"The Real Modernity that Is Here": Understanding the Role of Digital Visualisations in the Production of a New Urban Imaginary at Msheireb Downtown, Doha

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"The real modernity that is here": understanding the role of digital visualisations in the

production of a new urban imaginary at Msheireb Downtown, Doha

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Abstract

This paper explores how Computer Generated Images have enabled the visualisation and

negotiation of a new urban imaginary, in the production of a large-scale urban development

project in Doha, Qatar. CGIs were central not only to the marketing but also the design of

Msheireb Downtown. Our study of their production and circulation across a transnational

architectural and construction team reveals how their digital characteristics allowed for the

development of a negotiated, hybrid urban imaginary, within the context of a re-imaging and

re-positioning of cities in a shifting global order. We suggest that CGIs enabled the co-

production of a postcolonial urban aesthetic, disrupting the historical orientalist gaze on the

Gulf region, in three ways. Firstly, they circulate through a global network of actors negotiating

diverse forms of knowledge from different contexts; secondly, they are composed from a mix

of inter-referenced cultural sources and indicators visualising hybrid identities; and thirdly,

they evoke a particular urban atmosphere which is both place- and culture-specific, and

cosmopolitan. The study emphasises the importance of research into the technical and

aesthetic production processes which generate new urban spaces in the context of global market-led growth; and, by considering the circulation of CGIs between sites, contributes to the development of 'a more properly postcolonial studies' (Robinson 2011: 17).

Keywords:

(Urban development), (digital visualisation), (Doha), (postcolonial studies)

1. Introduction: re-imaging Doha

Our research into the agency of CGIs in the development of the Msheireb Downtown project in Doha took the form of a year-long multi-sited ethnography of architects, visualisers, and client-side staff at work in 2012. During this period the phased development was entering detailed design and working-drawing stages on different lots designed by nine Design Architects (DA) from the UK and US, commissioned by the Qatari client, Msheireb Properties (a subsidiary of the Qatar Foundation). The research was conducted primarily in the London, Liverpool and Barcelona offices of the architects and visualisers, where we observed and documented the production of visualisations, and interviewed staff about the process. In addition, we undertook three week-long field trips to Doha, 'following' the CGIs (in both electronic and print format) to specific design review meetings in the client's offices, interviewing staff, and visiting the development site close by as the dramatic process of its transformation got underway (figs 1 and 2)

During this process we witnessed how visualisations provided a key interface in the complex negotiations between actors that unfolded around the visualisation of a new urban imaginary for Doha - one informed by a fusion of Qatari cultural identity with 'a real modernity and enjoyment of globalisation that is here' (architect), which at the outset nobody on the

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team could describe or envisage. By the end of 2012, however, the visualisation process had materialised a consensus on a new urban aesthetic for the Msheireb Downtown project which would convey both its Qatari heritage and identity and its aspiration to be an iconic development in a global city. This aesthetic was represented in an approved set of presentation CGIs which was re-circulated again, in different formats, among different audiences both within and beyond Qatar. These included staff and visitors to the client's and architects' offices; visitors to the permanent exhibition at the Msheireb Enrichment Centre on a barge moored off West Bay, international property fairs such as MIPIM in Cannes, and social media sites including the client's own; as well as passers-by in cars and on foot along the perimeter of the site in Doha where the images were mounted on billboards, and contractors and construction workers within the site who used the images as reference points (figs 3 and 4).

Our ethnography was limited to the production and negotiation process itself, conducted with the bounds of the professional offices working on the project, and did not extend further to the reception of the CGIs by wider audiences beyond the development team, nor to the translation of digital imagery into built form as construction progressed in Doha. However, the case study provided valuable insights into the way that digital visualisation is contributing to the re-imaging of cities such as Doha, by professionals and client bodies, and within the context of a re-calibration of urban hierarchies in the post-colonial period (Robinson 2004; McFarlane 2010) driven by global shifts in economic power.

Cities in Asia, South America, and the Gulf states, including Doha, now vie for status with European and American centres as international hubs of finance, business, culture and education, defined by transnational flows and networks (Acuto 2014). Many cities have developed strategies for 're-imagining' and 're-imaging' themselves (Edensor and Jayne 2012:1) as they compete for a higher profile in the global economy of images (Kanna and Chen 2012, Kanna 2013), and these strategies are often pinned to the construction of striking new

buildings and substantial redevelopments of the urban landscape (Kaika 2011, Smith 2002), such as the Msheireb project. Indeed, we see cities in Asia engaged in what Ong has described as a 'proliferation of metropolitan spectacles' (2011: 205) or what Adham has described in the Gulf area as an 'iconic war of hyper-signification ...in the realm of architecture' (Adham 2008: 244), as they jostle for position in a shifting global urban hierarchy.

The investment in new construction across cities globally has promoted the growth of international architectural practices, so-called 'starchitects', and networked processes of transnational architectural production facilitated by digital communications and softwares. A considerable literature has explored the emergence of this 'global architecture', veering from the banal and homogenising on the one hand, to the spectacular on the other, and viewed as complicit in the commercialisation and branding of urban environments (Ren 2011, McNeill 2009). But these developments have also encompassed a resurgence of interest in rediscovering local and vernacular styles, as cities seek to establish distinctive individual identities and, in particular, move away from received western models of urbanisation.

Across the Arab region, Arab culture and heritage has been re-evaluated following the post-oil consumer boom as "cultural capital that can be mobilized... as a means of enhancing prosperity and as a foundation for effective and productive dialogue among nations" (Serageldin 2008: v). Architectural and urban heritage in particular is being re-appropriated and instrumentalised to re-image and re-position cities in relation to each other, both on a global stage and within regional agglomerations. Indeed, Elsheshtawy (2008b) observes that a battle for sophistication and culture is being waged *within* the Arab region, framed less by competition with cities of the global north, and the authority of orientalising western heritage experts (AlSayyad et al 2005), but rather by the displacement of the old regional centres of history, culture, and learning – Cairo, Beirut and Baghdad – and the rise of the new modern cities of the Gulf in competition with Singapore and Hong Kong, defining their own cultural agendas.

As we will elaborate (section 4), Doha too has been actively engaging with architecture and urban design as part of a strategy to re-position and re-image itself as an autonomous, post-colonial, urban hub in a network of world cities (King 2004, Acuto and Steele 2013, Salama and Wiedmann 2013) both globally but also regionally, where it aspires to challenge established western-influenced models of urban modernisation, by promoting an alternative based on local heritage and identity mixed with cosmopolitan inter-references (Melhuish 2014). The $5.5bn Msheireb Downtown development (2005-2016) has been key to this process. It is transforming a 34 ha site in the historic centre of Doha into a modern, mixed-use complex for living, working, shopping and cultural consumption by middle and upper-class Qataris and international professionals, displacing a long-standing community of low-income migrant workers to maximise land values in the city centre and attract inward investment. In this respect it follows a pattern established by many similar urban development projects around the world (Smith 2002, Syngedouw et al 2002), and the project draws heavily on the imported expertise of British and American design and infrastructure firms to achieve this transformation. However, it has also been strongly led by a Qatari development agenda, guided by 'strong Islamic and family values', and 'the preservation of cultural traditions', which is recognised as 'a major challenge that confronts many societies in a rapidly globalising and increasingly interconnected world' (Qatar 2030 Vision 2012: 4). Indeed, it is being promoted as an exemplary project which will serve 'to find a solution that will fill this void that we have in our architecture.. It is the first attempt to find what suits our identity' (Sheikha Moza bint Nasser 2006, Chair of Qatar Foundation).

As this paper will show, CGIs played a vital role in evolving and materialising a vision of what this identity might be, expressed as a distinctive urban imaginary for Doha which encompasses both urban design and the patterns of living which it promotes. We will further propose that the specific technological and aesthetic capacities of CGIs helped enable a distinct shift away from past models of western-influenced urbanism, towards a more

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'postcolonial' urban aesthetic; and that they did this both as critical 'interfaces' that circulate and expand the field of negotiation among a range of actors, practices and sites (Rose et al 2014; section 5a the production model), and as collaged and mutable digital files which allow for the development of an inter-referenced urban vision, pulling together a palimpsest of cultural and architectural references (section 5b. the visual content) in 'atmospheric', immersive and affective scenes of new urban futures (Degen et al 2015; section 5c. drawing in the viewer). First of all, we provide a note on methods.

2. Watching CGIs at work: our methods and ethnography

The key methodological issue at the beginning of the project was gaining consent from the client to conduct ethnographic research in the architects', visualisers' and client's offices, since large-scale urban development projects are commercially sensitive. However, Msheireb Properties was keen to demonstrate the wider educational and cultural agenda attached to this scheme, and for that reason agreed to our request. We subsequently conducted some 40 interviews across these sites, with architects, visualisers, development and project managers, and marketing officers, in addition to ethnographic observations in three of the DA offices, the two visualisation studios, and the client's office. During the three fieldtrips to Doha, we sat in on Design Review Boards where design proposals were presented to the client team and CEO in the form of CGIs and supporting drawings by the visiting architects. During these visits and observation sessions we photographed and videoed the different actors at work making and discussing visualisations on computers and around meeting tables, as well as photographing large numbers of CGIs at different stages of development on screens and in other formats and settings, and collecting electronic and paper copies of images (fig 5).

Both architects and visualisers worked largely in silence, seated in long rows before their screens in large studios, usually wearing heaphones and immersed in their own work . Drawings and images danced about on screen in response to each touch of the mouse,

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conjuring visions of a place in a city that the majority had never visited and had no knowledge of. Staff worked long hours, striving to keep track of the frequent updates and annotations circulated through Google docs, or on marked-up pdfs, resulting in an enormous proliferation of digital files on office servers. They had to meet tight deadlines, at which point the finished files would be uploaded to shared servers and printed out at different scales for the project directors or partners to take out to Doha for the scheduled meetings with the client and project managers. These were tense, dynamic, face-to-face sessions, where the images took centre-stage in the evolving discussion about the design, development and presentation of the project, and dictated client decisions on sign-off at each work stage, and payment of fees.

During this period, we saw then how CGIs were used not only to pitch the masterplan and design to the client in the early stages, but also as deliverables and presentation materials throughout the development process. Visualisations started out as simple massing studies extruded from the architects' plans for individual buildings in MicroStation AutoCAD, before being imported into the visualization programme 3DS Max by in-house or external visualisers who would develop renders from them with the addition of subsequent layers of detail, including materials, light effects and architectural detailing. The architects might also make moodboards of references, using collated images sourced from different types of specialist and non-specialist websites and from books, and show these to the visualisers for guidance. After rendering of the 3D image, it would be passed to the 2D team for further elaboration and artistic enhancement in the image editing software Photoshop (especially light effects, people, trees and cars). This might involve cut-and-paste from other sources, eg internet libraries, photo-sharing websites and offices' own archives of imagery from other projects, or digitally painting on effects. During the process, the image would be reviewed by the architects to check it was correct, or 'realistic' in terms of the building details and relationships, and also by the appointed Architectural Language Advisor, a partner in one of the architect's firms appointed as liaison for all the DAs with the client, to ensure it conveyed the right mood or

atmosphere. This latter dimension would be strongly related to the lighting of the buildings, the type of sky included in the image, and the amount and kind of human activity, or its traces, which had been added in order to 'bring the image to life', as it was often described.

Each CGI was revised many times, circulating from one virtual and geographic site to another. We often heard from our respondents how draining, intensive and costly the working process could be. The design presentations were themselves fraught with tensions between the different actors, generally focused around the push-and-pull between technical accuracy relating to the design, specification and quality of the buildings, and atmospheric evocation of what it would 'feel' like to be in this new place. These tensions were further heightened by linguistic ambiguities in the communication of desired effects and outcomes across a multi-national team.

At the same time, sitewide CGIs were being produced by the two specialist visualization offices to illustrate the relationships between buildings and spaces and further develop the 'story' of the development as a journey through the site. These visualisations were based on 3D models of the individual buildings provided, or 'shared', by the architects (sometimes reluctantly, due to concerns about intellectual ownership), and set up from specific viewpoints determined by the ALA. The resulting images also passed through a layered comment system, including input from the design architects to check that their buildings had been presented accurately and well, and required an immense amount of co-ordination, management, and checking for accuracy according to the latest design updates. Eventually they would be approved for presentation to the client.

Our subsequent NVivo analysis based on thematic coding of the fieldnotes, interviews, photographs, and CGIs generated from this process suggested that there were three ways in which the CGIs that picture Msheireb Downtown articulate a postcolonial urban aesthetics for the redevelopment project, as noted above (section 1), and demonstrate the agency of different technologies and apparatus in the production of particular forms of urban imaginary.

But before exploring these in more detail, we will set out the premise for the argument that the Msheireb CGIs have contributed towards the production of a postcolonial urban aesthetics in the context of Doha.

3. A post-colonial urban aesthetic in Doha?

A substantial literature examines the ways in which urban planning and architecture have been used by states to re-imagine and represent national and post-colonial identities following the end of empires and the re-calibration of western political and cultural influence around the world (King 2004, Yeoh 2001; Mishra and Hodge 1991). At this point we should clarify our use of the term post(-)colonial to describe both the period of time following decolonisation from around the mid-20th Century, and a type of space and urban aesthetics which intervenes in and disrupts models of architecture and urbanism 'that parade under a universalist guise and either exclude or repress different spatialities of often disadvantaged ethnicities, communities or people' (Nalbantoglu and Wong 1997: 7). This includes colonial patterns of urban intervention and redevelopment, shaped through measuring, mapping and rationalising forms of architectural and urban representation, which further evolved through Modernist ideology and aesthetics into increasingly technocratic forms, reinforcing a distancing, ordering, and segregating imperative (King 1990, Wright 1991, Rabinow 1995, Crinson 2003). For Frantz Fanon, amongst others, the racially and socially segregated colonial city epitomised the colonial world, '… divided into compartments' (Fanon 1968: 37-40). Indeed, as Jazeel points out: 'Colonialism's entourage of hierarchies and binaries, its elitist and exclusionary practices, gave birth to an enduring spatial structure' (2013b: 42), leading to what Edensor and Jayne (2011:19) term a 'dual city' which is the lasting legacy of urban regulations of colonialism.

In fact the reproduction of colonial and Modernist architecture and planning (in the Middle East and elsewhere) was not a one-way process, but also both drew on existing vernaculars to create new 'universal' forms, and underwent adaptation and modification by

local agents in the process of translation to local settings (Wright 2011, Nagy 2000, Nasr and Volait 2003). Fahmy stresses not only that the 'modernisation' of Cairo had started well before the arrival of a colonial presence in the city but also challenges the supposed influence of the Paris model on the re-shaping of the city by Khedive Isma'il (1863-79) (Fahmy 2005). Ahmed further suggests the concept of the 'dual city' in Cairo at least was constructed by Europeans but not shared by Cairenes (Ahmed 2005). In Doha, never a colony as such, urban development from the 1950s onwards was strongly shaped by British, American and other international consultants on rationalising, Modernist, lines, resulting in the clearance of large parts of Doha's traditional vernacular building stock and urban fabric in order to promote urban growth and modernisation (Adham 2009). However, it also held westernisation and later neoliberalism at a distance, as state-owned corporations and the role of private capital continued to be completely intertwined with the Qatari state (Kamrava 2013). Development has been informed by locally-generated concepts of modernisation, and 'purports to be a path to prosperity that allows many if not all of the current social arrangements to remain intact' (Mitchell 2013: 38).

Nevertheless, the tension between European urban ideals of order and visibility – boulevards, vistas, landmarks, and low-density suburban development - and the perceived 'chaos' of native cities, along with the social segregation which they delineated, has been a lasting legacy of European governance or influence on many former colonial or neo-colonial cities (Edensor and Jayne 2011, Crinson 2003), including Doha. Postcolonial space and urban aesthetics may then be posited as intervening in, challenging, or subverting colonial urban models to re-assert the historical and cultural authority of cities as they evolve in post-colonial times, and re-image them for the present. Often, this may be achieved through the restoration or reconstruction of pre-colonial vernacular forms (Isenstadt and Rizvi 2011), alongside the construction of new structures using modern technologies deemed appropriate for the 21st century, and resulting in palimpsests of old, pastiche, and modern urban architecture and

hybrid spaces. At the same time, postcolonial urban re-invention is often tied to nationalist

narratives of state-building and cultural identity which, as Jazeel (2013b) argues, can also be

exclusive of minorities and intolerant of cultural difference, resulting in continuing forms of

urban segregation common to cosmopolitan post-colonial cities (Elsheshtawy 2011 on Dubai)

and also evidenced by the Msheireb project.

But what we see in the articulation of these evolving post- and postcolonial urban

identities is an increasing reliance on what Ong and Roy (2011), in their discussion of 'worlding

cities', have described as inter-referencing between 'other' cities within different networks,

whereby recognizable architectural and urban elements are lifted by one from another and re-

used to create an amalgam of place and identity in counterpoint to western references – for

example, Dubai models influence urban developments in India (Haines 2011). This process

reflects the enhanced fluidity and mobility of space and place which has occurred in post-

colonial times, especially as it has been facilitated in more recent decades by digital technology

and communications networks (Sheller 2009). Our study of the use of CGIs in the Msheireb

development project demonstrates how digital visualising technologies can perform a

significant role in the emergence of such inter-referenced, contingent, and mobile forms of

post- and postcolonial urbanism through their combined technical and aesthetic dimensions,

which are distinctively different from traditional forms of architectural representation. While

the latter can be seen to have facilitated the ordering and distancing strategies of colonial

urban intervention, digital architectural visualisations, through their anthological and mutable

characteristics, have the capacity to delineate a 'third space' where a hybrid mix of cultural

inter-references can be combined and explored in a virtual and immersive digital imaginary,

before being materialised in built form and urban landscapes.

As glossy commercial marketing tools for urban developments, CGIs have attracted

some scholarly attention (see Jackson and della Dora 2011 on Dubai for example); however,

they have been accorded little critical attention for their role in shaping distinct urban

imaginaries through which representations and experiences of postcolonial urbanism are mediated, then objectified in the technical realisation of large-scale urban developments. The Msheireb CGIs provide a powerful case study through which to examine this process, for the Msheireb project, as we will go on to explain, has explicitly been conceived as a vehicle for the reassertion of an authentic but contemporary (and also exclusive) Qatari identity and a disruption of existing patterns of westernised urbanisation. It is intended to establish a new model for regional urban development characterised by a distinctive, inter-referenced urban aesthetics, which can be framed as 'post-colonial' and has been facilitated by CGIs.

4. Msheireb Downtown: the case study in historical context

The Msheireb project was initiated in 2005 and promoted by the Qatar Foundation as an exemplar for Qatari development, through its chairperson Sheikha Moza bint Nasser, who played an important role in Qatar promoting values and progress around education, culture, and heritage during the rule of her husband the emir Sheikh Hamad bin Khalifa al Thani (1995 – 2013). This aspiration was reiterated during our fieldwork by the client's marketing officer: 'We want to be one of the pillars of brand Qatar – like Qatar Airways, Al Jazeera… driven purely by intellect'. As such, the project has been a key platform in the development and implementation of the Qatar 2030 Vision (2008) for economic and social development launched by Sheikh Hamad bin Khalifa al Thani. This stresses the principles of 'Qatarisation' and diversification, in order to reinforce Qatari economic and cultural autonomy by reducing dependency both on imported western skills and services and on the petrodollars generated by oil and gas exports.

As part of this agenda, there has been a considerable investment in re-imaging Doha as a global, cosmopolitan urban hub, with a distinct Qatari identity, through architecture, urban design and cultural heritage. Following on from the intervention of international consultants such as Llewelyn-Davies Weeks Forestier-Walker and Bor, and William Pereira (WLPA) after the

establishment of the independent state of Qatar in 1971, which led to the clearance of much of the traditional urban centre of Doha, a succession of landmark buildings was developed during the '80s and '90s to create a recognizable modern skyline of high-rise towers for the city, emerging as a modern and hugely wealthy capital. In 1995, the discovery of Liquefied Natural Gas led to a sharp and continuing rise in GDP which produced 'a building frenzy … characterized by explosive expansion of the existing city in almost all spatial co-ordinates' (Adham 2009: 82). The implementation of new principles of planning and development over this period produced a material re-shaping of the city typical of westernised development – notably an efficient traffic circulation system based on radiating ring-roads, zoned areas of residential and commercial uses, large new civic and commercial buildings separated by open space, and landmark structures designed by international 'starchitects'. It 'signalled the introduction of Qatar to the modern world' (Adham 2008: 229), while further recognising the challenge to Qatari interests (regionally and globally) by the simultaneous, spectacular, urban development of neighbouring Dubai as an increasingly western-friendly destination for international business, tourism and entertainment (Kanna 2013). Meanwhile, the low-rise buildings which remained in the tight-knit central area around the bazaar, many built of mudbrick, had been increasingly subdivided and occupied by immigrant workers mostly from Kerala, India, as the foreign population in Doha rose to around 70%. An ethnicized landscape of disrepair, decay and poor living standards emerged at the heart of the historic city, which the Msheireb Downtown scheme has been designed to replace, following the significant rebuilding in 2005 of the derelict historic Souq Waqif as a successful western-influenced shopping and entertainment centre contained with the envelope of traditional Qatari urban form.

The Souq Waqif project in 2005 demonstrated a significant shift away from a pattern of urban development which had been recognized as over-deferent to western models, and neglectful of Qatari heritage and identity – creating 'a void.. in our architecture' (Sheikha Moza

bint Nasser 2006). It was realised alongside a wave of prominent cultural, educational and sporting events and new buildings promoted by Qatar Foundation for Education, Science and Community Development (launched 1995) and other government agencies. These have included I.M.Pei's Museum of Islamic Art (2008), Education City and Qatar Science and Technology Park (designed by Arata Isozaki and others from 2000), and most recently World Cup stadiums by architects including Foster and Hadid for 2022. These building projects have been accompanied by a succession of 'mega events' such as the 15th Asian Games, 2006; annual Doha Tribeca Film Festival 2009 – 2013; UN Climate Change Conference, 2012; and the forthcoming World Cup in 2022. Thus, as the chair of Qatar Museums has noted: 'We are revising ourselves through our cultural institutions and cultural development…. Art becomes a very important part of our national identity' (*New York Times* 2013). And although Qatar has attracted attention for the enormous sums it has invested in works by key artists within the western canon, this has been balanced by the promotion of regionally-based art production and institutions such as Doha's Museum of Modern Arab Art.

The Msheireb Downtown project is significant, because it has been conceived in direct response to these goals, with the intention of transforming a central area of the city from a run-down migrant quarter into a new 'contempory Qatari' urban landscape which will foster a cosmopolitan lifestyle grounded in Qatari collective memory and identity – distancing itself from western models, while also excluding local 'subaltern' narratives of cosmopolitanism. Notwithstanding the 'Qatari character mission' (architect) however, the project exemplifies 'the new downtown [as] a redesign of the urban centre' (Rotenberg 2012:30), materialised through a 'transnational architectural production... characterized by the involvement of a wide spectrum of actors - architects, developers, investors, media networks, and state bureaucrats' (Ren 2011: 5). The project was masterplanned by British practices Arup, Edaw (now Aecom), and Allies and Morrison (responsible specifically for the architectural design code across the site), with nine further Design Architects (DA) from the UK and US working on designs for 100

individual buildings. Of these, two US firms, plus one other, were also employed as Executive Architects (EA) to oversee construction, and a US-based landscape architecture firm was appointed to design the public realm. Two UK-based visualisers were commissioned to produce visual imagery across the whole site and for special presentations to Sheikha Moza, and a number of other visualisers were also used by the architectural practices (some in-house, some external consultants) to produce visualisations for their own buildings and client presentations. Finally, an Architectural Language Advisor (ALA) was appointed (a former partner in Allies and Morrison) by the client to art-direct the production of CGI imagery, that would both evolve and embody the sought-after idea of Qatari identity and place atmosphere and communicate it effectively to the Sheikha herself.

Here then we can see the digital visualisation process itself identified as a crucial arena for the negotiation and exploration of a new urban imaginary that had no clear form at the outset, other than the requirement that it should establish a new path for Qatari urban development which could also be presented on an international platform. Indeed, it played such an important role that one architect described the scheme to us as being 'led by CGI'. CGIs were central to the project's design and development across the network of actors, creating a virtual urban imaginary in which to explore a Qatari-inspired, yet hybrid character mission in counterpoint to past patterns of development, which we describe as a postcolonial urban aesthetic. The next section describes this in more detail.

5. Computer-generated images and the production of a postcolonial urban aesthetic
The paper has already noted that as the CGIs circulated between actors they were the object of intense scrutiny, and provoked much discussion. We have argued elsewhere that the mutability of CGIs in this context is inherent to the role they perform (Rose et al 2014); this section thus begins by exploring how that quality of mutability contributed to the production of an urban aesthetic that can be described as postcolonial.

a. the production model: the doughnut

The CGIs were produced through a process of negotiation among a range of professional actors with different areas of training and experience in architecture and development, and from different nationalities, played out through repeated revisions of the images. Most of the UK-based DA offices and visualisation studios employed British or European staff who had no knowledge of Doha, except from behind a screen. Only senior project architects and one of the visualisers had visited Doha, on a brief trip to deliver some materials, during which he grabbed the opportunity to take some photos in-situ. The client team based in Doha comprised a mixed group of mostly American, some British and Australian, and some Egyptian and Lebanese development directors and managers, many of whom had previous experience in Dubai and other parts of the Middle East including Kuwait and Beirut. However the senior executive level was made up of Qataris from the civil service and ministries, answerable ultimately to the Chairperson of the Qatar Foundation, Sheikha Moza. Also on the development team were a handful of Qataris with training (commonly in Britain or the US) and some experience of working in architecture, urban and interior design, in line with state directives on 'Qatarization'. At a more technical level, particularly IT support, roles were mainly filled by male employees from the Indian sub-continent, while PAs included a mix of nationalities (eg Russian, Indian), front-of-house receptionists were often Filipina women, and tea-boys south Indians.

The architects explained to us that it took long time to work out how to design and visualise the project, mainly because the client did not initially know how to brief them regarding the Qatari identity of the development. A visualiser respondent told us that they were told to 'get the Arabic style [right]', but worked on it extensively 'before the client started to say what they didn't like' (visualiser). Some of the early images were 'more romantic', with 'more orientalism' in them, noted one of the DA partners, which he saw as 'a

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positive energy… geared towards the Qatari character mission'. But, he said, they realised the danger of any kind of 'theme park .. re-creation', and eventually developed 'a better sense [of] where this sort of world of invention and pattern-making and romance … runs up against the buffers of real life and the everyday here, and the sort of real modernity and enjoyment of globalization that is here' (architect/masterplanner).

The journey towards consensus was co-ordinated by the masterplanners and ALA (as he was subsequently to become) in a scenario summarised by the same DA partner as: 'a three-way meeting of experience and expectation. One is the still point of Qatar, although it's not still because it's defining itself, the other is the UK, with designers with more or less international experience but strong views about urbanism, and [thirdly] the people from Dubai, who are part of a great experiment of building things.. We [MDC - Allies and Morrison] had to sort of play the role as the orchestrator in terms of place-making because it was not familiar territory for anybody else' (MDC architect). However, CGIs provided a vital platform on which these experiences and expectations could meet and influence each other. The work required to define the appropriate style and place-identity for the new development grew out of a collective effort by staff located in offices spread across a number of geographical locations, who engaged with the development site entirely through the medium of the computer screen or images in books. The CGIs therefore, as they circulated among team members via email, ftp server, or as printouts at various scales – including giant-sized hoardings and mock-up panels at the site, and acrylic-mounted prints on display on the walls of the client's office – became common repository of knowledge and platform for understanding, communicating and discussing what this new place, or development model should look like.

It took time then for a clear vision to evolve through work and discussions around the CGI images, which eventually resulted in the selection of a set of 42 CGIs for presentation to Sheikha Moza in Jan 2012, capturing a vision of a 'new kind of place' for Doha (ALA). This

vision, in which traditional and modern, place-specific and international, are fused in a cosmopolitan, postcolonial hybrid, emerged therefore through a negotiation of positions and expectations between producers and receivers of the images, which was enabled by the CGIs themselves and their mutability.

Hence the CGIs themselves allowed a certain 'democratisation' of the design process, as one visualiser put it, through their very accessibility (as images) and the scope they offered for review and revision by multiple actors. This visualiser described the process as a 'doughnut model' of design production, in which the traditional authority of the architect at the centre of the ring is being displaced by the digitally-enabled participation of other producers and receivers (see also Harvey 2009). In the case of Msheireb, we can see how this also exemplifies the implications for transnational processes of design, expanding the field of negotiation among project actors across locations and cultures. This we suggest is key to understanding how CGIs contribute to the production of postcolonial urban aesthetics, facilitating the critique and revision of certain assumptions generated by consultants based in the global North, and the increased inter-referencing between other cities and ideas of place which becomes embedded in images through the 'doughnut' model of production.

b. the visual content: a new urban imaginary

This leads us on to consider the visual content of the Msheireb CGIs. Two aspects in particular - the architecture, and the people – were the focus of intense deliberation among participants as they strove to establish what this new urban imaginary should look like.

The original concept masterplan by Arups and EDAW presented in 2006 was accompanied by indicative visual images for each of four areas of the site by four architectural practices from the UK, Spain and Italy, which revealed a striking lack of coherence in the look of the project. Allies and Morrison, the more conservative of the four, was therefore selected to take it forward and define a code for a specific architectural and visual language. This was

based on extensive research into the Qatari vernacular undertaken by the British consultants with a Qatari colleague, which was reviewed by a panel of US-based academics, albeit of mainly Middle Eastern origin. From it, Allies and Morrison refined and developed the idea of a 'contemporary Qatari' (note, not Islamic or Arabic) architectural idiom to inform a design code that responded to the character mission evoked by Sheikha Moza. This code was published as one of five volumes of Sitewide Design Guidelines. It would govern the work of all the DAs subsequently appointed to the project, imposing, as we were told, a broad collective identity on the team selected through a new architectural competition in 2008 to design individual buildings and lots within the masterplan. In this competition, twelve practices drawn from both Europe and the Middle East/ Gulf region were invited to submit ideas, which again ranged from the pastiche and orientalising (including some of the regional entries), to the technocratic and over-scaled. The winning DA teams, all London-based, were selected on the basis of their ability to understand and reinterpret the intimate quality of the traditional fereej or neighbourhood typology found in Qatari and Arab towns and cities, within the over-arching framework of a modern European or American-style gridded masterplan with underground servicing.

The design code and architectural proposals thus inter-references a mix of European, American, and traditional Qatari architectural and urban features. The CGIs picture a clean and orderly environment of regular, rectilinear, almost classical stone-clad buildings, on a grid-based plan of open boulevards and vistas, interlaced with intimate 'siqats' or alleys, as found in the fast-disappearing old city. The buildings reveal traditional local architectural details, such as badgir (wind chimneys) or liwan (covered terrace or open-fronted room). Overhangs and colonnades create integrated, shaded outdoor spaces, filled by informal groups of Qataris and expatriates enjoying themselves in dappled light – an unusual sight in the inhospitable glare and pollution of Doha's streets today.

At the heart of the development, typical of western models of urban development, we see a large public square, addressed by a Cultural Forum at one end, and the Mandarin Hotel at the other. It is lined by shops, restaurants and outdoor seating along each side, and has a sophisticated climate control system (including overhead canopy, spilled air and cooled water) designed to reduce outdoor summer temperatures by 10 degrees and ensure this new public space is also usable for as much of the year as possible. The development also features a series of grand new archive buildings facing the government palace to the north; on the other side is a large open prayer ground, and cultural quarter of reconstructed 'heritage houses' converted into museums. An extensive indoor shopping galleria, luxury shopping quarter, hotels and offices comprise a substantial part of the development, along with apartments and townhouses for segregated Qatari and foreign residents to rent on the north-west section of the site.

This mixed-use model, designed by British and American consultants is visualised in the CGIs as a 'journey through the site' which emphasises public and semi-public outdoor spaces between buildings, enlivened by different types of everyday activity. It has many similarities then with the type of 'new landscape complex' elsewhere described by Smith (Smith 2002), but to date does not exist anywhere else in the Gulf, where urban development has been governed by the Dubai model of zoned planning punctuated by stand-out iconic buildings jostling for attention and a disregard for pedestrian experience. On the other hand, it is familiar to many affluent Qataris through their shared experience of a network of other global cities: '[Qataris] are very well-travelled, they see downtown in the Champs Elysées, Piccadilly Circus, but not here' (client marketing officer). The aim is to recreate that experience in Doha, both for Qataris and for the professional expatriate guest workers living in the city, as a fusion of local and global experience. But as an alternative model of 'Doha-isation' (Al Raouf 2010), it is the emphasis on public outdoor space and its representation which needed considerable negotiation. The CGIs picture essentially western concepts of public space and

urban atmosphere which are common to UDPs in the global north, but essentially alien to traditions of Arab urbanism. Qatari society, like others in the region, continues to operate as a tribal aristocracy in which there is no 'public' as such, only '[other] families around' (Mitchell 2013: 68). Social interaction is predominantly family-based and/or segregated, occurring largely within the domain of the family home, compound, or otherwise in the mosques, malls and souq. Indeed, the concept of the public realm was contested throughout the Msheireb project. In an early workshop in London on the design of the central 'world class square', one of the client's development managers noted the inherent contradiction in the idea, concluding that the most appropriate models for translating the concept into the Doha context would be either the bazaar, indoor <u>majlis</u> (male sitting-room), or the <u>baraha</u> area of semi-private space at the threshold of the family home – all enclosed spaces, none of which come close to recognized international conventions of plaza design.

Thus the architectural content of the CGIs was shaped through negotiations between producers and receivers that generated a hybrid urban aesthetic, responding to place and culture in specific ways, which we can define as postcolonial both in time and space. But equally important were the debates about the people and social life depicted, in order to conjure a vision of a new kind of place in Doha which re-casts internationally recognizable models of urban development to fit with local cultural traditions and aspirations that are also carefully classed. Houdart observes in her study of architects at work in Japan how 'Architects, while designing, digitalizing, copying, and cutting and pasting images, manipulate social spheres and give birth to new ones…' (Houdart 2008: 48), and we saw this process unfolding through the work on the Msheireb CGIs too. Here, the manipulation was underpinned by a number of rules and visual formulae about the appropriate people, clothing, activities and settings to be included, which were set out in the ALA's 'Seven Golden Rules for CGI Views' (quoted as follows). It was important to picture family groups, attired in 'Qatari not Emirati' dress, and 'children, holding hands etc'. There should be a 'mix of local/international', with

representation of expatriates in western-style smart-casual clothing observing local ideas of modesty, but significantly no mention of the lower-status guest workers from across Asia who make up the majority of Doha's cosmopolitan population. Cars, trees, had to be 'the right kind', along with 'trappings like the shopping bags'. For Msheireb's marketing officer, the key to creating this sense of local ownership in the images was by evoking 'a nostalgic image of Doha from the past', particularly through their depiction of people walking through the siqats which criss-cross the wide boulevards. 'People look at the renders and say: "these streets are really tight, these alleys are really close".. that's the essence of community', he remarked, stressing the importance of the project being 'in line with local norms and cultures', and the role of the CGIs in visualising a 'romanticised Msheireb' which is 'like Europe but truly Qatari'.

Thus the CGIs further facilitate a negotiated vision of people in place which subtly unsettles established western conventions of urban space from a postcolonial perspective. However, in common with postcolonial re-shapings of urban space, this vision of a cosmopolitan yet culturally specific urbanity is also reinforced by one of exclusivity and exclusion (Jazeel 2013b). The Msheireb CGIs picture the transformation of an area in front of the government palace which had been occupied by low-income migrants for 50 years and developed a 'very downmarket image' (client marketing officer). The CGIs present a revitalised Msheireb populated by élite minority Qatari nationals lured back from suburban family compounds by the promise of smart apartments in a high-quality urban environment close to the nexus of power and commerce, following a tabula rasa clearance of the site and forced re-location of the migrant community to the urban periphery. But the CGIs also facilitated the daunting act of political will and mobilization of resources required to achieve this, performing a crucial role in assembling both the collective technical effort required to produce such a scale of urban transformation, and the emotional conviction required to push the project through. Hence we can see here how CGIs contribute to the production of a postcolonial urban aesthetic through the technical and affective agency they exert in reinforcing government-led

national and cultural narratives of postcolonial identity, which also affirm the status of the

elite minority while excluding certain other forms of cultural identity and hybridity which do

not fit the desired re-imaging of the city.

c. drawing in the viewer: atmosphere

It is this affective agency which we turn to next in our account of the ways in which the CGIs

contribute to the production of a postcolonial urban aesthetics, and which we describe as their

'atmosphere'. 'Atmosphere' has become fundamental to the selling of many commodities,

including architecture and urban design (Degen et al 2015), through a purposeful mobilisation

of visual and sensory stimuli intended to create a field of immersive and subjectively-

experienced audience engagement. This is the explicit intention of the Msheireb CGIs too,

conceived and developed to shape a sense of immersed, sensory urban place experience, an

embodied 'journey through the site' (architect), in contrast to the distanced and static display

of iconic buildings commonly seen in commercial visualisations. As the Marketing Officer

explains, they are intended to give the idea that 'this is where you and your family can have a

walk every evening and watch a circus act… [a place to] eat, breathe, work, play'. They draw

the viewer in and offer some sense of 'vision in motion' (Buscher 2006) - especially when

viewed alongside each other sequentially in mock-up form on site, or flicking through on an

iPad.

The creation of this immersive and mobile viewing experience is facilitated by the

technical apparatus and software behind CGI production, which enables innumerable views

and iterations to be generated from different viewpoints, and rendered with different lighting

effects and other evocative details - almost, if not quite, at the push of a button. The role of

the ALA as art director was heavily invested in the production of these sensory and emotional

effects, which he described as 'memorable moments', and how to achieve them. Accordingly,

he advised the architects and visualisers both on visual content, such as 'a smile in the

foreground', trees rustling and catching the breeze, babbling fountains, Qatari skies; and on technical production – the use of low-level camera angles, 'focus, mist, blur', and back-light, designed to bring the images to life and affective engagement with the viewer.

As one architect observed: 'on projects like Msheireb, … you're setting up this dream world, which is what [the ALA] is very good at – he can evoke things by the way he directs or works with the person doing the visualisation, without actually designing anything at all.' But visualisers also performed an important role in pulling all these elements together as part of an atmospheric 'story' for the development, and architects on the team fully recognized the importance of that input, knowing that an affective image was crucial to convincing the client, even though they were not always entirely comfortable with it: 'It distracts us from thinking about the things we really have in our control', objected one architect respondent, 'the tools aren't … about spatial investigation.... they're about producing a sexy image' (architect). Likewise, the development director and his team frequently articulated their distrust of visual 'smoke and mirrors', or distractions, that might disguise a lack of concrete detail in the architectural work. Despite these reservations, the client's brief specified that design outputs at each stage of the project should be delivered in the form of digital visualisations, ensuring that CGIs would play a role of primary importance in developing the look and feel of the development.

Evocative and emotionally affective CGI imagery was therefore recognised by all parties and deployed as key to visioning and mobilising broad support for a radical re-scaling of urban territory re-framed as 'felt place', and anchored in a sensory evocation of a modern cosmopolitan sensibility. Crucially, this evocation had to be both place-specific and transcendent, to speak to a local and international audience. But ultimately it was the CGI technology itself which enabled such emotionally affective and immersive images to be created at a commercial scale. The mutable quality of digital visualisations, and the technical resources available to visualisers to produce a wide range of views and visual effects, sets CGIs

apart from pre-digital forms and norms of architectural representation (Rose et al 2015). This, we argue, has specifically contributed to the production of a negotiated, hybrid and atmospheric evocation of postcolonial space, contrasting with traditional forms of colonial urban representation informed by a distancing, ordering and rationalising imperative – as manifested in the development of Doha between the 1950s and 1970s.

Jazeel, elaborating on the politics of spatial/visual representation, argues for the need to think beyond Western-centric representational interpretations of landscape to bring to the fore the 'mundane human immersions', an embodied experience of space, which opens up ways of thinking about space in terms of 'atmosphere', or a 'more-than-visual aesthetic' (Jazeel 2013a: 4). While commercial CGIs have been critiqued as glossy marketing images which can hardly be framed as contributing to that debate, the Msheireb case study suggests however that CGIs might have a role to play as a new type of technical apparatus through which the colonial gaze and its regimes of visual control might be recalibrated towards a different form of representation of urban space, one that does privilege an embodied and 'more-than-visual' spatial experience, as part of a postcolonial re-visioning of urbanity that embraces a hybrid, inter-referenced, and negotiated aesthetic, even while privileging certain narratives over others.

6. Conclusion

In his discussion of photography and the post-colonial, Pinney (2010) challenges the idea of photography as simply a receptacle or frame for the inscription of colonial power, particularly in the hands of anthropologists, and emphasises how the act of taking photographs is also embedded in the technical apparatus and the spontaneity of the event itself, of which the photograph itself is simply the trace. Similarly, we have re-framed a discussion of the visual content of CGIs within an understanding of their technical apparatus and the negotiations it enables in the production of the images across a transnational network

of people and places, in order to forward an argument about their role in the shaping of a hybrid postcolonial urban aesthetic. We have identified the key elements of this process as: the circulation of images through a global network of actors drawing on diverse forms of knowledge and understanding; secondly, their inter-referencing of various cultural sources and indicators; and thirdly, their evocation of atmosphere which is both place-specific and transcendent.

In some ways however, our case study is atypical – both in the intensive use of art-directed CGIs to lead the design, and in the cultural mission that frames this urban development project in Qatar. The case study shows CGIs performing a technical and affective assemblage of a specifically Qatari and postcolonial urban imaginary which goes against the grain of recent development in the region: as one architect commented, 'this was a project that had a whole new set of ingredients. And was also not even common in the region. Whereas, experience out here is more about bigger and better iconic Dubai.' Yet, this case study offers significant insights into the possible future trajectories of large-scale redevelopment at key sites of postcolonial urbanism. As we know, CGIs and, increasingly, animated 3D visualisation are playing an ever more important role in the production of urban development projects all over the world, becoming the key interface between clients, architects, contractors and the public. Highly valued for their realism, accessibility, ease of revision, *and* capacity to evoke emotional engagement among actors on large-scale projects, they are recognised not only for their technical capacity, but also as vital platforms for communication and negotiation among producers and audiences. At the same time, discourses around heritage and distinct cultural identities in cities old and new, but especially in the new emerging urban centres of the post-colonial world, are becoming central to urban development and place-making strategies. Our case study then offers a valuable model for understanding how digital technologies and visualising media can contribute to the

development of those discourses – as an important site for negotiating the representation of postcolonial cities.

This is not because they offer an alternative vision of urban futures, untainted by colonial pasts - far from it. Rather, it is precisely because they function as sites – or, better, as interfaces (Rose et al 2014) – for a complex process of hybrid inter-referencing through urban (re-)design. As we have argued, this inter-referencing works through the medium of CGIs at various levels, of which the paper has identified three: the production model (based on negotiation among producers and receivers); their visual content (assembling layered, collaged and hybrid cultural references); and the evoked atmosphere (producing an immersive and sensory experience to draw the viewer in). We propose then that CGI technology should be seen as central to a process of inter-referencing between cities within different networks, through which Doha's own urban history is being re-worked, and the city re-imagined in the international context. The Msheireb CGIs may then be seen less as an inscription of power emanating from the role of hired consultants based in the global North to shape the territories of the periphery - a one-way, orientalising and objectifying gaze – than as an entanglement and re-positioning of the 'other' and the former colonialist metropole within the context of a more complex contemporary, digitally-enabled, spatial imagination and reality (Thomas 1991, Amin and Thrift 2002).

While the dynamic and ostentatious postcolonial explosion of urban form elsewhere in the Gulf, notably Dubai, may be read at one level as a sustained and self-confident reaction against the restrained and orderly aesthetics of colonial intervention and control, the Msheireb CGIs picture a more conservative and subtle urban aesthetics which arguably appropriates the language of western urban place-making for its own purposes. As Tolia-Kelly maintains, much of the current discussion around atmosphere and affect in western place-making discourse reproduces a concept of universal embodied experience 'based on a Westnocentric literary and sensory palette' (2006: 214) which cannot be readily translated to

non-Western, especially Islamic, contexts (Degen et al 2015). However, and as this paper has shown, the Msheireb CGIs constituted an effective platform for interaction and negotiation through which these tensions and conflicting expectations could be mediated and resolved, by virtue of the digital medium, to produce a hybrid urban imaginary that could be acceptable to all parties in the process.

The Msheireb project is indicative of the change that has occurred in the positioning of global cities, and the emergence of new axes of power and influence in which Europe and America no longer assume their historical prominence. However we are fully cognizant of the fact that emerging visions of postcolonial urbanism grounded in discourses of hybridism, cosmopolitanism, and even creolisation (Hannerz 1987, Haesbert 2011) are also implicated in patterns of globalized capitalist market-led development which perpetuate singular regimes of exclusion and control. For 'cultural forms participate in politics' (Puri 2004:1) and urban space is the arena in which these two dimensions of the social come together. But it is precisely for this reason that we believe our study of the production of digital visualisations, as powerful technical and affective agents in the visioning and reproduction of urban space in cities around the world, has a valuable contribution to make to a critical understanding of those processes which are assembling such spaces into being. It offers vital insights into the mechanisms by which these larger political processes are mediated and negotiated - through the everyday working practices and relationships which enact, repeat, re-work, create and thus hybridise cultural forms.

Acknowledgments

References

Acuto, M.

    2014, Dubai in the 'Middle', International Journal of Urban and Regional Research

        38.5: 1732-48

Acuto, M and Steele, W

    2013   Global City Challenges. London: Palgrave Macmillan

Adham, K.

    2008 'Rediscovering the island: Doha's urbanity from pearls to spectacle' in

        Elsheshtawy, Y, ed, 2008, The Evolving Arab City, London: Routledge, p 218-

        257

Adham, K.,

    2009 'Petro-urbanism: the geo-politics of urban development in Doha, Qatar'.

        International Journal for Housing Science and Its Applications 33, 77–87.

Al Raouf, A.,

    2010 Knowledge-based urban development paradigm: Doha as a model for a

        knowledge and creative city in the Middle East. Qatar Foundation Annual

        Research Forum Proceedings AHP5.

Al Sayyad, N., Bierman, I. A., and Rabbat, N. O. (eds),

    2005   Making Cairo medieval, Lanham MD; Oxford: Lexington Books

Amin, A and N Thrift

    2002 Cities: Re-imagining the Urban, Oxford: Polity Press

Buscher, M.

    2006 Vision in motion. Environment and Planning A 38, 281–299.

Crinson, M

    2003 Modern architecture and the end of empire. Farnham: Ashgate

Degen, M., Melhuish, C., Rose, G.

    2015, Producing place atmospheres digitally: architecture, digital visualisation

        practices and the experience economy. Journal of Consumer Culture 0 (0) 1-22

Edensor, T., Jayne, M. (Eds.),

    2011. Urban Theory Beyond the West: A World of Cities. Routledge, London.

Elsheshtawy, Y. (Ed.),

    2008. The Evolving Arab City: Tradition, Modernity and Urban Development.

    Routledge, London.

Elsheshtawy, Y.,

    2008b. Transitory Sites: Mapping Dubai's "Forgotten" Urban Spaces. International

        Journal of Urban & Regional Research 32, 968–988.

Elsheshtawy, Y.,

    2011, 'Urban (Im)mobility: public encounters in Dubai', in Edensor, T., and Jayne, M.,

        (eds) Urban theory beyond the west: a world of cities. London: Routledge, pp

        219-236

Fahmy, K.,

    2005   Modernising Cairo: a revisionist account, in Al Sayyad, N., Bierman, I. A., and

        Rabbat, N. O. (eds) Making Cairo medieval, Lanham MD; Oxford: Lexington

        Books, pp 173-199

Fanon, F

    1968 Black Skin, White Masks. New York: Grove Press

Haesbaert, R.,

    2011, 'Cultural hybridism, identitary anthropophagy and transterritoriality', in Roca,

        Claval and Agnew, eds., Landscape, identities and development. Chichester:

        Ashgate: 81-95

Haines, C,

2011, 'Cracks in the façade: landscapes of hope and desire in Dubai', in Ong and Roy

eds, Worlding Cities: Asian experiments and the art of being global, Wiley-

Blackwell: 160-181

Hannerz, U.,

1987. The World in Creolisation. Africa: Journal of the International African Institute

57, 546-559

Jackson, M and della Dora, V.

2011, 'From landscaping to "terraforming"? Gulf mega-projects, cartographic visions

and urban imaginaries' in Landscapes, identities and development, eds J

Agnes, Z Roca, P Claval. Farnham Surrey: Ashgate

Jazeel, T.,

2013a. Dissimulated landscapes: postcolonial method and the politics of space in

southern Sri Lanka. EPD: Society and space 31, 61–79.

Jazeel, T.,

2013b. Sacred modernity: nature environment and the postcolonial geographies of Sri

Lankan nationhood. Liverpool University Press.

Kaika, M.

2011 Autistic architecture: the fall of the icon and the rise of the serial object of

architecture. Environment and planning D: Society and Space 29: 6, 968-992

Kamrava, M,

2013, Qatar: Small state, big politics. Ithaca NY: Cornell University Press.

Kanna, A. and Chen, X.,

2012, Rethinking global urbanism: comparative insights from secondary cities, London:

Routledge

Kanna, A (ed),

2013, The superlative city: Dubai and the urban condition in the early 21st century.

Camb Mass: Aga Khan Program at Harvard University GSD

King, A.,

1990, Urbanism, Colonialism and the World Economy: Cultural and Spatial

Foundations of the World Urban System. Routledge, London.

King, A.,

2004, Spaces of global cultures: architecture, urbanism, identity. Routledge, London.

McNeill, D.

2008. The Global Architect: Firms, Fame and Urban Form. Routledge, London.

McFarlane, C

2010 The comparative city: knowledge, learning, urbanism. International Journal of

Urban and Regional Research 34, 725-742

Melhuish, C (ed)

2014 Heritage and renewal in Doha. Urban Pamphleteer #4 (series editors Campkin, B.

and Ross, R.) London: UCL Urban Laboratory.

Mishra, V, Hodge, B.

n.d. What is post-colonialism? Textual Practice 5, 399–413

Mitchell, J,

2013. Tocqueville in Arabia: dilemmas in a democratic age. University of Chicago

Press.: 38

Nagy, S.,

2000. Dressing Up Downtown: urban development and government public image in

Qatar. City & Society 12, 125–147.

Nalbantoglu, G. B and Wong, C.T

1997 Postcolonial Space(s). New York: Princeton Architectural Press

New York Times

2013, http://www.nytimes.com/2013/07/23/arts/design/qatar-uses-its-riches-to-buy-

art-treasures.html.

Nasr, J., and Volait, M., eds,

 2003. Urbanism : imported or exported? Chichester: Wiley-Academy.

Ong, A

 2011 'Hyperbuilding: Spectacle, Speculation, and the Hyperspace of Sovereignty', in

  Ong and Roy eds, Worlding Cities, Wiley-Blackwell: 205-

Ong, A., Roy, A.

 2011 Worlding Cities: Asian experiments and the art of being global. Wiley-Blackwell.

Pinney, C.

 2010 Camerawork as technical practice in colonial India, in T. Bennett, T. and P. Joyce

  (eds) Material powers: cultural studies, history and the material turn.

  London: Routledge, pp.145-170

Puri, S.,

 2004. The Caribbean postcolonial: social equality, post-nationalism, and cultural

  hybridity. Palgrave Macmillan, New York.

Qatar 2030 Vision

 2008 http://www2.gsdp.gov.qa/www1_docs/QNV2030_English_v2.pdf.

Rabinow, P.,

 1995. French modern: norms and forms of the social environment. University of

  Chicago Press, Chicago.

Robinson, J.,

 2004. Ordinary cities: between modernity and development. Routledge, London.

Robinson, J

 2011, 'The spaces of circulating knowledge: city strategies and global urban

  governmentality', in McCann and Ward, eds, Mobile urbanism: cities and

  policymaking in the global age, pp 15-40

Ren, X.

    2011, Building globalisation: transnational architecture production in urban China.

    Chicago; London: University of Chicago Press

Rose, G., Degen, M., and Melhuish, C.

    2014, 'Networks, interfaces, and computer-generated images: learning from digital

    visualisations of urban redevelopment projects', in Environment and planning

    D: Society and Space 32:

Rotenberg, R

    2012, 'Towards a genealogy of downtown', in McDonagh, G and Peterson, M (eds),

    Global Downtowns. Philadelphia: University of Pennsylvania Press

Salama, A., Wiedmann, F.

    2013. Demystifying Doha: On Architecture and Urbanism in an Emerging City. Ashgate,

    Farnham.

Serageldin, I.,

    2008, in Cultural heritage and development in the Arab world, Hassan, de Trafford,

    and Youssef (eds). Alexandria, Egypt: Bibliotheca Alexandrina

Sheikha Moza bint Nasser

    2006 (chairperson Qatar Foundation), Msheireb Mission Statement:

    https://www.youtube.com/watch?v=xeBeelno0iQ

Sheller, M.,

    2009. Infrastructures of the imagined island: software, mobilities, and the architecture

    of Caribbean paradise. Environment and Planning A 41, 1386 – 1403.

Smith, N,

    2002, 'New globalism, new urbanism: gentrification as global urban strategy', in

    Brenner, N., and Theodore, N., Spaces of neoliberalism: urban restructuring in

    North America and western Europe. Oxford: Blackwell, pp 80-103

Swyngedouw, E., Moulaert, F., and Rodriguez, A.,

> 2002, 'Neoliberal Urbanization in Europe: Large-Scale Urban Development Projects

> and the New Urban Policy', in Brenner, N., and Theodore, N.

Thomas, N.,

> 1991. Entangled Objects: Exchange, Material Culture, and Colonialism in the Pacific.

> Harvard University Press.

Tolia-Kelly, D,

> 2006. Affect - an ethnocentric encounter? Exploring the "universalist" imperative of

> emotional/affectual geographies. Area 38, 213–217

Wright, G,

> 1991, The politics of design in French colonial urbanism. Chicago; London: University of

> Chicago Press.

Wright, G.

> 2011, 'Global ambition and local knowledge', in Isenstadt, S. and Rizvi, K., Modernism

> and the Middle East: architecture and politics in the 20th century. Seattle:

> University of Washington Press, 221-254

Yeoh, B.S.A.

> 2001. Postcolonial cities. Progress in Human Geography 25, 456–468.

Figure captions (all photos C. Melhuish)

See reference sheet and attached jpgs

1. Msheireb construction site, Doha, Nov 2013.

2. Visualising the future downtown: CGI on site, February 2012.

3. Visualising the future downtown on screen in London: visualisers' office, November 2012

4. CGIs installed at site office, Doha, as mock-ups, May 2012

5. Network diagram showing circulation of images across the production team