30 million and opened in 2012 in London's Docklands. The exhibition's focus is urban sustainability, and the emphasis is on mostly digital solutions to the problems faced by cities now: population growth, climate change, building design, energy, water supply, planning, security, transport and health. At the centre of The Crystal building and the culmination of its vision is a film called, modestly enough, *Future Life*. Designed and produced by digital media studio ISO,³ *Future Life* lasts four minutes and 25 seconds. It runs on continuous loop, projected onto a very wide, curved screen in a darkened space in the middle of The Crystal's ground floor. The film is also available on Siemens's YouTube channel, of course, where in late January 2016 it had

² <https://www.thecrystal.org/>

³ <http://isodesign.co.uk>

received 31,355 views, 143 likes, 5 dislikes and 9 comments; the channel hosts an eight-minute version of the film too.⁴ It can be seen as well on Informa's Internet of Things World website,⁵ and a screenshot appears in a report entitled *Smarter London* by the thinktank New London Architecture (NLA 2014: 5). Yet another version is hosted on ISO's website, where a one minute and 42 second Vimeo video of the film being watched by a variety of visitors to The Crystal is embedded.⁶

Future Life seems a paradigmatic piece of compact cinematics. It is short, shown on a variety of small screens and thus in various sites, and designed for viewing in situations which are not necessarily about 'watching a film' (cf Casetti 2015). It is also typical of much compact cinematics in that it is difficult to categorize using conventional definitions of media and genre. Its funding by Siemens would suggest that it is an advertisement – but there are no Siemens products, brands or logos to be seen in the film, only three cities that run smoothly because they are 'smart'. Indeed, Siemens branding is very low-key throughout *The Crystal*. *Future Life* isn't quite cinema either. It is much smaller than an IMAX screen and its viewers can come and go as they please. Indeed, its physical layout is strongly reminiscent, not of a theatrical cinema screen, but of a panorama: the side edges of the screen are not visible to viewers sitting on the viewing bench provided. Nor are its creators filmmakers in the conventional sense. The film was part of a package of visual and interactive materials designed for *The Crystal* by ISO who describe themselves as a "content design and development studio". ISO are not unusual among such companies in employing live action directors, 2D and 3D animators, graphic and interface designers, scriptwriters,

⁴ <https://www.youtube.com/watch?v=zuPlyqUc9oA> and https://www.youtube.com/watch?v=xK9TP_B95nQ.

⁵ <http://iotworldevent.com/iot-channel/siemens-the-crystal-future-life-video/#>.

⁶ <http://isodesign.co.uk/projects/the-crystal-av-installations-interactives>

software developers, social media managers and producers. Specializing in "cultural projects for public, private and commercial clients", they produce "digital media, interactive software and immersive installations". In other words, to use the more succinct phrasing of their Twitter page, they are "digital experience designers". To create *Future Life*, they shot film and "added CGI modeled buildings [designed in collaboration with the architectural practice NORD] and live action composited sequences".⁷ *Future Life*, then, exemplifies the sort of product created more and more often by digital visualisation studios who use a variety of graphic design, filming, animation, editing and modeling software to create content that crosses both media and genre.

Future Life looks at 24 hours in London, New York and Copenhagen in the year 2050. Drawing on a long history of visualising cities from the air, it opens with a photorealist, oblique aerial view of Central Park in New York, albeit Central Park with four geodesic domes glittering in the early morning sunshine: the voiceover says that it's 7:03am. We then fly slowly across the city, other recognisable landmarks now surrounded by huge white buildings. The facades of rectangular office blocks are display screens, there are trees on roofs and inside the glass-clad buildings, and twirly wind turbines are everywhere. The flight path is a little bumpy and the faint sound of rotors suggests we're in a helicopter. But we can't 'really' be in a helicopter because almost immediately, blue text boxes appear on the screen, pointing out for example "high rise capsule apartments" and "community agricultural farming". The film then cuts to a series of interior scenes with individuals (old, young and ethnically diverse) who are interacting with similar floating screens, making

⁷ all information from <http://isodesign.co.uk/profile> and <http://isodesign.co.uk/projects/the-crystal-av-installations-interactives>

menu selections and video calls. The next scene is another aerial view, this time of Copenhagen, again digitally modified with new buildings. Both cities are pictured in the familiar colors of a thousand commercial architectural visualizations: white, grays, pale blue, pale greens, a color spectrum of corporate bland or "developer slick" (May 2012: 21), where pale sunshine illuminates clean buildings, calm people and lots of trees.

[Figure 1 here Future_Life_online_09851.jpg]

Figure 1 New York in 2050, as pictured in *Future Life* (© The ISO Organisation 2012)

From corporate bland, the film cuts to its other color palette: neon data-glow (Degen et al 2015). The screen now shows an animated digital map of Copenhagen. Waterways are dark blue, there are areas of dark grey land, and against these and a black background are built-up areas glowing pink and violet, blue wind turbine icons and luminous pulsating yellow lines of electricity transmission. We then zoom down and across the map, which morphs into a white three-dimensional model of buildings, onto which a photo-realist skin is then layered. The film has thus shifted from map, to planning model, to oblique photographic aerial view in a couple of seconds. No time to pause, though: once again we are wobbly and flying, across Copenhagen with more blue text boxes hovering in the sky, and we then sink down to ground level. There is a brief photorealist panorama of buildings across open water; the view rotates across the panorama before cutting to another domestic interior with another screen-swiping inhabitant. Since the nineteenth century, the difference between the aerial view of the map, plan and model and representations of people in streets and public spaces "suggest that the individual's lived experience of places and the planner's oversight of the whole socio-economic system that a city is, are points

within a rotation from vertical to horizontal" (Macarthur 2013: 190). In this sequence, however, *Future Life* enacts a continuous flow through all heights and angles, blending one into the next and citing four of the most important modes of designing and planning cities – maps, models, panoramas and aerial photographs – before peering in to a domestic interior. They are all assimilated in one easy transition via the digitality of the film's production; all are now simply visual options to be turned on and off at the behest of the visualization software package, it seems.

The short film then takes us back to New York, once more to an aerial photorealist view of city. This time, the photorealist skin is not peeled away. Instead, the surface textures and sunlight of the city dissolve as neon data seeps from facades and beams between buildings. The entire 'city' (as over a century of realist representational forms have encouraged us to understand it) fades into a luminous, semi-transparent, three-dimensional model, described by ISO on their website as a "holographic visualization".⁸ Buildings become opaque glowing cuboids, with rays of colored light beaming between and beyond them. For a moment the background is entirely black, just like the earlier neon glow map of Copenhagen and the black space in which the film is screened in *The Crystal*. But the holograph then emerges as a digital model sitting on a table. Human figures appear around it, in suits, their eye-level at ours, once again tapping and swiping floating interfaces, this time to resolve urban challenges like traffic jams by turning stationary glowing red dots into mobile green ones with a single gesture.

⁸ <http://isodesign.co.uk/projects/the-crystal-av-installations-interactives>

[Figure 2 here Future_Life_online_06137.jpg]

Figure 2 New York again, as pictured in *Future Life* (© The ISO Organisation 2012)

[Figure 3 here Future_Life_online_06981.jpg]

Figure 3 New York's City Cockpit in 2050, as pictured in *Future Life* (© The ISO Organisation 2012)

The dissolve from a photorealistic oblique aerial view of New York to a holographic model is striking. It has been suggested that smart initiatives are layering a "digital skin" over the physical bodies of existing cities (Rabari and Storper 2014), but *Future Life* has suggested the reverse twice now: that the city as we have come to know it, as it has been shown ever since the invention of film and photography (which themselves remediated older traditions of drawing and painting urban spaces), is just an optional surface – a photoshop layer perhaps – just one of a series of technical choices available for representing the city, each as usable as the other and all equally available. Casetti (2015: 131) suggests that the "hypertopia" of contemporary cinematics "fills our 'here' with all possible 'elsewheres'." Perhaps *Future Life* should then be described as hyper-hypertopic, since it shows not only three different cities in the future, but also, in its visual profligacy, fills its viewers' 'heres' with all possible ways of showing those elsewheres.

Mark Dorrian has suggested that such explicit visualisations of the construction of urban images may induce a kind of vertigo because their constantly "transcoded indexicality" generates "a condition of constant deferral within the image" (2005, 10; 96). This is a particular risk in *Future Life* because the film has taken some care to show its viewers future urban life using the same visuality that it imagines such life to require. The

holograph of New York – which places the film's viewers as yet more bodies around the city-as-model – shows Siemens's "integrated management information and decision support system" called 'City Cockpits'. The name was registered as a trademark in 2010 and harks back to the aeroplane as the source of its aerial view. As we have seen, the short film makes its viewers feel as if their photorealistic aerial views in the film were indeed from a cockpit as we judder gently over cities in *Future Life's* helicopter. Moreover, those floating blue text boxes that annotate our oblique fly-throughs are repeated as the means by which both the inhabitants and the managers of these future cities interact with it.

One means to allay such nausea, Dorrian suggests, are the conventions of engaging with three-dimensional urban planning models. Dorrian describes the comfort they offer as their edges clearly delimit the city, giving attention a spatial limit and halting its vertiginous fall. Perhaps this explains why the City Cockpit in *Future Life* is so quickly placed on a table: to render it bounded and thus legible. Dorrian also notes the comfort of the oblique aerial view, generating as it does the pleasure of seeing things together, pictorially composed (2015: 104). (Hence aerial views have also "always represented *strategic* vision" [Dorrian 2015: 152].) The figures pictured manipulating the City Cockpit model have this calming overview, and it is offered to *Future Life's* viewers throughout the film. And there is also, without doubt, the pleasure generated by the technical virtuosity and beauty of the short film's flights, swoops, zooms, dissolves and emergences, which Buchan and Janser (2015) point to as a defining feature of animations.

Indeed, this spatial affect may well be the most important feature of *Future Life* because it is an affect generated by so many forms of contemporary digital visualizations. As Manovich (2013) has pointed out, while many images continue to remediate older visual forms (maps, models, oblique aerial photographs and urban panoramas, in the case of

Future Life), the software through which such forms of compact cinematics are made is also inflecting their visual and spatial forms. Visual "digital experience" is now designed by creating and manipulating objects in three-dimensional space, and Manovich (2013) suggests that this software is enabling the emergence of a widespread "new design language" of mobile, high-definition, fast-moving animations (179, 260). Such an aesthetic may not be global but it is certainly pervasive in commercial digital visualizations, and as such it seems to be shifting what the aerial view does. Although that view is still important to the "strategic vision" of urban managers and planners (and *Future Life* suggests it will still be so in 2050), it no longer offers "a global view of particulars" (Bann 2013: 89). Its "heuristic potency" (Robic 2013: 174) seems to have faded somewhat, in an age when Google Earth, Hollywood superhero movies, computer games and Google Streetview have made aerial views and panoramas everyday occurrences, popular desktop distractions and estate agents' aids (Gilbert 2010). Such views are now so familiar that, in order to convey specific informational content, they have to be annotated, for example, with floating blue boxes; for *Future Life* to succeed in explaining the 'smart city', explicit commentary is required (and *Future Life* also has a calm, explanatory voiceover throughout).

[insert Figure 3 here]

Figure 3 explanations of the smart city in *Future Life* (© The ISO Organisation 2012)

What is left, then, of the aerial view is not its synthesizing insight, but its sensation (Castro 2013) and, in particular, its spatiality. In her discussion of animation, Buchan suggests that "many non-conventional, hyperrealist animation films create visual neologisms in the particular animated space-time that are the true 'characters' of the film"

(2013: 8). The spatiality through which *Future Life* envisions 'smart cities' in 2050 is perhaps its most striking feature. Its movement and angles, that wobble, the zooming in and out, the shift from aerial view from above to ground-level view, its virtuoso display of multiple forms of representation, its smooth transitions between these, its pulsing networks: this is an affective spatiality that enrolls viewers of the film in pleurably enacting the mobile untethered spatiality of digital visuality, in which we "locate ourselves in simultaneous spaces, multiple temporalities, and data-rich, simulated environments", anywhere with a smart screen and internet connection (Elsaesser 2013: 228). In that sense, *Future Life* does indeed design an embodied 'digital experience' for its viewers, and one that is emerging, not in 2050, but right now.

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