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Introduction

When we think about the architecture of the global city, often we have in our mind's eye a certain kind of rather spectacular imagery, which may entail crystalline skyscrapers, luxurious residential complexes, rich cultural buildings, or works of breathtaking avant-garde design. The discourses surrounding these kinds of architecture can be equally spectacular, studded with vocabulary like 'starchitects', 'the Bilbao effect' and the 'icon'.

But these images and concepts constitute a highly selective and vastly incomplete vision of the architecture of the global city, and can be misleading for those who commission and produce this architecture as much as for the researchers who study it. This raises two particular challenges, which this chapter seeks to address.

The first challenge is to overcome the self-selectiveness of what we think the architecture of the global city to be. To address this, this chapter proposes that researchers need to fix their analysis of this architecture within a framework that identifies the operational connections between architecture, cities and globalization, as well as sufficiently identifying the diversity of architectural landscapes subject to these connections. The framework proposed here is an extension of Sassen's (2001) method of analysing global cities, namely that the production of architecture is bound up within the social production and reproduction of the global city itself which she describes. By tracing this cyclical process—from the production of the global city to the production of architecture and through to the impact of architecture and *its* production on the production of the global city—the full extent of what we mean by *global city architecture* can be identified and its social import determined.

Other useful frameworks are briefly mentioned here as well. The Schumpeterian concept of creative destruction (Schumpeter, 1942; Harvey, 1981) explains how globalization processes assist in the displacement and replacement of architectural landscapes within cities. The logic of competition between cities, especially the activities of city marketing (Ashworth & Voogd, 1990) and place promotion (Gold & Ward, 1994), explains how city leaders demand specific kinds of

architecture in order to promote their city with specific kinds of images.

The second challenge is how to treat the spectacular imagery that dominates and even obscures our understanding of global city architecture. This chapter proposes that the prevalence of this imagery must be given its proper place within the frameworks outlined above. There are scholars and critics who attempt to discount the visual, representational, 'spectacular' or 'iconic' dimensions of architecture, implying that they distract us from the arguably more important social functions and impacts that architecture must attend to (Lees, 2001; Sudjic, 2005). However this stance merely precludes the important scholarly task of understanding why the architecture of the global city should abound with such spectacular imagery in the first place, and of understanding why the neglect of its social impacts happens so often.

Rather than see the image of architecture as a distraction, we need to identify its place within the framework of the production of the global city, and thus be able to weigh its impacts against those of other aspects of architectural works and their production.

The proposal put forward here is that the image(s) that a work of architecture or indeed an entire architectural landscape projects is something deliberately constructed by those who commission and design that architecture, and is intended to communicate specific messages to a remote target audience by the transmission of those images through various media. When it comes to global cities, the key ingredient in understanding this is the concept of scale. While the image that works of architecture project in the media may have various intentions (secure more work for the architect, attract visitors to the institutions, etc.), in the context of globalization and cities these images and the messages they convey are intended to be communicated at the global scale, to audiences far removed from the geographic, social, economic and political contexts of the physical work itself. As a result, the gulf between the construction of the image of a work of architecture and the construction of the physical building anchored in and responding to the needs, values and expectations of its local setting is at its widest in global cities. It is a great challenge for researchers to analyse the intentions and the impacts operating at both of these scales simultaneously, often because they are seemingly incommensurable, but it is important to find ways to combine these analyses rather than to discount the import of one or the other.

Global city architecture: More than the 'spectacular'

The practice of architecture provides our collective imagination of the global city with its most potent visual image: the city skyline. Some of the most iconic images of cities are the most famous skylines in the world, for example Manhattan in New York or Hong Kong set against its hills. Alternatively the image of a global city that architecture provides may be encapsulated in a single 'iconic building' (Jencks, 2005)—an individual work of architecture that captures the

world's imagination and fuses with the identity of the city within the global consciousness. Some of the most effective architectural icons of recent decades are the Sydney Opera House by Jørn Utzon, the Pyramide du Louvre by I. M. Pei and Partners, the Bilbao Guggenheim Museum by Gehry Partners, 30 St Mary Axe (nicknamed 'the Gherkin') in London by Foster and Partners, and the Burj Khalifa in Dubai by Skidmore Owings and Merrill. Another yet a no less spectacular and selective image of global cities is to see them as homes to the world's most innovative architects and other designers dictating global fashions and trends from their bases in districts like Clerkenwell in London or Chelsea in Manhattan, or through publications like *Wallpaper*, *Domus*, or *Architectural Review*.

When a global city wishes to illustrate its supremacy as an economic capital, these are naturally amongst the images it invokes. Likewise when a city aspires to become a global city, it is these images it turns to for inspiration. There is a tendency for leaders to take a very superficial reading of global cities (especially of very new cities such as Dubai and Singapore), to seek to replicate their image by assembling what they believe to be the necessary parts—skyscrapers, shopping malls, railways, etc.—and to eliminate from view all that seems at odds with such an image—history, temporality, dilapidation, informality, spontaneity.

There are two misconceptions involved in these kinds of efforts. The first is the belief that global cities do not also contain these elements of decay within their environments, and the second is that it is necessary to actively eradicate them to become a global city. Neither of these is true of course; it is simply that global cities rarely advertise the fact. But to the people who inhabit global cities, there are always areas large and small known and even cherished for their decay, their decadence, their street life, their chaos, their resistance to planning and control, or just their simple ordinariness. The concept of the 'ordinary city' (Robinson, 2005) is a useful reminder that despite whatever classifications are applied to a city, such as 'global' or 'world' city, there are many more mundane facets to that city than those indicated by such an appellation. Likewise the architecture of any city we might call 'global' extends far beyond that which we associate with the city's 'global' face into a landscape of ordinary buildings and spaces that comprise the rest of the city.

In this light there is no categorical distinction between a 'global city' such as Singapore and a city that aspires to become one such as, say, Surat. Both may desire to have 'global' architecture, and both will necessarily contain ordinary buildings, and neither city's makers may rightfully focus on one to the neglect of the other. When we talk about 'the architecture of the global city' then, we are compelled to talk about all of its architectures, whether they fit our image of what a global city should look like or not. However this is not to say that when discussing 'the architecture of the global city' we should dilute our focus to any architecture in any urban area. Rather it is to change the way we narrow our focus. We do not focus on architecture within

specific 'global cities', but on architecture produced by processes of globalization, whichever cities they are found within. At the same time it is to broaden our discussion beyond the stereotypical images we often envisage.

Identifying global city architecture: The production of the global city

What then can be meant by the architecture of the global city? How can we identify it? This must be done in tandem with the task of delineating the global city itself. Here however we have a reasonably sound methodological footing. In her own iconic work, *The Global City* (2001), Saskia Sassen as a typical sociologist takes an interest in how this social condition reproduces itself—how is it that global cities continue to dominate the global economy throughout time? Her thesis was that a global city is one that comprises a core community of advanced business functions—corporate headquarters, financial institutions, accountants, lawyers, management consultants, media, design and communications—whose collective decisions determine the flow of vast sums of capital and other resources around much of the globe, including into their own city, thus reinforcing the city's position within the global city network year after year.

We can use this as the starting point for our understanding of global city architecture, moving from the production of work to the production of space and architecture. The complexity of the advanced business functions in the global city core produces work for several thousands of highly educated professionals who must congregate not only within the same city but within the same neighbourhoods within that city to collaborate effectively, such as New York's Lower Manhattan, Paris' La Défense or London's Canary Wharf. But the professional and personal needs of these businesses and individuals in turn produce work for several thousands more workers to be employed in sectors such as retail and local services, hospitality, waste and sanitation, construction and maintenance.

All of these activities produce spatial needs in the form of operational, residential and recreational spaces. For the professionals these include premium office spaces, residential developments, leisure and sporting facilities; for other workers it implies the retail and hospitality spaces they may operate within as well as the usually lesser quality residential accommodation they may find or have provided to them within the city. These spatial needs generate demand for certain kinds of architecture, whose qualities typically depend on the economic status of their users. The hierarchical nature of a global city's labour force gives rise to large economic and social inequalities, and these are expressed in its architecture as much as in any other material dimension of a city.

At the top of this hierarchy of architectural quality are the skyscrapers and other forms of premium developments designed to compete in an extremely heated commercial tenancy

market to attract the greatest immediate demand from global business, what Sklair (2005) calls the 'corporate fraction' of the 'transnational capitalist class'. The result of this competition is that almost all developments at this level are pushed towards architectural qualities that denote values prized by commercial tenants, in particular reliability, security, flexibility, prestige and low running costs. The architectural qualities that result may be described as dematerialized and minimalist, where the messiness, physicality and the natural aging of traditional building materials are suppressed, concealed or engineered away, as is much complexity of detailing, so that the building demonstrates and signifies those prized values, or in other words projects an image that corresponds with them. This leads to an overwhelming uniformity of architectural expression in global cities throughout the world which can be observed at a glance. Even at the scale of the individual building many design motifs can be seen to repeat themselves *ad nauseam* across several global cities. This leads many to complain that globalization encourages a homogenization of the world's cities, causing one to be indistinguishable from any other.

For the building types that seek to attract the global city professionals themselves, such as residential developments and retail facilities, the set of values that architects must respond to changes somewhat, allowing for a freer universe of architectural expression. Prestige and luxury remain important, as do lifestyle amenity and a sense of exclusiveness. But to answer to the greater individualism of users' tastes, the architecture of these types becomes stylistically more diverse, while often more explicit in its stylistic borrowings from other centres or architectural cultures. For example, architects may borrow consciously from Italian hilltop cities, royal Japanese gardens, Moroccan bazaars, Manhattan art deco, Parisian art nouveau, or London townhouses, notwithstanding the fact that the climatic, topographic or social contexts that generated those architectures may have nothing to do with the settings they are applied to. But these adaptations can occur so readily only because such tropes are easily recognized by the well-educated and well-travelled professionals they seek to attract, and may be associated in their minds with the values mentioned above. Adding to the criticisms levelled at skyscrapers, the indiscriminate blending of styles at this level of architectural production may lead to critiques that global cities become too *diverse* in their architectural expression, as the local vernacular and traditional urban form become supplanted by a pastiche of artificial and alien styles, yet at the same time may still result in homogenization of the world's cities by reducing them to the same eclectic blur of styles.

Alternatively, many clients may have more sophisticated tastes and use their developments to participate in the architectural avant-garde, commissioning buildings with a specific intent to push the forefront of contemporary design or exploit it as a market advantage. This hints at another dimension of global city architecture, which is that for many architects the most vibrant global cities are those that play host to the most innovative communities of architecture studios and schools, where the most forward-thinking ideas and technologies are developed and put

into practice, and where their output finds its most receptive audiences, for example Los Angeles, Rotterdam and Barcelona.

While there is usually little overlap between the small creative firms that populate these cities and the large commercial architecture offices employed in the most premium global city developments, the commercial and the creative sides of the industry converge in the production of the architectural icon—a building which seeks to be both a landmark within the urban landscape as well as within the global consciousness. The use of a creative designer in a highly visible premium development is almost always a conscious commercial decision intended to gain a market advantage, and yet the instinctive conservatism of commercial developers expresses itself here as well, again through the tendency to hire the most well-established and prominent of avant-garde designers rather than take a chance on smaller firms. Thus the creation of a 'star system' of architects in which the most visible projects are awarded only to the most well-known, and thus least risky, creative designers such as Zaha Hadid, Frank Gehry, Renzo Piano and Norman Foster.

So far this is the 'global' face of architecture, Sklair's 'transnational capitalist class' (Sklair, 2005; Adam, 2012), but what happens beyond these landscapes? Lower down the architectural hierarchy are the spaces produced for the workers who support the core global city professionals rather than for those professionals themselves, and for which economy of means is usually the overriding factor. This may mean living in poorly maintained housing projects built by the government, by one's employers, or by the wider private sector, or overcrowding in older generations of housing stock maladapted for multiple tenancy. The lack of disposable income available to such workers to spend on their living environments means that housing developers do not see them as a profitable demographic to cater to, and expend little consideration on their architectural quality. Likewise, because they are not considered a lucrative source of economic growth, city leaders focused on growth spend little energy trying to create an architectural environment that will attract them.

On the other hand, because there is little expectation that such projects will be profitable, there is less concern to hire the most commercially reliable architects to design them. Social and low-cost projects become a space where smaller, cheaper architectural practices may be given the opportunity to build, or where more risky architectural ideas can be experimented with, especially in European cities with long traditions of social housing. More enlightened industrialists may also seek such architectural experimentation in their working environments as a means to improve morale and productivity, reduce operating costs or gain other efficiencies. The experiments enabled by less visible projects such as these become opportunities for a more sustainable spectrum of technologies and values to enter into the production of architecture elsewhere in the global city. The same goes for many other building types that are indirectly

generated by the population growth associated with globalization, among them schools, universities and hospitals.

Global city architecture and displacement

These are all architectures installed by the processes of globalization; one may also talk of architectures within global cities that are displaced by the very same processes, or that have been condemned to neglect in anticipation of them. These may include many areas with heritage value, such as the *hutong* (alleyway) districts of Beijing or the courtyard houses of Dubai, which cannot be rapidly adapted to the density and use requirements of a globalizing city. These architectures are not necessarily dichotomous; later generations of globalization may cannibalize architecture installed by earlier generations, for example. Another line of social theory helps us to understand how the architecture of the global city is produced in this sense. Joseph Schumpeter's (1942) conception of 'creative destruction' argues that capitalism proceeds by seeking to *create* new opportunities for profitmaking, and when these opportunities can only be exploited by coming into conflict with existing assets, the ensuing competition or crisis causes some of these assets to be *destroyed*. This is especially true in times of general economic crisis, where the same profit streams have been growing for a generation or more, all existing avenues for further growth have been exhausted, and society as a whole must reorganize itself for new opportunities to emerge, usually with great social and political pain.

David Harvey (1981) brings a geographic dimension to this process with the concept of the 'spatial fix', part of which is the notion that new opportunities can be found by forcing open new geographical spaces for globally mobile capital to operate within. These may be new countries, as when corporations decide to move into 'emerging markets', new cities, or new neighbourhoods within cities, as when city leaders earmark and redevelop special zones within their territories to attract global business. These 'new' areas are naturally inhabited by existing 'assets'—existing living and working spaces, businesses, residents and communities. Many institutions and regulations must be pushed to evolve in coordination in order to make it economically and politically palatable to destroy these assets. For example development plans may be revised to allow increased densities on different sites, causing sites to be worth more if the existing low-density buildings upon them were to be demolished and larger buildings erected than if they were simply allowed to earn rental income as they are.

These theories imply that the displacement and destruction of the existing architectural landscapes of global cities is an essential feature of global capitalism. They take various forms including eviction (the displacement of individual residents and other tenants by force of law or violence), gentrification (the displacement of whole communities or socioeconomic strata from a neighbourhood through market forces), and demolition. In all three of these forms of

displacement, political ideologies and allegiances may be invoked beyond pure economic arguments. A political discourse may arise to demonize residents or communities that an economic elite wishes to evict, for example by accusing them of antisocial or criminal behaviour such as drug dealing, extortion, or land grabbing. The political significance of an architecture may be employed against it, as in the case of the Ottoman-era Ajyad Fortress in Mecca, a beautiful citadel whose demolition to make way for the rather more crass and infinitely more commercial Mecca Royal Hotel Clock Tower could occur only in a political context that denigrated Ottoman heritage and influence within Saudi Arabia.

In other cases the destruction may be more aesthetic than physical. In many cities the heritage value arises through the homogeny of architecture within historic neighbourhoods, and is destroyed not by their demolition, but by the juxtaposition of incongruous styles and forms. London's skyline is preserved through the use of 'protected vistas' which prevent new construction from intervening within sightlines from prominent hills to specific architectural landmarks within the city, especially St Paul's Cathedral and the Palace of Westminster. Tall buildings between or beyond these landmarks would destroy these cultural assets without any physical demolition being required. And even when it avoids these sightlines, a tall building may still interfere with the cultural value of other architectural heritage. It has been argued, not least by UNESCO, that the erection of the Shard at London Bridge by Renzo Piano Building Workshop at a height of 309.6 metres overshadows the World Heritage-listed medieval Tower of London to such a degree that the Tower can no longer be appreciated in the same way, and perhaps ought to lose its listed status.

The purpose of enumerating all of these landscapes, whether produced or displaced by the processes of globalization, is to demonstrate the breadth of the phenomenon that we may call global city architecture, and to show how our image of the subject may need to expand if we are to begin to manage and analyse it all effectively without the selective filter of prejudice or our yearning for the spectacular.

The producers of global city architecture and the logic of competition(s)

Within these processes however, what causes the agents who produce these architectures to do so? What values and ambitions motivate them? While the theories of social production and creative destruction explain the structural drivers of global city architecture, other literatures explain the actions of individual stakeholders. For city leaders, their actions are most commonly inscribed within a logic of competition—competition with other cities to attract businesses, investment and highly-skilled workers. Winning this competition is often captured by the stated objective to become a 'world class city', a city whose business amenities and physical environment meet the standard of any of the world's most prominent business capitals.

Within this logic, city leaders embark on several coordinated strategies, including infrastructure investment to meet the perceived needs of these businesses, marketing campaigns, trade relations, and other image-making exercises. Some of these activities generate architectural needs directly, such as airports, road and rail infrastructure, hotels, convention centres and business parks. For others, the architecture is generated indirectly through policies and political decisions that favour specific kinds of architecture.

At the level of individual developments, the mechanics of commissioning, designing and constructing a building helps to explain the architectural character that emerges. In many global cities, policies and institutions have been developed ostensibly to ensure the architectural design quality of buildings. Competitions may be organized voluntarily by clients or mandated by government policy for projects of sufficient size or social significance, and may consist of written expressions of interest or drawn design proposals. While at first glance the competition of ideas that these processes generate appear to be in the public interest, a closer understanding of how architectural ideas are produced under the pressure of competitions gives cause for scepticism. As the critic Witold Rybczynski surmises, 'the charged atmosphere promotes flamboyance rather than careful thought, and favors the glib and obvious over the subtle and nuanced.' (Rybczynski, 2002) The competition brief may explicitly call for an 'icon' or a 'landmark' building, goading architects to produce spectacle rather than a considered response to local needs.

The architectural historian Charles Jencks suggests that the purpose of an icon is to play the role of the 'enigmatic signifier', to hint at many meanings while explicitly targeting none of them, allowing observers to attach to it whichever meaning is most significant to themselves, increasing its potency as a cultural object. (Jencks, 2005) Yet this hardly seems like the real intention behind the demand for an icon. If icons are 'signifiers', then I would argue that they are not intended to be 'enigmatic', but rather to come to signify quite explicitly the prestige of the cities they are placed in. Any enigma observed in the form of such buildings is not the result of a desire to evoke multiple meanings in a postmodern sense so much as it is to avoid explicit analogies or references to other works that might distract the observer from the intended response, which is to see the project and the city in a more positive light. From the designer's perspective as well, the enigmatic quality is often due to a desire to differentiate the design from its precedents, to arrive at an original form that demonstrates the architect's talent as a creative professional, rather than necessarily a wish to pursue formal abstraction. The creation of an icon is used as a project's 'unique selling point', a most conventional commercial imperative.

When city leaders request an architectural icon, they may be seeking to replicate what is known as the 'Bilbao effect'—the supposed effect that the popularity of the Bilbao Guggenheim had in turning around the economic fortunes of the city after its opening in 1997. Whether or not the

Bilbao effect exists is itself highly contested. It is true that the opening of the museum preceded a significant short-term boost in tourism to the city, but less certain that this generated any significant economic development in other sectors in turn (Gomez & Gonzalez, 2001; Jones, 2004). And city leaders often place too much emphasis on the quality of the architecture itself, forgetting that the museum was anchored in a long-term urban redevelopment plan (Adam, 2012) and backed by a formidable and proactive marketing machine which may in fact have made the difference between Bilbao and any number of other global city pretenders. In the wake of the Bilbao Guggenheim many other Spanish cities of similar scale rushed to produce similar institutions, such as Valencia's City of the Arts and Science and the Auditorio de Tenerife both by Santiago Calatrava, and Santiago de Compostela's City of Culture by Eisenman Architects, none of which have had the same impact while placing enormous financial strain on their governments.

A related phenomenon is the stated demand for a supertall building, usually for the tallest building in the world in one category or another. While for clients of such buildings—as in Dubai, Kuala Lumpur, Shanghai and Taipei—supertall buildings demonstrate their arrival in the peerage of global cities, for many critics they reveal nothing other than the insecurities of those clients (Dovey, 1996; King, 2004). The critic Jonathan Glancey notes that supertall buildings are 'increasingly symptoms of "second-city syndrome"' (Glancey, 1998).

These experiences reinforce the lesson that for all its seductiveness, architecture cannot simply be entrusted with the task of consolidating a city's position on the world stage; at the very least it must be accompanied by other economic strategies to ensure that any short term gains translate into development in other sectors of the city. But for researchers it also shows that fundamental to the analysis of global city architecture is identifying the intentions and the values of those that create it, and the mismatch between these intentions and values and the real impacts of the completed work.

Scale and image

We have identified that globalization produces several kinds of architecture, some of which are highly visible, some often neglected both by city makers and by researchers. We have identified that these architectures are not produced for their own sake but for specific economic functions, intimately tied to profitability and the logic of competition between places, though not always assured of success. But more than other forms of architectural production, the architecture of the global city forces researchers to consider the question of geographic scale.

Peculiar to the processes of globalization is its use of architecture in the image-making of the city at the global scale. It is wrong to discount the practice of image-making in the analysis of

this architecture but it is also wrong, as Lees (2001) argues, to restrict one's analysis to the representational dimension of architecture. The image-making and the materiality of architecture must both be evaluated; the special lesson of globalization is that these aspects have a tendency to operate at different geographic scales, and cannot be weighed easily against each other.

While in most other contexts city makers are usually preoccupied with providing sufficient space for various local activities or satisfying a specific market demand, in global cities their sights are much more firmly fixed on using architecture as a medium of communication, and to a much wider geographical audience. Thus different types of architecture are generated at different scales even within the one project, responding to different (and sometimes contradictory) socioeconomic intentions and impacts at each scale. For global cities a common example is architecture intended to attract certain business interests operating at a global scale, while physically suppressing street-level and other local business interests to do so.

Singapore

As stated above, one may observe in many city leaders a desire to reproduce a certain image of the global city within their territories. What is this image? For one government-appointed master planner in Dar es Salaam, 'Singapore is his role model, and he favours big projects to clear slums and build bridges, roads and out-of-town settlements.' (Boyle, 2012) Elsewhere 'Singapore, that paragon of order and control that is the antithesis of India's messy urbanism, is widely admired by India's bureaucratic elite.' (Chattaraj, 2012) Or this: 'the idea of a world-class city [...] is a slogan, as if devised by a marketing agency, to sell the latest fashions in cosmetic urbanism [...] now Dubai, now Singapore, sometimes with a hint of the Manhattan skyline.' (Echanove & Srivastava, 2011) Time and again, city leaders in the developing world cite Singapore as an image they want to replicate. And it is an arresting image, with recent projects like the Marina Bay Sands by Safdie Architects, the United Overseas Bank Plaza by Kenzo Tange Associates and the Sail at Marina Bay by NBBJ transforming the skyline. But as with all global cities, it is an incomplete image, and in fact the most important architectural lessons to be taken from Singapore lie elsewhere in the city.

Nevertheless, if this is the lesson that other city leaders take away, the city leaders of Singapore themselves are partly to blame. The Singapore government's Urban Redevelopment Authority (URA) actively promotes its urban development expertise through external consulting activities and technical assistance conducted by the URA Consulting Group. By promoting themselves and their urban planning achievements through such an agency, Singapore is in a position to project the image it chooses and to shape the image that its foreign partners receive, and sadly it has proven more interested in promulgating its spectacular modernity than its extraordinary

achievements in public housing. Part of the difficulty is the cognitive gap between the experts in Singapore and their audience in other cities. In Singapore, the dominant planning discourse is now one of 'sustainability', a natural concern for a mature city whose economy is driven by advanced consumption. But the meaning of the discourse can easily be misunderstood by leaders of cities in the early phases of rapid urbanization, who have yet to shift their mindset from one of resistance to urbanization to acceptance and accommodation of it. For a leader in a context such as Lagos or Kinshasa, the bewildering expansion of the urban agglomeration seems unsustainable itself. Faced with this, Singapore's discourse of 'sustainability' may be misinterpreted as reinforcing their belief that this rapid expansion is something to be resisted, limited, controlled, whereas it ought to be interpreted as a call to reorganize one's local institutions and technologies to meet future resource demands. There is therefore a translation task to be undertaken to ensure that the lessons a city like Singapore has to offer are not distorted by the prejudices of city leaders in other contexts.

Because while the benchmark that global cities such as Singapore set is a product of the spectacular imagery already discussed, the image that Singapore projects is in many ways a by-product of its 'global city' efforts in housing and other fields, not its explicit objective as it is for the cities that strive to match it. For example, the history of Singapore's housing shows that architecture was a means to an end, and that ultimately it strove for global city status more through the character of its people than through the character of its architecture per se. While visitors from the developing world come to Singapore today and see a landscape free of the shacks, tenements and overcrowding which pervade their own city, this was not true for most of the twentieth century, when immigration caused Singapore's population to balloon. Housing surveys in the 1950s reported population densities of up to 50,200 persons per square kilometre in the city centre; in one part of Chinatown 'over half of the residents lived in cubicles with an average size of about 9 sq m.; a high proportion of these cubicles had no windows; sanitary conditions were intolerable and the buildings completely dilapidated.' Outside the centre, 'squatter settlements mushroomed'. (Eng & Savage, 1985, p. 56)

The diagnosis was a general shortage of housing, not just for the urban poor but for families of all levels of income. The colonial government response was to embark on a public housing programme overseen by the Singapore Improvement Trust (SIT), though its first satellite town Tiong Bahru was aimed at the open market rather than the urban poor. Like contemporaneous housing schemes in Western Europe, the design of Tiong Bahru reflected the modernist themes of the architectural avant-garde, with streamlined curves, flowing internal spaces, facades articulated with long balconies and ample windows for light and ventilation. In the independence era this effort was scaled up dramatically under SIT's successor the Housing and Development Board (HDB), which ranks as one of the world's most successful public housing programmes of the late twentieth century. Whereas many developing-world cities emphasize the

'eradication' of slums and pay less attention to the obligation to rehouse their residents, Singapore's focus was on restructuring the centralized economy to provide housing at such a rate that slums need no longer persist. Between 1960 and 1990 the HDB constructed 669,247 dwelling units (Teo & Huang, 1996, p. 314) by the end of which it housed '87% of the country's population' (Teo & Huang, 1996, p. 307) of three million people, an extraordinary result. A lot of the design quality of Tiong Bahru was lost as rate of production increased and concrete tower blocks became the dominant form; nevertheless a concern for the liveability of both the buildings and their interiors remained a hallmark of Singapore's government-built housing.

For example, 'housing estates were planned along the lines of the "neighbourhood concept" of the European postwar new towns, with some modifications to suit [...] the Asian "communal way of living"' (Eng & Savage, 1985, p. 58). With regards to the units themselves, 'the Design and Research Unit was established by the HDB specifically to study and advise on ways to improve the standard of flats,' which led to 'flats with larger rooms and improved ventilation and fixtures' (Cairns & Jacobs, 2008, p. 1979). And in the 1990s it took to 'using highly visible designs to add variety to the skyline of the estates and to the facades of blocks', and expanded its tradition of 'courtyards, walkways and pavilions [...] meant as areas for interaction.' (Teo & Huang, 1996, p. 307) A famous feature of Singapore's public housing is what is known locally as the 'void deck', in which the ground floor is left open, avoiding the inherent insecurity of ground floor apartments and providing a large covered open space for various communal uses. (Goh R. , 2003; Ooi & Tan, 1992)

One of the reasons the new nation generated such a successful housing programme was the need to establish social cohesion after the ethnic tensions that produced it, and a sharp trajectory of economic expansion and housing construction were both seen as essential to this objective (Sim, Yu, & Han, 2003). Architecturally, this means that the values of social cohesion and interaction came to be expressed throughout the public spaces and common areas of its housing. Even 'the move from a "modern" to "post-modern" architectural style' in the 1990s was done to make public housing more responsive to 'public input and expression' (Goh R. B., 2001, p. 1589), an important democratizing initiative.

This was not simply an internal objective but part of a drive to 'mark Singapore's arrival as a global city'. (Goh R. B., 2001, p. 1589) As Goh notes, 'in his 1999 National Day Rally speech entitled "First-world Economy, World-class Home", Prime Minister Goh Chok Tong explicitly links Singapore's economic competitiveness with changes in the housing landscape,' and indeed 'HDB's concept plans for the public housing estates of the 21st century, with their greater degree of client feedback, greater diversity of styles and emphasis on lifestyle and amenities, are clearly part of a larger national project of creating an attractive living environment by global standards' (Goh R. B., 2001, pp. 1598-99). The important lesson here is how Singapore stakes its

reputation as a global city not so much on the visual appearance of its housing architecture as on the values integrated within its production and use. This is very different to the reading made by aspiring global city leaders on their visits, who often see little more than a landscape of spectacle and 'order and control' that they have failed to impose on their own populations. It is also important to note that Singapore's efforts are applied just as much to its public sector projects, whereas in many aspiring global cities most of the emphasis is on speculative real estate developments with little social dimension. This is not to say that Singapore is necessarily a picture of architectural virtue, but shows that while city leaders around the world might aspire to replicate what they perceive to be the image of Singapore, the architecture of this global city is far more complex and instructive even than what Singapore itself perceives it to be. It is also worth noting that Singapore constructed its model of a global city in positive terms—social cohesion, a global standard of living, a knowledge economy—rather than the negative terms expressed by other leaders—cities without 'slums', without 'mess', without 'disorder'.

Conclusion

This very brief case study of Singapore shows not only how the image of one global city's architecture may be misleading and obscure more instructive analyses of its architectural production, but also how the image itself and its communication at the global scale becomes a factor in the production of architecture in other (would-be) global cities and therefore must be analysed at the same time. These are the challenges then that future scholars of the architecture of the global city must confront: how to anchor their analyses within an understanding of the breadth of interactions between the processes of architecture, urbanism and globalization; how to appreciate the dialectic between the visual, representational, spectacular and media dimensions of architecture and its physical, functional and social dimensions; how to appreciate the dialectic between the global, local and human scales of these dimensions; and ultimately, how to unravel and thus be able to challenge the assumptions, values and intentions informing the production of architecture.

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