

Polymorphic Urban Landscapes: the case of New Songdo City

DRAFT: PLEASE, DO NOT QUOTE OR CITE WITHOUT PERMISSION

Lisa Choi M.A.*

©Lisa Choi

*University of Oxford, School of Geography & the Environment
South Parks Road
Oxford, OX1 3QY, United Kingdom
lisa.choi@ouce.ox.ac.uk

Paper presented at the RC21 International Conference on “The Ideal City: between myth and reality. Representations, policies, contradictions and challenges for tomorrow's urban life” Urbino (Italy) 27-29 August 2015. <http://www.rc21.org/en/conferences/urbino2015/>

Introduction

Though New Songdo City (henceforth Songdo), located 65 kilometres southwest of Seoul in South Korea (Figure 1), has been bestowed with numerous titles – eco-city, smart-city, aerotropolis, city of tomorrow – one title in particular is foundational to this new city. This paper analyzes the evolution of Songdo as an ‘international’ city as it has been envisioned, built and articulated by national and local governments, as well as lived by the city’s residents. By tracing the messy and complex development of Songdo, and its purportedly international qualities, this paper interrogates ‘international-ness’ and the ‘international city’ as both products of, and challenges to world and global city discourses. Additionally, as Robinson (2005) notes, urban studies literature has tended to focus too narrowly on only a few cities, largely overlooking processes of becoming a global city. Consequently, this research is interested in exploring the politics of becoming a world city, using Songdo’s specific material, policy and rhetorical interventions as points of departure.



Figure 1: Map of New Songdo City, South Korea
Source: Gale International Press Kit (2015)

Model Cities and 'International-ness'

Through the top-down decisions of the South Korean central government, Songdo has been strategically planned to intervene in existing global and world city networks (Kim, 2013). Songdo is a flagship development that seeks to “[legitimate] the space of the nation through the space of city” (Ibid., p. 20) as Korea attempts carve out its own distinct space as a Northeast Asia ‘hub city’ (Gale International, 2015). The Incheon Free Economic Zone (IFEZ), of which Songdo is a constituent, adopted the slogan, “IFEZ attracting world attention” (IFEZ, 2011), clearly alluding to its global aspirations. Consequently, this paper is structured by world city and global city debates. Following Robinson’s call for a more cosmopolitan comparative urban studies, and a reconceptualization of cities as ‘ordinary’ (Robinson 2002, 2005, 2011), Songdo’s rhetorical and material construction as an international city are analyzed.

In the context of globalization and increased connectedness, a “frenzied interest in the apparently frictionless circulation of knowledge from city to city through the identification of model cities or best-practice initiatives” (Robinson, 2011, p. 2) has emerged where western urban models dominate as pedagogical examples. Unsurprisingly, one of the primary mechanism through which Songdo seeks to put itself “on the map” (Robinson, 2002) as an international city is through the co-optation of urban models from other notable urban centres that have already been characterized as world or global cities, including the usual suspects of New York and London. These models are foundational to Songdo’s urban designs, site-specific architectural styles, and even projections of individuals’ cosmopolitan experiences of eco-, and smart-city life. In turn, Songdo’s proponents present the city as a model for other urban developments around the world, particularly in China, India, and other places where urbanization pressures are especially high. Using strategic symbolic characterization and place promotion (Kim, 2010) predicated on its international-ness, Songdo is legitimated as a public good in the dominant narrative and attempts to materialize the inter-dependent and mutually reinforcing link between urbanization

and globalization (Douglass, 2000). Of course, urban models must be questioned not only for what they purport to do – to (re)produce world cities elsewhere – but also to investigate the qualities of the resulting cities. The (re)production of a particular vision of international cities must not, therefore, be taken for granted. Rather, an examination of Songdo helps to focus attention on ‘cities beyond the west’ (Edensor & Jayne, 2012) and the myriad of ways that multiple places, contexts, and actors are implicated in their making.

The discourse regarding global and world cities produces a ‘regulating fiction’ that too often limits the ways that academics, policy-makers and city-builders imagine the future possibilities of cities (Robinson, 2002). A narrow range of options that focus too narrowly on certain parts of the urban economy or physical parts of the city neglects more nuanced and varied urban experiences. Too often, ‘city-ness’ is assessed relative to a small group of (mostly western) cities that reproduces a ‘metrocentric’ hierarchy of attention that privileges some cities while erasing others (Bunnell & Maringanti 2010; Robinson 2002). This ultimately “[privileges] the west as the source of economic dynamism and globalization” (Robinson, 2002, p. 539) that increasingly leads to large-scale private land developments and investments that take cues from American-style urbanism (Dick & Rimmer, 1998). Though claiming to be international in scope, world cities and projects that seek to reproduce global urban spaces are increasingly similar (Taylor, 2004).

New Songdo City exemplifies many of these global and world city impulses. Built on reclaimed land, Songdo’s ‘blank slate’ afforded planners the rare opportunity to shape the city in, more or less, any way imaginable (within the bounds of the local governing authority, Incheon Metropolitan City). Having to start ‘somewhere’, planners and architects looked to cities such as New York, Paris and Venice for design inspiration, literally overlaying and superimposing the centres of these cities to form the core of Songdo (KPF, 2002) (Figure 2). However, despite this abstraction from the specific

development context of South Korea, and more specifically urban development and reclamation in Incheon, Songdo is deeply entangled in social, historical and cultural legacies that have influenced urban development at the global, national and local scales.

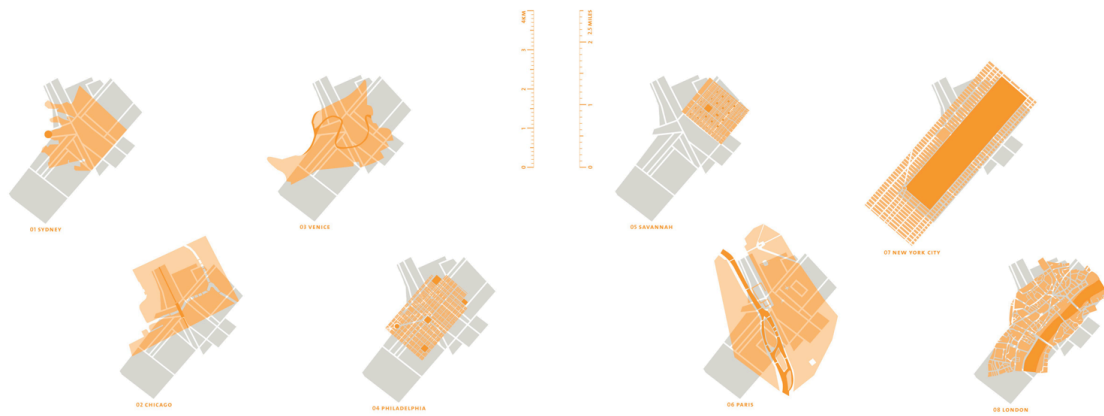


Figure 2: Urban Archetype Overlay

Overlays of urban forms from Sydney, Chicago, Venice, Philadelphia, Savannah, Paris, New York City, and London on top of Songdo IBD.

Source: Kohn Pederson Fox (2015)

Characterized as an urban mega-project that is developed with explicit internationalization strategies in mind, Songdo symbolizes a global urban ‘utopia’ for the 21st century (Olds, 1995). In the context of globalization and the increased importance of inter-urban competition, the scale and scope of the Songdo development reflects the increasing relevance of urban entrepreneurialism (Harvey, 1989), acting as a localized solution for global and regional competition. Songdo is also part of a new scale of development – the special economic zone that is intermediate to the city and municipality – and is one of three cities within the jurisdiction of the Incheon Free Economic Zone (IFEZ). Especially since the 1997 financial crisis, foreign direct investment (FDI) was seen as essential to the Korean economy, prompting the development of special economic zones across the country

(Shwayri, 2013). Since its creation in 2002, the Incheon Free Economic Zone Authority (IFEZA) has overseen the development of Cheongna, Yeongjong and Songdo (Figure 3). The establishment of IFEZ is an example of the transnationalization of territorial space (Douglass, 2000) that aims to create a global reach, attract international business, act as a 'bridge to the world' (IFEZA, 2014), and thereby produce Songdo as an 'international' city.

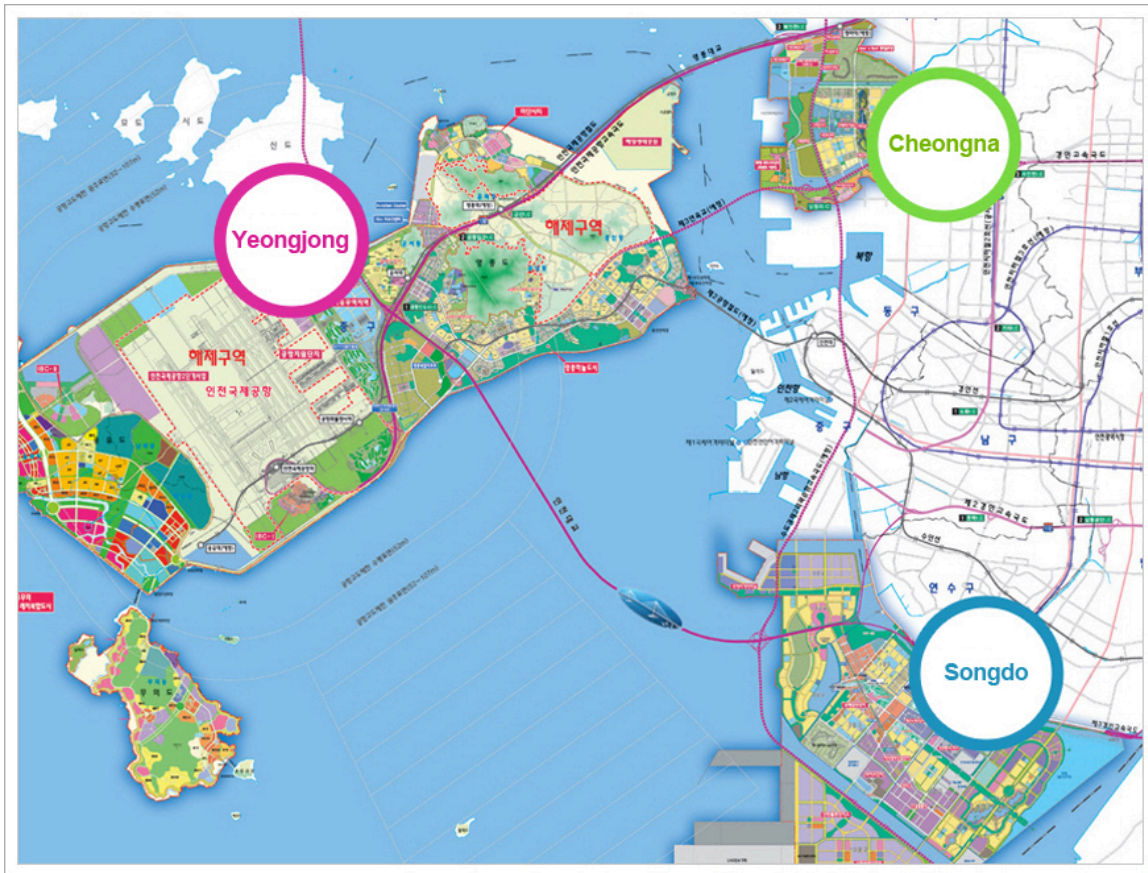


Figure 3: Incheon Free Economic Zone, comprised of three cities
Source: Incheon Free Economic Zone (2014)

While Songdo's focus on international-ness is central to its development, I am also interested in the ways in which Songdo complicates the regulating narrative of global cities. Here, the aim is to complicate global and world cities discourses by examining how key actors in the specific case of Songdo have articulated them. Despite its

outward global marketing, Songdo remains embedded within the specific context of South Korea and Incheon's development politics. In this reframing of the dominant Songdo narrative, the city is understood as an intersection of trajectories – a heterogenous space of possibility where a multiplicity of contexts, histories, politics and power geometries produce emergent relations as well as bounded physical forms (Massey, 2005; Amin & Graham, 1997; Amin & Thrift, 2002). In place of an aspatial understanding of globalization that erases the heterogeneity of places in favour of a single trajectory, global urban space is opened up to possibilities that do not necessarily have to conform to neoliberal urban ideologies (Massey, 2005). This conceptualization of the urban is fundamental to Robinson's (2002) call to imagine different urban futures that are not regulated by the global cities discourse and to empower cities "to imagine their own distinctive forms of city-ness" (Ibid, p. 546).

The following section will outline the development of New Songdo City, emphasizing its complicated history, countering its spatial and temporal abstraction in marketing and development rhetoric. Following this, specific examples of Songdo's attempt to become an international city are discussed. This includes an examination of the ardent focus on eco-city and smart-city development rhetorics, as well as its labelling as an 'aerotropolis'. In each instance, the ways that policies are articulated by national and local actors, and are experienced by residents, is explored. A concluding discussion will draw attention to key challenges and the implications for comparative urban studies.

In this argument, I draw on semi-structured interviews and focus groups with international residents, surveys with Korean residents, and interviews with key municipal and private sector actors (Table 1). For residents, a snowball sampling method was used with the support of social media networks. Policy documents, newspaper articles, project reports and websites were also analyzed. Interviews were

carried out between July 2014 and March 2015 via Skype and in-person while living in Incheon. All interviews were conducting in English or with the help of a translator.

	Number of Interviews	Number of Focus Group Participants	Number of Survey Respondents
International Residents	19	12	-
Korean Residents	6	-	8
Non-Residents	4	-	-
Gale International, KPF	4	-	-
Environmental Organizations	4	-	-
IFEZ and IIAC officials	5	-	-
TOTAL	42	12	8

Table 1: Interviewees, from July 2014 and March 2015

Categories are not mutually exclusive

The Old Story of New Songdo City

New Songdo City rises out of the coastal mudflats of west Incheon like a phoenix – drowned in rhetoric and elaborate marketing, Songdo is the “city of tomorrow”, a “utopia”, a “vision of Korea”. An entire city built at an intense scale and speed, Songdo’s full build out is anticipated for 2020 and will be home to 250,000 residents. However, this focus on its rapid development distracts from the long history that precedes it and the unique context that surrounds it.

Under Japanese rule, plans for a ‘General Foreign Settlement’ in Jemulpo, Incheon were made in 1888 to guarantee free trade and the extraterritoriality to foreigners from China and Japan around the Incheon port (Compact Smart City, 2015). And, though Korea has a relatively homogenous population, international residents have gravitated towards major urban centres, especially Seoul but also Incheon. Additionally, since the Japanese occupation (1910-1945), land reclamation has been seen as an economically and symbolically important act. Increasing land area was, and still is, important to Korea’s developmentalist government for advancing specific industries and land uses (Shin, forthcoming). Especially following the 1997 IMF crisis and the subsequent push towards the internationalization of the Korean economy, the

central government anticipated that the creation of new land through reclamation would help to attract overseas investment. Investment and development would be focused on these new areas, creating a link between reclamation and internationalization. Symbolically, land reclamation represents the modernization and progress of Korea following Japanese occupation and years of conflict. The Korean military governments of the 1970s, therefore, slated two-thirds of Korea's tidal flats for reclamation (Birds Korea, interview, 2015), a process that still continues today.

Korea's developmentalist government has used Songdo to usher in spatially selective liberalization following the 1997 IMF crisis (Shin, forthcoming). Moving from an insular and export-based economy prior to the 1997 crisis, the post-1997 era brought in top-down policies to internationalize and liberalise the economy and transition towards producer services and knowledge sectors (Cho, 1997). Following the election of President Kim in 1993 and imperatives to internationalize the Korean economy, spatially selective liberalization, the growth of the knowledge economy and 'globalization' as a reform policy co-evolved (Jung, 2013). In the case of Songdo, the Presidential candidate Roh Tae-woo who would be elected that term, announced in a 1988 visit to Incheon that a new international city for commerce and information technology would be built on reclaimed land (Shwayri, 2013). Reclamation efforts officially began in 1991, but due to the prioritisation of the Yeongjong-do reclamation nearby where Incheon International Airport would soon be built, as well as other political and economic barriers, reclamation was stalled for nearly ten years. In 2000, Incheon's City Master Plan for 2020 was approved, focusing on the development of Incheon as a global hub for business, finance, and the knowledge economy. In 2001, the development of Songdo was re-launched when a public-private partnership between the American developer Gale International, the Korean steel giant POSCO Engineering & Construction, and Incheon City was made.

Initiated by President Roh and supported heavily by Mayor Ahn Sang-soo in a context of increasing inter-urban competition, Songdo was envisioned as a solution for economic and social challenges at both the national and local levels. Producing an international city “from scratch” (BBC, 2013; Carvalho, 2014) was thought to help draw FDI and highly skilled knowledge workers to a city that would then kick-start Korea’s transition to a more diverse country worthy of global attention. Songdo is thus the material result of co-ordinated national and local visions to create a beacon for international labour, residents and capital.

Hence, though the rapid pace at which Songdo is said to have been built is impressive, this rhetoric obscures the specific context that has shaped its development over the course of several decades. This temporal abstraction works to also abstract Songdo from the political, economic and social dynamics that are foundational to understanding Songdo. The next sections will extend this discussion by first outlining the ways that Songdo has materialized the ‘international city’. As the backbone of the Songdo development, the ‘international city’ will be used as a prism through which we can also understand the various other ways that Songdo has been characterized and built. The eco-city, smart-city (or ubiquitous city, abbreviated as u-city), and the aerotropolis will each be discussed in turn. In each section, the ways that the international city paradigm has impacted the vision, execution, and lived experience of Songdo will be discussed.

The International City

The master plan of Songdo aims to construct it as an international city. With the directive of the Incheon Metropolitan Government, Gale International and POSCO E&C set out to create an urban environment that could both lure and retain international capital and people. Architectural firm Kohn Pederson Fox (KPF) were brought on board to develop the master plan for Songdo IBD and ‘set the tone’ for the wider city (KPF, interview, 2014). In Songdo’s case, a distinctly ‘anti-Korean urbanism’ (Kim,

2013; Shwayri, 2013) was developed to make the city in the image of European and American cities, and in direct opposition to Seoul. Materially, this was manifested in the creation of a 'collage city' (Kim, 2013), with landmark buildings such as the convention centre modelled after the Sydney Opera House, a gridded street block system referencing Manhattan, a tented skyline reminiscent of Shanghai, New York, or other major urban centres, and a canal system that alludes to Venice. Buildings, generally, are built to an 'international standard' (Gale International, interview, 2014) – that is, Western designs that are legible and marketed to transnational elites.

Socially and culturally, Songdo's international-ness is also established through language and amenities. The *lingua franca* of Songdo is often cited as English. Moreover, the relaxation of policies within the IFEZ has also allowed private international education and healthcare institutions to enter Songdo with more lenient regulations. Services and amenities targeted at foreign residents have also been attracted to the city, especially along Canal Walk where high-end shops have opened. Presently, the development of Johns Hopkins Hospital is still underway, though Chadwick International School (American) and the Global Campus containing State University of New York (American), Ghent University (Belgian), George Mason University (American), and others, are open and operating.

Many of these international institutions and facilities, however, are difficult to access due to their extraordinary high fees. At Chadwick, a year of tuition costs \$36,000 USD per child. For many international residents, this is unaffordable without substantial financial help from employers, who often cover the majority of costs in generous welcome packages. Additionally, over 90% of the students at Chadwick are Korean and the majority of international students are the children of Chadwick's own international teachers. Moreover, following the 2008 crisis, changes in the master plan allowed traditional apartment developments called 'danjis' to be built in Songdo, which quickly grew in popularity (Shwayri, 2013). The abandonment of English street

naming has also followed as Korean residents increasingly reject aspects of the international city (ibid.). Finally, most services and amenities, such as restaurants and daycares, are operated in Korean as few working in the service sector are able to speak fluent English. Unskilled labour, generally, is difficult to retain according to one restaurant owner, because most people living in Songdo are well off. Those looking for work cannot afford to live in this luxury city and must commute to their jobs using inadequately developed public transportation. Many English-speaking trailing spouses who are looking for work are not allowed formal employment due to visa restrictions. Consequently, limited social and cultural infrastructure in Songdo is accessible to international residents due to language and financial barriers. Today, though businesses targeting international residents are on the rise, many struggle to remain afloat in this predominantly Korean city.

In addition to these design features and socio-cultural objectives, Songdo also has adopted three other urban 'typologies' that, together, also aim to produce Songdo as an international city. The Eco-city, u-city and the aerotropolis have each been adopted to further Songdo's international status. Each of these is discussed within the context of international city building, paying close attention to the aims of different actors and government bodies, as well as the ways that residents experience them.

Songdo: An Eco-City built 'from scratch'?

The 'green' development of Songdo symbolically promises progress towards a post-industrial society, with an improved standard of living without the negative environmental effects of the industrial era, combined with the seductive appeal and spectacle of new city building (Kim, 2013). The eco-city of Songdo is built using a dual approach, implementing infrastructure and planning policies to limit negative environmental impacts of the city, as well as concentrating international environmental organizations' headquarters within the city; however, when Songdo is examined from an ecological perspective, the ironies of constructing an eco-city on

reclaimed tidal flats – “some of the most naturally productive and wildlife-rich wetland in the world” (Moore, 2014) – are not lost. The active solicitation of international organizations dealing directly with issues of sustainability further underlines this eco-contradiction. Last, attracting ‘cosmopolitan’ international labour to Songdo, and their (presumed) eco-conscious lifestyles, the eco-city is meant to foster sustainable living. This section will conclude by exploring how these individuals experience the eco-city of Songdo as developers, IFEZA and the central Korean government have implemented it.

Opposition to reclamation activities primarily emerges from environmental NGOs as interest in environmental issues arose in the 1990s, though was mostly concerned with pollution and water quality issues at the time (Birds Korea, interview, 2015). Generally, it was not until the late 1980s when non-governmental organizations gained power as part of Korea’s shift towards liberalization, decentralization and increased democratization (Cho, 1997; Shin, forthcoming). During this period, Korea also entered into the Organization for Economic Co-Operation and Development (OECD), and adopted many international conventions focused on environmental issues. In 1999, South Korea conceded to the Ramsar Convention, obligating the state to protect and manage their wetlands wisely and in a sustainable manner. Within Korea, however, the Ramsar Convention is understood as soft law unless supported by national courts. Consequently, when the Songdo development went forward, environmental opposition was deflected as the state argued that the lands were slated for development in the 1970s while the Ramsar Convention came into effect in Korea in 1999. Therefore, it was argued that the convention should not be applied in the case of New Songdo City.¹

¹ It should be noted that parts of Songdo designated as protected sites in 2014. That is, Ramsar designation has identified a small portion of the remaining tidal flat at Songdo as an internationally important wetland, which may be developed as an eco-tourism site in the future.

From its onset, Songdo was positioned to become one of Korea's new eco-cities. Prior to the partnership formed between the American developer Gale International and POSCO E&C, the Incheon Metropolitan government had already installed key infrastructure that would become central to Songdo's status as an eco-city. Pneumatic waste collection systems below street grade were installed to eliminate the need for trash collection trucks, for example. Once Gale International joined in this public-private partnership, citywide LEED (Leadership in Energy & Environmental Design) certification was pursued, believing that building to an accredited 'green standard' would help attract major multi-national corporations, especially those with a corporate social responsibility mandate (Gale International, Interview 2, 2015). Again, the material production of the eco-city, as mandated by the local Incheon government, was directly linked to economic policies to attract foreign investment.

The central Korean government also facilitated the green development of Songdo, especially during the presidency of Lee Myung-bak (2008-2013). As an avid advocate for low carbon green growth, and after the 2008 financial crisis that hit Korea particularly hard, President Lee announced a new paradigm for economic and social development. His vision for low carbon green growth was meant to combat both global warming and the economic crisis. Rather than seeing the climate change as a barrier to development, President Lee saw it as an opportunity for growth and implemented 'green' policies as the core of his national strategy (Ministry of Government Legislation of the Republic of Korea, 2010). Under this paradigm, green technology could stimulate the economy, mitigate climate change, and be a 'blue ocean' for Korea's future development (Kim & Mauborgne, 2004). Songdo, then, was developed as a local solution at the urban scale, for the national economic crisis and global problem of climate change (Shwayri, 2013; Kamal-Chaoui et al., 2011).

President Lee's national low carbon green growth strategy is crucial because it directed investment towards projects that fulfilled his vision. In a context of

increasing inter-urban competition for state support, municipalities that adopt similar policies are more likely to benefit from top-down distribution. Hence, in 2010 the Mayor of Incheon, Song Young-gil, also advocated for green development policies. It is during Song's term that Incheon bid for the Green Climate Fund's secretariat, which was supported by the Ministry of Strategy and Finance. This was vital for efforts to further internationalize Songdo's economy and attract FDI in the form of headquarters of international organizations, especially those under the auspices of the United Nations. Consequently, Songdo now hosts the Green Climate Fund (GCF) – the 'crown jewel' – as well as the Asia and Pacific Training Centre for Information and Communication Technology for Development (APCICT-ESCAP), the United Nations Office for Disaster Risk Reduction (ISDR), the United Nations Commission on International Trade Law (UNCITRAL), and the United Nations Office for Sustainable Development (UNOSD). Notably, many of these organizations are directly or indirectly related to sustainability and ecological issues. It comes with great irony, then, that environmentally focused international organizations should chose to locate their secretariats on a parcel of land that, in its reclamation, has caused severe negative ecological impacts, especially with respects to endangered and rare bird species that are dependent on the mudflats (Birds Korea, interview, 2015).

Alternatively, it could be argued that Songdo is an appropriate location for such environmental organizations given the eco-city features that the city so famously advertises. Songdo's six-point strategy focuses on: 1) open and green space 2) transportation 3) water consumption, storage and re-use 4) carbon emissions and energy use 5) material flows and recycling, and finally 6) sustainable city operations (Gale International, 2015). Interviews with residents, particularly international residents, reveal that these objectives have not necessarily facilitated 'eco-lifestyles'. Thus, it is questionable as to the extent that the eco-city, on an institutional level and as implemented in by national and municipal governments, functions at the individual scale. Though these institutional decisions and green growth policies are explicitly

tied to the goal of attracting foreign capital and labour, they do not necessarily live up to expectations of eco-living, especially for international residents.

For example, residents' experiences with transportation networks in Songdo are telling. Songdo is said to have excellent public transit, emphasizing mass transit over car use, cycling and walking. Songdo has a new subway that is connected to an existing line in Incheon, with six stops located within the city. Twenty-four kilometres of bike lanes lie parallel to the sidewalks and roads, while the Manhattan-style street system was implemented to improve walkability in the core area. Extensive underground parking also aims to get cars off the street, making roads more pedestrian-friendly.

According to residents, though these transit features are well intentioned, some key oversights exist. First, most of the six subway stops are 500 metres to a kilometre away from important areas. While this does not seem like much of a distance, consider that the stop of Incheon National University is more than a kilometre away from the campus, requiring regular shuttle buses to run between the subway station and campus bus bay. Rather than placing the station and the campus in closer proximity, eliminating the need for buses entirely, the two exist at a surprising distance. Given the opportunity to place infrastructure in any number of places because of the 'blank slate' afforded by infill development, this seems highly illogical. Taking the subway to Seoul – a frequent destination of many Songdo residents – takes between one and a half to two hours. Express coach buses instead provide a direct connection to Gangnam in forty-five minutes. Songdo is also better connected to Seoul and its satellite cities by car (Gale International, interview 3, 2015) (Figure 4). This is especially relevant considering that many people travel between Songdo and Seoul on a regular basis, often daily for their work commute. The recent construction of two gas stations within Songdo further facilitates car use. Additionally, though the gridded street system highlighted in KPF's master plan aim to create a vibrant and walkable

core, the actual number of streets was reduced by half and made doubly wide in order to accommodate Korean driving preferences at the request of the local planning department (KPF, interview, 2015). Walkability was thereby decreased while car dependence was further facilitated by this altered design.



Figure 4: Commuting times from Songdo to Seoul by car
Source: Gale International (2015)

Hence, the central government, Incheon Metropolitan City and IFEZA have all been key facilitators of the green development of Songdo as an eco-city in an attempt to attract international businesses and residents, further bolstering its position as an ‘international’ city. However, when discussing the role and effectiveness of the eco-city with international residents, they report a sense of disappointment– residents were promised an eco-lifestyle with state-of-the-art energy-saving technologies and comprehensive transportation networks, but generally do not feel that the city has lived up to expectations. Many struggle to give examples of the ways that the city helps them to live in a more eco-friendly way, instead, citing examples where certain designs or features actually hinder this. Ultimately, Songdo as an eco-city has succeeded to some extent in attracting international residents and businesses. Once here, sadly, many find themselves dissatisfied and even deceived by marketing rhetoric.

A smart, connected community?

“Just 32 kilometres outside of Seoul, a new city is rising – a true, smart, connected community ... Everything is connected, intelligent and green, helping to realize environmental, economic and social sustainability.”
–Cisco’s Smart + Connected Community, 2010 promotional video

Like the eco-city, the ubiquitous technology in Songdo is heavily promoted by Gale, Cisco and others, and is understood as a key aspect of constructing Songdo as ‘global’ (Kim, 2013). Though the global economy spatially disperses economic activities, in part because of rapid advancements in information communication technologies (ICT), these activities still need to come to a rest somewhere and are concentrated in global cities (Sassen, 1991). Moreover, the growth of creative post-industrial economies further makes advanced digital infrastructure important. As producer services and creative industries that rely heavily on ICT infrastructure become increasingly central to economic development plans, the development of digital infrastructure gives cities a competitive advantage when attracting these lucrative businesses.

Cisco joined the Songdo project in 2009 to develop the IT ‘backbone’ of the city through their *Smart + Connected Communities* programme. Implemented to attract large multinational companies working in information technology, biotechnology, nanotechnology, and other knowledge sectors, Songdo’s u-city is a localized strategy to capture global attention, capital and labour. In Songdo, advanced citywide IT networks promise to help businesses operate with ‘extreme efficiency’ (Cisco, 2012b), while the u-city aims to be enhance quality of life, especially for transnational elites (Kim, 2013). The Smart city of Songdo therefore attempts to become both ‘types’ of smart-cities described by Kitchin (2014) – a city with advanced digital infrastructure that facilitates the efficient management of city life, as well as city whose economy is driven by the knowledge economy and ‘smart people’.

South Korea, however, has long been a leader in the technology industry and a developer of smart cities. Though Songdo has been described as the first city to “fully

adapt to the U-city concept” (Licalzi O’Connell, 2005), “the world’s first smart city” (Bilotta, 2014), and “the world’s smartest city” (Lobo, 2014), it is by no means the first smart city in Korea. Other examples predate Songdo by decades and include Seongnam, Hwasung Dongtan, Busan and the recently completed Digital Media City in Seoul. Additionally, the implementation of the nation-wide U-Korea Master Plan in 2006 will ensure that Songdo is not the last. In fact, even within the IFEZ area, Songdo is not even the first u-city, but Cheongna.

At the local level, the research and development of Songdo’s u-city features have been left to U-Life Solutions – a company formed by NSIC, LG, and with a \$47million USD investment by Cisco. Technologies frequently marketed by proponents of Songdo include extensive fibre optic networks, Telepresence, embedded street sensors to monitor traffic, road conditions, weather, fire and safety risks, water level and quality in the canal, RFID tags on cars, LED traffic lights, city-wide Wi-Fi, pneumatic and automatic waster collection and disposal, grey water recycling systems, and finally, automatically monitored energy use in homes.

Due to Songdo’s ‘incomplete’ state and the testing still taking place with many of these technologies, the resident experiences of the u-city are limited. However, a few technologies will be assessed – Telepresence and the automatic monitoring of energy use in homes. Though Telepresence itself is not meant to attract international business per se, it does aim to improve quality of life to make Songdo more attractive for both Koreans and internationals (U-Life Solutions, interview, 2015). Originally developed for business-to-business communication, U-Life is now expanding this technology into the residential and commercial markets. In promotional videos about Songdo, Telepresence features heavily, often showing students at Chadwick International School using the high-quality video conferencing technology to speak to students in their partner school in California (Cisco, 2012a; British Broadcasting Corporation, 2013). In actuality, a teacher at Chadwick confirms that the telepresence

system is only sometimes used for meetings. In apartments, only 700 units are installed though more than 1400 units have been purchased. Of these residential users, the vast majority of users are Koreans, many of which are mothers with children who use the telepresence service on a subscription basis to access hobby classes and private tutoring for their children (U-Life, interview, 2015).

The second technology is the 'wall pad' that automatically monitors in-home energy usage in each apartment unit and which are widely used across the country. When examining the specific functions of the wall pads, especially among international residents in Songdo, some interesting patterns emerge. First, residents widely accept that the wall pads are good – the pads control central heating, cooling and lights, for example, and give summaries of energy usage on weekly or monthly intervals. However, because virtually all of the units are in Korean without the ability to switch to English (or any other language), international residents do not use them. Because the pads are the central control for many things in the apartment, changes could potentially shut off the gas, heating, or other essential utilities. Many people are thus afraid to tamper with them because of possible unintended consequences and the difficulty of resolving situations given high language barriers. Other residents have also reported that they have unknowingly pressed the emergency button and were surprised to find the building security at their door. Another resident has a particularly frustrating situation where the wall pad controls the bedroom lights, which also triggers an alarm. The light and alarm spontaneously go off in the middle of the night and she is unable to turn off this setting. As the smart technologies inside apartments fail to function as intended, the “code/spaces” (Kitchin & Dodge, 2005) that they produce begin to transform the smart-home from a space of convenience and ease to a space of unpredictability and frustration.

While international residents could learn more Korean in order to avoid these everyday problems, many of them do struggle with classes for years. Moreover, many

are especially frustrated by this smart technology because they were told, implicitly and explicitly, that these services would be in English, being an international city. As one international resident says, “the smart city is like ‘bling’ because it looks great, but you don’t really use it”. Summing up this frustration, one respondent remarks, “I hate the part with the smart city. You don’t get to use it because you don’t speak Korean”. This is doubly concerning when considering that many smart technologies mediate residents’ use of eco-city features, especially the wall pads, which centrally control energy settings.

Though the u-city intends to produce attractive environments for international business and subsequently, international residents, the actual uptake of smart city technology, especially by international residents, in Songdo is debatable. Hence, though technology may be integrated and implemented at the urban scale as a means to create more orderly space (Massey, 2005), these examples illustrate the ways that technocratic spaces are ruptured by cultural factors, most notably language barriers.

The aerotropolis

The final and perhaps least developed urban typology is that of the aerotropolis: a term coined by John Kasarda (2000). The aerotropolis is defined as an airport-integrated region that leverages air commerce to become competitive in the global market. Represented as a ‘gateway to the world’ (ibid.), the aerotropolis aims to intervene in supply chains and network capital to achieve economic success (Kasarda & Lindsay, 2011; Kasarda, 2008). Under this rubric, the aerotropolis adopts a hub-and-spoke pattern that is dependent on connectivity rather than spatial proximity *per se*, and is presented as a technological utopia that captures footloose capital and transnational elites (Charles et al., 2007). The aerotropolis model is premised on aggressive growth predictions that assume the air travel industry will continue to boom (Freestone, 2009) despite studies that show increasing volatility and reduced predictability year-over-year (Burghouwt, 2007). Additionally, aerotropolis

proponents who argue that technological innovation in city building and the aviation industry will triumph dismiss environmental concerns (Kasarda & Lindsay, 2011; Charles et al. 2007).

In Incheon, the Incheon International Airport (ICN), South Korea's only hub airport, has been constructed on a reclaimed island called Yeongjong. ICN is located just 15 minutes away from Songdo via car and private toll bridge. In turn, ICN is within 3 and a half hours of a third of the world's population (Songdo, 2014), allowing IFEZA to proclaim that IFEZ is "the closest city to the world" (IFEZ billboard in Songdo, 2015) (Figure 4). Songdo's international-ness is therefore supported by the airport, which is both a symbol and facilitator of globalization.



Figure 5: Travel time by plane from Incheon International Airport

Source: Gale International (2015)

Representatives of Gale International, as well as Incheon International Airport Corporation, explain that the term 'aerotropolis' was applied after development began. Presently, it is unclear as to how many people living in Songdo actually use the airport on a regular basis and are a part of the 'kinetic elite' or global business class (Adey, Budd, & Hubbard, 2007; Cresswell, 2006) – those who use air travel for regular commuting. Few international and Korean interviewees mention using the airport in this way, making the exact effect that the airport's connectivity unclear. As one international resident working for a UN organization explains, being near to ICN is an

advantage, having used the airport around seventeen times in the last six months for business trips. From the centre of town, a private airport shuttle run by Korean Air transports passengers between the Sheraton Hotel in Songdo to the main bus bay of the airport in just 25 minutes, and for ₩7000 KRW (approximately £4, and more than double local bus fares). However, he also notes that though Songdo is geographically close to ICN, psychologically, Seoul is just as far (actual travel time on the express KTX train is 43 minutes).

Songdo's aerotropolis discourse co-opts the normative and dominant rhetoric of neoliberal urbanization. While, rhetorically, the aerotropolis has achieved vogue status in recent years, there is little evidence, especially at the Songdo site, to indicate that the specific presence of an international hub airport has actually generated urban forms. In fact, Songdo's *a priori* existence would suggest otherwise. While ICN's close proximity may symbolically aid in Songdo's international status, its real effects are unknown.

Discussion

Measuring Songdo's 'success' as an international city is a difficult task. Its internationalization can be measured, perhaps, by tallying the number of international organizations located there, the quantity of FDI received, the number of foreign contracts or MOUs (memorandum of understanding), and the number of foreign residents. What is more difficult to measure is how many individuals and companies came to Songdo because of its 'international-ness', and moreover, how many stay or leave once they've experienced this international city. Anecdotally, residents report a high rate of international resident turnover and that up to a third of international hires leave their contracts early due to difficulties adjusting to 'Korean' city life. Others remark that the international-ness is "a joke", and that if the government had just planned to make a Korean city, "it would have all been fine". Some note that the excessively hyped up marketing is unnecessary because the city does have great

features and is attractive to live in for a number of reasons – there is no need to falsely advertise that the lingua franca is English, or that everyone lives high-tech eco-friendly lifestyles. International residents who are promised these things are often left disappointed and frustrated. Additionally, top-down application of U-city policies has also been criticized because they fail to generate effective collaboration between stakeholders, privileges private interests, and largely ignores society's needs (Shwayri, 2013). This has resulted in companies like Cisco and U-Life attempting to create markets for their products rather than implementing feedback mechanism that would better inform u-city development. Last, no formal mechanism for public consultation currently takes place between IFEZA and international residents for the general development of the city.

This research is disproportionately skewed towards the experiences of international residents. In part, this is a heuristic choice given the heavy emphasis on Songdo as an international city from its initial conception to the present day. However, it should also be recognized that international residents in Songdo hold a very privileged position, even among other foreigners living in Korea. As a country where only about 1% of the total national population, including illegal migrant workers, consists of foreign nationals (Kim, 2008), the concentration of foreigners in Songdo is exceptional. 2% of Songdo's population is foreign, and Songdo itself contains about half of all foreigners living in Incheon, many of which live within the IFEZ area (IFEZA, 2014). The vast majority of these foreigners are employed by companies in the area that offer very generous welcome packages that include high-end housing and tuition fee breaks for children at international schools. Many of these individuals are highly educated skilled workers, who elsewhere, would land firmly in the middle or upper classes of society. For Koreans, living in Songdo affords a high socio-economic status. Given that the NSIC's 5,364 apartment units sold between 2005 and 2009 were on average fifteen times the annual household income for urban households in 2009 (Shin, forthcoming), Koreans who own homes in Songdo are among the wealthiest. By

focusing on Songdo and its international community, those at the opposite end of the socio-economic spectrum are overshadowed, most notably the fishermen who were initially displaced by reclamation activities. Further research on the socio-economic disparities within and in relation to Songdo would add a deeper understanding of how this particular example of urban-scaled development has impacted patterns of socio-spatial inequality.

In terms of sustainable development, it should be noted that the aviation industry is one of the fastest growing sources of CO₂ though it only accounted for 3% of anthropogenic emissions in 2012 (Bows-Larkin & Anderson, 2013). Given these deleterious environmental effects, the aerotropolis actually exists in opposition to the aims of the eco-city. However, it could also be argued that the eco-city's foundation upon green growth does not substantially reduce global emissions of green house gases, but rather, displaces them elsewhere. As Songdo focuses on knowledge sectors and 'clean' industries, production is simply displaced to other places where labour laws and environmental regulations are more relaxed.

Finally, Gale International has, to some critics, failed to attract sufficient amounts of international investment despite global marketing efforts (Shwayri, 2013). Due to these difficulties, IFEZA is now focusing its attention on attracting large Korean companies as well. By fostering large domestic companies, they hope to generate an agglomeration effect to augment its international in appeal. Moreover, given steady shifts in the world economy towards Asia, efforts to attract companies are now increasingly targeted at China and even more recently the Middle East, rather than North America and Europe. The 'international flavour' of Songdo may see significant changes in the near future as different investors are being targeted.

Songdo is an example of the internationalization of the Korean state at the urban scale. However, over the course of its development, planning and policy changes have

resulted in what Shwayri (2013) calls the 'Koreanization' of Songdo. While it is true that the national and local governments have constructed Songdo to be international, they have always done so within the specific context of South Korean developmentalism alongside local and regional urban politics. It can be argued, then, that Songdo is not undergoing Koreanization, but is already, and always has been, Korean. By assuming its international development as given, world and global city discourses overlook the variegated, multi-scalar processes that work to make Songdo international. The international city, then, is always in process, where 'international' and 'Korean' forces at multiple scales are continually negotiated.

Songdo illustrates the ways that international-ness as an urban 'theme' is highly questionable, difficult to achieve, and difficult to assess. By alluding to everywhere – New York, Sydney, Venice – the city can sometimes feel like nowhere at all, or as one interviewee puts it, "It feels like you're on the edge of the world". In an effort to be like everywhere, Songdo often instead feels desolate – a kind of global non-place (Augé, 1995). The master plans developed by Incheon City, IFEZ and KPF attempt to materialize grand visions for a technocratic utopia, but resident feedback disrupt these grand visions. The complicated and sometimes contradictory ways that these visions are articulated at different scales highlight the process-oriented production of Songdo. As the city comes ever-nearer to its 2020 completion date, it will be interesting to see what will emerge next – 2020 is not the 'end', then, but another node in a web of trajectories that continue to criss-cross and produce meaningful, liveable places.

Works Cited

- Adey, P., Budd, L., & Hubbard, P. (2007). Flying Lessons: exploring the social and cultural geographies of global air travel. *Progress in Human Geography*, 31(6), 773-791.
- Amin, A., & Graham, S. (1997). The ordinary city. *Transactions of the Institute of British Geographers* 22, 411-429.
- Amin & Thrift, N. (2002). *Cities: reimagining the urban*. Polity Press.
- Augé, M. (1995). *Non-Places: introduction to an anthropology of supermodernity*. (J. Howe, Trans.) London: Verso.
- Bilotta, M. T. (2014). Songdo, South Korea: the world's first smart city - in pictures. *The Guardian*. Retrieved from <http://www.theguardian.com/cities/2014/dec/22/songdo-south-korea-world-first-smart-city-in-pictures>
- Bows-Larkin, A. & Anderson, K. (2013). Carbon Budgets for Aviation or Gamble with our Future?. In L. Budd, S. Griggs & D. Howarth (Eds.), *Sustainable Aviation Futures* (pp. 65-84). Bingley, UK: Emerald Group Publishing.
- British Broadcasting Corporation. (2013). *Tomorrow's Cities: is South Korea's Songdo a model?* [video] Retrieved from <http://www.bbc.co.uk/news/technology-23897513>.
- Bunnell, T., & Maringanti, A. (2010). Practising urban and regional research beyond metrocentricity. *International Journal of Urban and Regional Research*, 34(2), 415-420.
- Burghouwt, G. (2007). *Airline network development in Europe and its implications for airport planning*. Aldershot: Ashgate.
- Carvalho, L. (2014). Smart cities from scratch? A socio-technical perspective. *Cambridge Journal of Regions, Economy and Society*, 8(1), 43-60.
- Charles, M. B., Barnes, P., Ryan, N., & Clayton, J. (2007). Airport futures: Towards a critique of the aerotropolis model. *Futures*, 39, 1009-1028.
- Cho, M.-R. (1997). Flexibilization through metropolis: the case of postfordist Seoul, Korea. *International Journal of Urban and Regional Research*, 21(2), 180-201.

- Compact Smart City (2015). Incheon Urban Planning Centre [exhibit display].
Incheon Development & Tourism Corporation.
- Cisco. (2010). *Songdo City: Smart + Connected Community*. [promotional video]
Retrieved from: <https://www.youtube.com/watch?v=f1x9qU-Sav8>.
- (2012a). Cities of the Future: Songdo, South Korea, Episode 1: a new approach.
[promotional video] Retrieved from https://www.youtube.com/watch?v=fHO_zkHPTaI.
- (2012b). Cities of the Future: Songdo, South Korea, episode 3: working in Songdo.
[promotional video] Retrieved from <https://www.youtube.com/watch?v=-tWXZGev5M>
- Cresswell, T. (2006). *On the Move: mobility in the modern western world*. New York & London: Routledge.
- Dick, H. W., & Rimmer, P. J. (1998). Beyond the third world city: the new urban geography of South-east Asia. *Urban Studies*, 35(12), 2303-2321.
- Dougllass, M. (2000). Mega-urban regions and world city formation: globalisation, the economic crisis and urban policy issues in Pacific Asia. *Urban Studies*, 37(12), 2315-2335.
- Edensor, T., & Jayne, M. (Eds.). (2012). *Urban theory beyond the West: a world of cities*. London & New York: Routledge.
- Freestone, R. (2009). Planning, Sustainability and Airport-Led Urban Development. *International Planning Studies*, 14 (2), 161-176.
- Gale International. (2015). *Sustainable design at Songdo IBD*. Retrieved from <http://www.songdo.com/songdo-international-business-district/why-songdo/sustainable-city.aspx> ("Sustainability White Paper")
- Harvey, D. (1989). From managerialism to entrepreneurialism: the transformation in urban governance in late capitalism. *Geografiska Annaler. Series B. Human Geography*, 3-17.
- Incheon Free Economic Zone Authority. (2011). *IFEZ Project 2011*. Songdo, South Korea. Incheon Free Economic Zone Authority.

- (2014). *IFEZ Administrative Statistics (as of end of December 2014* [in Korean]. Songdo, South Korea. Incheon Free Economic Zone Authority.
- Jung, N. (2013). Relational Governance and the Formation of a New Economic Space: The Case of Teheran Valley, Seoul, Korea. *International Journal of Urban and Regional Research*, 37(4), 1233-1253.
- Kamal-Chaoui, L., et al. (2011), The Implementation of the Korean Green Growth Strategy in Urban Areas, *OECD Regional Development Working Papers 2011/02*, OECD Publishing.
- Kasarda, J. D. (2000). Aerotropolis: airport-driven urban development. In T. U. Institute, & R. Fishman (Ed.), *ULI on the Future: Cities in the 21st Century* (pp. 32-41). Washington: Urban Land Institute.
- (2008). The Evolution of Airport Cities and the Aerotropolis. In L. Siebert, & J. D. Kasarda, *Airport cities : the evolution*. London: Insight Media.
- & Lindsay, G. (2011). *Aerotropolis: the way we'll live next*. Toronto: Viking Canada.
- Kim, C. (2010). Place promotion and symbolic characterization of New Songdo City, South Korea. *Cities* 27, 13-19.
- Kim, J. I. (2013). Making cities global: the new city development of Songdo, Yujiapu and Lingang. *Planning Perspectives*, 29(3), 329-356.
- Kim, W. C., & Mauborgne, R. (2004). *Blue ocean strategy*. Harvard Business Review, October, 71-80.
- Kim, Y.-H. (2008). Keeping the Gateway Shut: regulating Global City-ness in Seoul. In M. Price, & L. Benton-Short (Eds.), *Migrants to the Metropolis: the rise of immigrant gateway cities* (pp. 322-344). Syracuse: Syracuse University Press.
- Kitchin, R. (2014). The real-time city? Big data and smart urbanism. *GeoJournal*, 79(1), 1-14.
- & Dodge, M. (2005). Code and the transduction of space. *Annals of the Association of American geographers*, 95(1), 162-180.

- Kohn Pederson Fox. (2002). *Urban Design Principles*. Songdo IBD. Retrieved from <http://www.songdo.com/songdo-international-business-district/the-city/master-plan/kpf-urban-design-principles.aspx>
- Licalzi O'Connell, P. (2005). Korea's High-Tech Utopia, Where Everything Is Observed. *The New York Times*. Retrieved from <http://www.nytimes.com/2005/10/05/technology/techspecial/koreas-hightech-utopia-where-everything-is-observed.html>.
- Lobo, R. (2014). Could Songdo be the world's smartest city?. *World Finance*. Retrieved from <http://www.worldfinance.com/inward-investment/could-songdo-be-the-worlds-smartest-city>.
- Massey, D. (2005). *For Space*. London: Sage.
- Ministry of Government Legislation of the Republic of Korea. (2010). *Laws on green growth and economic investment in Korea*. Sejong, South Korea.
- Moore, N. (2014). Is Song Do New City an Example of Sustainable Development and "Good Globalization"? *Birds Korea*. Retrieved from <http://www.birdskorea.org/Habitats/Wetlands/Songdo/BK-HA-Songdo-Is-Song-Do-an-Example-of-Sustainable-Development.shtml>
- Olds, K. (1995) Globalization and the production of new urban spaces: Pacific Rim megaprojects in the late 20th century. *Environment and Planning A*, 27, 1713-1743.
- Robinson, J. (2002). Global and world cities: a view from off the map. *International journal of urban and regional research*, 26(3), 531-554.
- (2005). Urban geography: world cities, or a world of cities. *Progress in Human Geography*, 29(6), 757-765.
- (2011). Cities in a World of Cities: the comparative gesture. *International Journal of Urban and Regional Research*, 35 (1), 1-23.
- Sassen, S. (1991). *The global city* (p. 245). Princeton, NJ: Princeton University Press.
- Shin, H. B. (forthcoming 2016). Envisioned by the State: the Paradox of Private Urbanism and Making of Songdo City, South Korea. In A. Datta & A. Shaban

(Eds.) *Mega-Urbanization in the Global South: Fast Cities and New Urban Utopias of the Postcolonial State*. Routledge.

Shwayri, S. T. (2013). A model Korean ubiquitous eco-city? The politics of making Songdo. *Journal of Urban Technology*, 20(1), 39-55.

Songdo (2014). *Songdo IBD*. Retrieved from <http://www.songdo.com/>

Taylor, P. (2004). *World city network: a global urban analysis*.