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Songdo: Cracking the Code of Urbanism

Abstract

In the modern world, climate change and rapid urbanization represent prominent global challenges. Coupled together, these issues have fueled a new phenomenon in urban planning: the master planning of sustainable prototype cities with the intention of mass exportation and prompt replication. Such model cities must target all aspects of sustainable development in order to lure investment. These aspects include: the environment, the community, and the economy. In the last two decades, South Korea has partnered with Gale International, an American real estate company, to build a sustainable prototype city called Songdo. Songdo – currently under construction in South Korea – embodies the ideals of an eco city, a ubiquitous city, and a global business hub. In this paper I examine the master plan of Songdo, highlight its strengths and weaknesses, and question the feasibility of the prototype trend. I conclude that while Songdo boasts exemplary features, its success as an exportable blueprint is limited by its neglect of context specificity and its lack of organic development.

Introduction

Although Songdo has made inspiring strides, it is not an ideal model for export. In this paper I begin by reviewing literature on sustainable urbanism, eco cities, ubiquitous cities, and free economic zones; my paper will extend these topics by applying them to Songdo. Next, I

summarize the history of Songdo, from the inception of the plan to the current phase of development. Subsequently, I dissect the master plan and examine how Songdo seeks to become an eco city, a ubiquitous city, and a global business hub**.** Building on this, I discuss the challenges and opportunities associated with these three identities and indicate how the model fails to be replicable, affordable, and organic. This leads me to conclude that Songdo is not an exportable model.

Literature review

The planning and development of Songdo has incorporated the concepts of sustainable urbanism, eco cities, ubiquitous cities, and free economic zones. The scope of literature regarding these concepts is broad. Farr (2006) advances the idea of sustainable urbanism in his book "Sustainable Urbanism: Design with Nature." He defines sustainable urbanism as a comprehensive reform of the built environment that emphasizes walkable places and high-performance buildings. Farr makes a compelling case for sustainable urbanism, provides a framework for implementing the movement, lists targets for sustainable urban projects, and documents lessons learned from various case studies. Sassen (2009) also stresses the importance of utilizing urban environments as solutions to global environmental challenges. She argues that cities could be focused on sustainability rather than perpetuating exorbitant consumption-waste patterns. Register (2006) coins the eco city concept in his book "Ecocities: Rebuilding Cities in Balance with Nature". Shin (2009) explores the challenges and opportunities of ubiquitous computing in Songdo. Park (2005) examines the emergence of free economic zones and private sector corporations in South Korea.

There has been a lot published on Songdo in recent years, particularly newspaper articles, promotional material, and progress reports glorifying the project. However, literature analyzing

its success as a model is limited. This is presumably due to the fact that the city has yet to be completed. Various journalists have raised questions about the model, yet there is a lack of scholarly articles and books critiquing the city. This paper will try to address this gap in the literature.

History of Songdo

Although the Songdo project was initiated several times, it did not properly take off until 1999, with the collaboration of Gale International and POSCO, Korea's biggest steel company. Gale International and POSCO were given $35 billion dollars from South Korea to build a city comparable in size to Boston on the tidal flats of the Yellow Sea (Keeton, 2011). Songdo was to be a "sustainably designed, high-tech, international business zone" (Whitman et al., 2008, p. 3). South Korea hoped that Songdo would position the nation "at the forefront of new city development", especially if it became "a model for export" (Shwayri, 2013, p. 39). Songdo was an attempt to "[crack] the code of urbanism" (Lindsay, 2010). Gale and his team of urban professionals hope to build the ideal sustainable prototype, commodify it, and sell it to countries in need at a price of 40 billion. The plan is to produce 20 replicas of Songdo across China and India (Arlidge, 2010).

Master plan of Songdo

Eco city

Songdo is designed as an eco city to minimize consumption and waste production and to enhance environmental quality. Its green infrastructure addresses six principles of sustainability: "open space, transportation, water, energy use, recycling and general operations" (Klaw, 2011). The master plan provides open space by designating 40 per cent of its landscape to green space

and having Central Park as its centerpiece. The city emphasizes sustainable transportation by providing pedestrian-friendly walkways, 25 kilometers of bicycle lanes, public transit options (e.g. subway, bus, water taxi), and special parking spaces for electric cars (Klaw, 2011). To decrease water use, it recycles storm water and wastewater for "irrigation and cooling" (Alridge, 2010). Its buildings are constructed with low-emissivity glass and steel and covered in solar panels and green roofs to save energy. An underground pipe system sucks waste out of buildings and carries it towards a central collecting plant to be "recycled or incinerated" (Alridge, 2010). Songdo also manages to collect data on citizens in order to expose patterns of unsustainable behavior and offer them advice on how to act more sustainably. If these processes function properly, Gale predicts that Songdo will decrease enough water and energy consumption to emit a mere "one third of the expected greenhouse gases of a typical metropolis" (Arlidge, 2010).

Ubiquitous city

To enhance the quality of life for its inhabitants, Songdo is designed as a ubiquitous city, a high-tech environment where "public and private services" are available at "any time to anyone" (Shwayri, 2013, p. 43). Cisco, an American technology company, is responsible for Songdo's technological infrastructure and has implemented a 'Smart+Connected+Communities' program that connects and provides constant access to "real estate, utilities, transportation, learning, health and government" information systems (Keeton, 2011, p. 309). The program includes a TelePresence system, smart cards, floor sensors, phone applications, and video surveillance. The Telepresence system allows citizens to accomplish certain tasks using advanced video communication (e.g. fitness classes, doctors' appointments, or tutoring sessions) (Arlidge, 2010). The smart card can be used in many ways, from entering museums, subways, and movie theaters to renting a public bicycle. Floor sensors can detect the impact of a fall and send out signals for

medical help. Through phone applications, citizens are able to control the temperature and lighting in their homes when they are away (Keeton, 2011). Video surveillance observes and records everything from traffic to crime (Arbes and Bethea, 2014). Together, these gadgets try to improve the "efficiency, optimization, predictability, convenience, and security" of daily activities (Poole, 2014).

Global business hub

Songdo's ultimate goal is to advance the economic standing of the region by attracting as much foreign and local investment as possible. Its location, structure, and incentives for foreign investment set it out to become a global business hub. Not only is it strategically located between China and Japan; it is also a fifteen-minute drive away from Incheon International Airport (Shwayri, 2013). This makes Songdo an "aerotropolis", an urban plan built around an airport, where inhabitants are only a four-hour flight from "one third of the world's population" (Keeton, 2011, p. 316). The master plan clearly stresses business; it contains "a high-tech industrial cluster, a knowledge and information complex, a new port logistics complex, and an international business district" (Shwayri, 2013, p. 46). The international business district is designed to be the densest area in the city because it assumes it will be populated by a constant flux of global travelers (Keeton, 2011). Songdo has employed various strategies to attract foreigners, such as the imitation of "landmark cities" to make expatriate residents feel more at home. These Western elements include the "boulevards of Paris", New York's Central Park, the "pocket parks" of Savannah and the canals of Venice (Shwayri, 2013, p. 47). The city has invested in international schools and hospitals and established English as its bridge language in hopes it will attract foreign corporations to establish their headquarters there (Keeton, 2011).

Strengths, weaknesses, and exportability

Now that I have examined Songdo's master plan I will discuss the advantages and shortcomings of its environmental, social, and economic structures and assess whether they will be suitable for replication.

Sustainable commitments and ecological concerns

Many have labeled Songdo as "a showcase project for green development" (Whitman et al., 2008). The city participated in the LEED (Leadership in Energy and Environmental Design) for Neighborhood Development pilot program to certify that it would be entirely sustainably developed. The Songdo team also carried out carbon footprint and greenhouse gas reduction analysis to learn about the impacts of the project (Whitman et al., 2008, p. 9). In 2009, it was granted the first Sustainable Cities Award by the Urban Land Institute (Keeton, 2011). These staunch commitments to sustainable development confirm that Songdo is not merely paying lip service. Yet, there are several ecological concerns that should be taken into account. To begin, the concept of the eco city did not emerge in Songdo until seven years after the project was initiated. Thus, it is unclear whether the model's "green" aspirations are rooted in a genuine desire to protect the environment or a financially driven strategy to attract investors (Kim, 2010). In an era where incorporating sustainability into economic endeavors is deemed desirable, and somewhat compulsory, is Songdo simply "eco-friendly" to generate profit? In order to thwart this doubt and maintain its sustainable reputation, Songdo should assess its carbon footprint annually and continue to improve its environmentally conscious framework. Furthermore, there is a possibility that the inhabitants of the plan will not be as ecologically sensitive as the plan itself. Citizens may be living in an eco city, but this will not necessarily prevent them from eating copious amounts of meat, driving high-emission vehicles, using plastic and paper products,

and taking multiple plane trips a year. Even if the urban society does uphold the lofty values of the city, Songdo may become a "premium ecological enclave" in a larger setting that suffers from "environmental degradation" and pollution (Caprotti, 2014, p. 11-12). On the topic of its ability to be copied elsewhere, one must consider context-specific notions such as the cultural and physical environment. How will the model avoid becoming a "premium urban enclave" in countries like China and India, plagued by excessive pollution and the rise of slums? How will green roofs and the recycling of storm water be able to function in the dry climates of Africa?

Technological innovations and societal implications

Songdo has introduced groundbreaking technologies and unleashed enormous possibilities for social engineering. Not only does the city seek to be competitive in the field of technology, it seeks to be competitive by using technology to make itself more "attractive, efficient and livable" (Carvalho, 2012, p. 199). Though Songdo's ubiquitous infrastructure allows it to be a test bed for avant-garde technologies, there are several drastic implications that accompany the omnipresence of technology and the overreliance on it. For one, there is risk of technological failure (e.g. viruses, hacking) (Klaw, 2011). If all essential services, especially medical or career-related ones, depend on one computer program, citizens may be denied of these services if the system requires a reboot or has become outdated; this would be a precarious scenario. Another alarming issue is the lack of privacy given the prominent surveillance of activities and the mass accumulation of data on citizens. Though "privacy expectations are lower" in South Korea, exporting these ubiquitous concepts to less "collectivistic" societies in the West will be challenging as those cultures are less likely to sacrifice their privacy and autonomy for the sake of security (Carvalho, 2012, p. 208). Paradoxically, this type of ubiquitous model has the potential to offer the very opposite of security. Directing all this data "in the hands of

government or… private corporations" is frighteningly reminiscent of the "big brother effect" in George Orwell's *1984*, the abuse of power through strict supervision (Klaw, 2011). If this type of control was offered to a corrupt body (i.e. if the city-in-a-box was sold to a dictatorship), it could lead to oppressive governance and an atmosphere of fear and constraint. Lastly, there may be a lack of demand for the ubiquitous program. It may be difficult to integrate these new technologies into society because they were designed with "limited involvement of the citizens" and may not accurately reflect their true desires and tendencies (Carvalho, 2012, p. 209). Not to mention, other cultures may not be as keen to embrace technology in all aspects of life.

Foreign incentives and local neglect

Songdo's attempts to lure foreign investment are necessary considering the developers invested $40 billion into the project and need to generate profit to avoid bankruptcy. The city also follows the International Monetary Fund's (IMF) direct orders to "seek foreign investment" after it bailed the country out of the "Asian financial crisis" in 1997 (Kasarda & Lindsay, 2011, p.354). So far, Songdo has failed to attract foreign investors despite fervent efforts to promote itself globally. There has been "no demand or competition to invest in Songdo" and it has become gradually more Korean (Shwayri, 2013, p. 50). This may suggest that template cities are "less appealing to the corporate market" because they lack the "creative anarchy… of a big bad urban centre" (Williamson, 2013). However, the city is not fully completed and may disprove these trends in the future. In any case, Songdo must evolve before multinational corporations will feel safe to establish their headquarters there. If its business model continues to fail despite its strategic location and status as an "aerotropolis", how will the model succeed in other regions that do not possess these two geographical advantages? I question whether an airport will have to be constructed for each clone of Songdo. This would not only be an expensive enterprise but an

unsustainable one, considering that aviation has a detrimental impact on the environment. Furthermore, Songdo has neglected its local population by providing too many incentives to foreigners and designing a "non-Korean city" for "non-Koreans" (Shwayri, 2013, p. 48). This undermines Songdo as a solution for rapid urbanization in South Korea. The model will not be able to accommodate the rural-urban migrations of citizens in other countries if it is mostly oriented towards foreigners.

Songdo as a prototype

Although I have indicated weaknesses in the Songdo model, it has not stopped Songdo clones from popping up in China (Keeton, 2011). Gale and Cisco have already managed to sell their sustainable prototype to China, which has started construction in the regions of Chongqing and Dalian. In China, India, Africa, and South America, rapid urbanization is fueling the demand for new urban developments. Scholars now claim that China and India alone need a total of 800 new cities (Arlidge, 2011). These new urban developments cannot continue to produce the same destructive carbon footprints of conventional industrial cities; they must be green. Green cities are the fastest way to reduce urban carbon footprints. However, should these cities be based on a sustainable prototype? Is it even feasible to export and replicate a template city? There are several flaws embedded in this trend.

To begin, Songdo's affordability as a model is questionable. At $40 billion, it is "the most expensive private real estate development in the world" and will be too expensive to replicate in developing regions (Keeton, 2011, p. 313). In addition, as a city built from scratch, it has been deprived of the "diversity and vitality that organic development creates" (Williamson, 2013). This inorganic approach has accounted for a lack of identity and also a rigidity that impedes on its ability to evolve. The "templatizing [of] urban developments" is eerily familiar to Corbusier's

attempts to design social landscapes, which were largely unsuccessful (Lindsay, 2010). Brasilia, for example, was an "instant disaster" because it did not anticipate social patterns that would arise and many other new city projects have turned into ghost cities because they have failed to draw inhabitants (Lindsay, 2010). The trend bears resemblance to colonial cities which were known for neglecting "local identity" and "imposing an inadequately contextualised vision of development that [focused] on economic and environmental indicators" instead of "cultural authenticity" (Hartley, 2015). Overall, the trend is unfeasible because it is exactly that – a trend. An instant city represents only a quick fix. It is a risky move to replicate a city as fast as possible, especially if has not been finished and it has yet to prove itself. At this point in time, Songdo has not cracked the code of urbanism but remains a blank slate. Only time will tell whether it can truly thrive as a city-in-a-box.

Conclusion

I have argued that despite Songdo's novelty and creativity, it is not an ideal model for export. I have examined Songdo, from its inception to its development as an eco city, a ubiquitous city, and a global business hub**.** I have then discussed the challenges and opportunities associated with these three identities and argued how the model neglects context-specificity. At the moment, the master-planned template city is not pragmatic because it is expensive, inorganic, and rigid, lacks cultural authenticity, and provides only a quick fix.

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