A New City Prototype?: Songdo International City as an Airport City

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Abstract

The increasing volume of air travel and freight has led scholars to ponder the possibility of an aerotropolis, or airport city. Proponents of the aerotropolis argue that future cities will develop around airports, just as contemporary cities are organized around other means of transport such as train stations. However, critics do not agree with such a futuristic vision. Despite ongoing debates regarding the aerotropolis model, the increasing importance of airport-related infrastructures is illustrated by the recent enlargements of airports.

This article considers the case of South Korea's Songdo International City in order to discuss the architectural aesthetics of the airport city generally. The author first traces accounts of both real and imagined airport cities in architectural and planning literature. She then proceeds to analyze the case study site as an example of the role of architecture in shaping public space. While most discussions of the airport city idea seem to suggest the existence of boundless opportunities, the task of balancing the development needs for urban infrastructure and for housing has eluded the current governance system based on the private-public partnership. Further discussions are needed on how to balance mobile and place-based activities so as to make airport cities livable.

Keywords: airport; free trade; governance; city planning; architecture

1. Introduction

Cities have changed continually over the course of history. Many cities have arisen as centers of political and economic activity, often as a result of either geopolitical processes or changing climatic conditions. Various factors, including advances in technology and military prowess, have contributed to the vicissitudes of cities around the world. More recently, the efforts of nation-states to promote their cities as an international hub of some kind have produced competition among countries. Even after so-called globalization processes have taken hold in most places around the world, uneven development and regional specificities have prevented the emergence of homogeneous cities. Some cities in the developing world have witnessed spectacular growth while others have retreated in the face of political conflicts or the economic downturn.

In East Asia, certain cities in developing countries have emerged as new magnets, drawing various resources and people into their boundaries. Cities such as Shenzhen, Shanghai, Hong Kong, and Seoul are metropolises that have undergone growth in a relatively short time. While catching up with cities in other developed countries, these cities have invested heavily in transportation and communication infrastructures, including roads, and digital technologies. As certain East Asian cities have become better equipped with these resources, competition to become a regional hub has become fiercer still. While some cities, like Shenzhen, continue to rely on manufacturing and other types of heavy industry, others, like Tokyo, characterized by higher wages, have started to focus on service industries. Regardless of the exact position of a city with respect to the industrialization process, facilitating movements of products and people has become the most important factor in determining the status of a city in the world economy. Transportation nodes, such as train stations and airports, have become larger and more complex with the growth of cities. After the Second World War and the rise of aviation as a method of travel, the role of airports has become more important. Some scholars now speculate that the centers of large metropolises will relocate to airports, just as industrial cities in the nineteenth and early twentieth century developed around train stations. They consider certain East Asian megacities as prime models of such "airport cities," since these cities are less hindered by factional interests due to stronger governmental control. Are the structure and physical design of aerotropolises qualitatively different from those of conventional cities? If so, to what extent? How do architectural designs function to support the image

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of aerotropolises? What are the political implications of the new city type?

In order to answer these questions, this paper analyzes the case of Songdo International City (SIC), which is part of the larger Incheon Free Economic Zone (IFEZ), as an example of an airport city, as suggested by John D. Karsada, who has developed the theory of the aerotropolis (Karsada and Lindsay, 2011). Proponents of the aerotropolis argue that airports will become the new node of urban development, and that a new kind of governance will appear to support the new pattern of urbanization. This new governance system would minimize administrative red tape and NIMBYism, which often obstruct the growth of airports and airport cities. The case of SIC has been promoted as the prime example of a new city type based on the new governance. Many airports in the West have started to lag in terms of air freight handling capacities. More recently constructed airports often encounter difficulties in the transformation into full-blown cities due to dissension within the regional government or resistance on the part of residents. However, many East Asian cities have experienced rapid economic growth and relatively less administrative hindrance in urban projects. Rem Koolhaas has pondered the possibility of new Asian megapolises in works such as Project on the City I: Great Leap Forward (Chung, Koolhaas, & Leung, 2001). Others, such as James H. Mittelman, have noted that the globalization process does not necessarily bring with it the demise of existing political networks. Although the highly centralized political systems of some East Asian countries might seem to provide ideal conditions for building the aerotropolises of the future, this interpretation does not take into account the more complex politico-economic processes behind the relevant macro-politics (Mittelman, 1999).

In the case of SIC, balancing the development of urban infrastructure and housing has eluded the current governance system, which is based on a partnership of the private and public sectors. To illustrate this point, this paper relies on the methods of literature review and media analysis. It first traces the development of SIC. It then proceeds to present a history of real and imagined airport cities in order to gain an understanding of how SIC fits into the recent academic discussions and visual articulations of airport cities. Although the theory of the aerotropolis is new, many architects and planners have developed futuristic visions of this sort. Both historical examples and more recent theoretical examples, such as SkyCar City, will be discussed. Finally, the aftermath of SIC development and current conditions will be analyzed using media analysis.

2. The Development of Songdo International City

Songdo International City (SIC) has been promoted as a new urban development geared to facilitating international trade and elevating the status of Incheon Airport to that of a global hub. It is part of the Incheon Free Economic Zone (IFEZ), a much larger urban plan being developed around the city of Incheon, which includes the Cheongna and Yeongjong areas (Fig.1.). Compared to the older airport in the Kimpo area, Incheon International Airport is farther away from Seoul, and is equipped with much of the infrastructure needed to support increasing air traffic. Incheon International Airport has been in use since 2001 to address the inadequacies of Kimpo Airport in handling an increased number of international flights and the complex logistics required of contemporary airports. It is currently in its third phase of development, and experts predict that the capacity of Incheon International Airport will be expanded to 740,000 flights, 100 million passengers, and 10 million tons of airborne goods per year (Chun, 2007). Whereas Yeongjong Island, where the airport is located, is expected to be developed with a focus on airborne logistics, tourism, and leisure industries, SIC will be developed to accommodate international businesses, IT industries, and R&D facilities. Developed jointly by the Incheon Free Economic Zone Authority (IFEZA) and the New Songdo International City Development LCC (NSIC, a joint venture by Posco E & C and Gale International), SIC is imagined as a new global hub thanks to its proximity to the international airport. Much of its infrastructure, including hospitals, schools, and college campuses, has either been built or is currently under construction. Using new IT technologies, the second phase of development is focused on building an ubiquitous system that will provide user-friendly, one-stop service.
Before the 1990s, Songdo was an island with a small population, and was best known as a seaside vacation spot that could be easily accessed by residents of Seoul. The first sign of large-scale development in Songdo was when land reclamation work for the sea area of 17.7 square kilometers was approved in 1990 by the central government in order to supply land for much-needed housing (Huh, 2006). Later, the aim of the project was changed by the Incheon city government to the construction of an international business district. After a brief hiatus due to a decrease in the budget, feasibility studies were carried out by the Korea Development Institute. Researchers and members of economic forums argued that the larger region of Incheon could function as a major distribution center in Northeast Asia. As the region develops, it could grow to include other types of businesses as well, forming a metropolis outside Seoul. After several reviews of the project, three areas including Cheongna and Yeongjong along with Songdo, were chosen in 2003 as part of the Incheon Free Economic Zone.

Discussions of constructing a free economic zone in Incheon started during the time of political and economic changes in the 1990s. South Korea's rapid economic growth in the 1980s had slowed down, and the rise of China in manufacturing industries started to threaten the position of South Korean manufacturers. Policy-makers started to argue that the South Korean economy had to find a new direction of development in order to survive in the increasingly competitive global market. Rising labor costs meant that manufacturing had a less competitive advantage, and many policy-makers emphasized the increasing importance of service and IT industries. Politically, the role of the central government became less emphasized due to structural adjustments, which affected even how the budget of the central government was managed. Large-scale construction projects led by the central government, which were common in the 1970s and even the 1980s, were displaced by projects led by the city government. In such a context of decreasing support on the part of the central government, attracting private investments has become much more important. In the IFEZ feasibility report, the role of private investment, especially foreign investments, was emphasized, while the possibility of heavy investment from both the local and central governments was precluded. It was argued that such a plan is possible if foreign corporations are allowed a return on their investment in the form of interests generated by the development. Unlike previous development projects in South Korea, which were led by the state, the development of IFEZ relies heavily on private investments, with the city's budget only covering the construction cost of infrastructure such as roads and water pipes.

In the report summarizing the completion of IFEZ's development, the Incheon Free Economic Zone Authority reported that 904 million dollars of foreign direct investment was made in Songdo alone (IFEZA, 2012). According to the report, many foreign and domestic companies, such as Celltrion, GM Korea, and Posco, had already invested capital in Songdo. Celltrion and other pharmaceutical industries will form a bio-technology cluster with research facilities, making SIC a regional center of new science and engineering developments. Promoting IFEZ and SIC will mean not only making capital investment in Songdo, but also building networks between South Korea and the rest of the world. International events such as the Global Fair and Festival in 2009, which was held in Incheon for 80 days, and the 2014 Asian Games function as important opportunities to promote IFEZ. In terms of human resources, the planned establishment of North American college campus branches and an international hospital are expected to attract many overseas Korean and foreign professional workers.

As innovative as it sounds, SIC's development is not entirely unprecedented, since many theoretical and practical attempts have been made to construct airport cities. Whether based on fanciful imagination or serious reasoning, the numerous futuristic visions of cities that focus on air traffic show that the concept of the airport city is not a new one. Yet SIC's development illustrates the process by which the airport city has become more of a practical and administrative problem rather than a mere fantasy. To elucidate the discursive dimension of SIC, this paper now turns to a history of both real and imagined airport cities.

3. A History of Real and Imagined Airport Cities

Ever since the invention of the airplane, plans for cities incorporating airports and related infrastructure have been developed by architects and planners around...
the world. For instance, as early as 1914, Antonio Sant'Elia proposed a city-planning scheme based on an intricate communication and transportation system. A still better-known city planning model incorporating airport transport was Frank Lloyd Wright's Broadacre City, featuring personal flying devices small enough to be stored in suburban garages. Such imaginary city models continued to be constructed in the latter half of the twentieth century. Peter Cook's Plug-in City was one example. Combining pop art, technology, and architecture, Plug-in City was a hypothetical model that reflected the growing importance of mobility and flexibility in an era of fast-changing urban environments. Similarly, SkyCar City, a more recent city scheme theorized by MVRDV, shows such an attempt to envision transportation-oriented urban development. Aptly subtitled "Pre-emptive History," this model started out as a semester-long studio project at the University of Wisconsin Milwaukee School of Architecture and Urban Planning. Showing a landscape dominated by individual flying devices, SkyCar City anticipated a future city that would function like an envelope partly effacing the distinction between buildings and streets.

However, these early attempts could not foresee the planning and logistical requirements associated with the maintenance of airports, let alone propose a working model of fully-grown airport cities. While the invention of airplanes goes back to as early as 1903, the birth of the airport as an independent building type had to wait longer, as early airfields were "generally indistinguishable from, and often also functioned as, local athletic fields, parks, and golf courses" (Young and Well, 2011: 55) (Fig.2.). For a long time airports were not considered as a separate building type, and many architectural scholars considered them as not very different from other transportation-related building types, such as train stations. Architectural historians' relative neglect of airports started to change with the development of the new architectural aesthetic associated with flight. Flight-related functions and requirements are very different from ground transportation, and this difference has contributed to the emergence of different architectural aesthetics. The emergence of dynamic airport designs evoking the new space age, such as Eero Saarinen's design for Dulles International Airport in 1958 (Fig.3.), has led many architects and architectural historians to acknowledge the airport as a new building type in the twentieth century. For instance, Brian Edwards in The Modern Terminal has noted that airports "are so much part of the gestalt of late twentieth-century life that they can no longer be considered as a postscript to the former building type" (Edwards, 1998: 21-22). Thus, the concepts of the airport and the airport city started out as pure fantasy/science-fiction and gradually became a more practical and administrative problem.

With the increasing number of commercial flights after WWII, airports started to get bigger. The new spoke-hub distribution paradigm that emerged after airline deregulation has also added to the complexity of airport design. Whereas the previous point-to-point transit model involves carrying passengers directly to their destinations, the new model is based on a system of connections, requiring many passengers to change flights. This new routing system has not only led to increased competition between airlines, but has also caused competition between different cities and airports for becoming the hub location. Those airports that can provide efficient infrastructure, including fewer delays and better transportation networks, have a higher chance of becoming a hub. As with cities, the logistics of airport planning involve zoning, transportation networks, and considerations of sustainability. The airports designed to suit the hub system, such as Kansai International Airport and Incheon International Airport, are qualitatively different from older airports such as Heathrow Airport, considered by many a planning nightmare. Edwards (1998) has pointed out that the elements that distinguish twenty-first century airports from older ones are "land-use diversity, intermodal transport integration, and environmental sensitivity" (Edwards, 1998: 198-199).

Some scholars go even further to argue that airports have been evolving since the invention of air travel, and that today's airports should be considered different from those of the previous century. Many now consider airports as a kind of city, rather than a building type. Gillian Fuller and Ross Harley have noted that "in a world where mobility and connectivity of all kinds is increasing, the cultural significance of what we call the aviopolis has become apparent" (Fuller and Harley, 2004: 11). Scholars such as Kasarda and Lindsay (2011) argue that air transportation has been increasing as a percentage of total transportation, and that the planning of cities will eventually be centered on airports, making future cities "aerotropoles." An aerotropolis is not simply a haphazard arrangement of structures but a city, and one whose success will depend on speed. This is because the faster movement of goods is the most important factor in determining the economic competitiveness of a city in the current age of globalization. According to Kasarda, the aerotropolis, which integrates the airport as a central node of the city,
will dominate the future, contrary to the current system which places noise-producing airports in a corner of a metropolis. In *Aerotropolis: The Way We Will Live Next*, Greg Lindsay, one of the proponents of the aerotropolis theory, discusses Songdo International City as the quintessential example of how the model of the airport city is materializing (Kasarda and Lindsay, 2011).

Skeptics of the airport city model point to practical issues such as limited fuel, while many proponents consider the theory plausible, arguing that technological advances may in fact solve that problem. However, the main purpose of this paper is not to evaluate the technical possibility of such a new city model. Instead, it focuses on the relationship between the rhetorical emphasis on the airport city and the architectural expressions of the twenty-first century airport in the context of globalization. What kind of public space is emerging in these airport cities where most of the dwellers are in transit? How do the designs of those cities compare to the aesthetic visions of architects seen in paper architecture? Although attempting to answer these questions may seem premature given the ambiguous status of airport cities, analyzing these aspects is crucial for understanding the implications of mega-airports and related urban structures that have become progressively bigger in scale.

4. The Aesthetics of Airport Cities and Their Political Implications

Envisioning a future unhindered by regulations, many structures in the SIC exhibit seamless and sleek qualities based on the South Korean adaptation of International Style architecture. For instance, Incheon Tower, a 151-story white structure planned to be located in Songdo, is a double-shaft structure that soars 2,013 feet into the sky, which if constructed will make it one of the tallest buildings in the world (Fig.4.). Planned to be developed by Portman Consortium, which consists of Portman Holdings, Hyundai, and Samsung, the estimated construction cost is about 2.5 trillion Korean won (about 4.7 billion USD).

Other areas in Songdo also show an urban landscape generated by abstract geometries and mathematical regularity. For instance, in addition to high-rise apartment blocks, office towers such as the Posco Engineering and Construction Tower and the Get Pearl Tower have been built. Yet even the low-rise buildings, such as Songdo Convensia, a four-story exhibition structure with a 54,157 sq. m. gross floor area, share similar architectural aesthetics. Abstract geometric shapes govern the exterior designs, befitting the futuristic vision of the city authorities and multinational corporations. Art Center and Lotte Mall, planned to be built soon, follow the design vocabulary established by these structures. In contrast, the low-rise research facilities in the Industrial District follow their own internal logics, resulting in the architectural design of typical science park structures (Fig.5.).

There have been similar large-scale urban developments in previous decades. For instance, the new capital plan, first formulated in the 1960s, envisioned a relocation of the capital away from Seoul. Although not realized, the plan was intended as a city built on a tabula rasa, similar to what Songdo used to be. Its plan clearly indicated a spatial hierarchy within the city, with political symbolism occupying a central space (Kim, 2011). Similarly, the plan to develop Yeouido (an island in the Han River), formulated by Kim Soo Guen in the 1960s, contained a central axis road with clearly demarcated administrative functions. The difference lies in the absence of central control in the case of Songdo. While a structure of a similar scale always entailed a degree of state influence, such is not the case in SIC. Instead, a partnership between the local government (IFEZA) and private interests is emphasized. Given the fact that only six percent of the financing of IFEZ came from the central government, this absence of a state presence is not surprising (Bank of Korea, 2011). Other structures, such as research and development facilities, have also been engineered to suit the needs of the corporate sector rather than
Compared to the new capital plan and Yeouido Plan (Fig. 6.), the city plan for Songdo (Fig. 7.) does not contain a focal point serving as the center of politico-economic activities. Rather, it consists of several danji (complexes/subdivisions), such as a Central Business danji, a bio danji, and a Techno-Park danji. Despite the high density generated by office towers and tall apartment blocks, the city has a decentralized plan that assigns a specific function to a given area without a distinct center. While the districts are connected by an underground subway, larger street blocks between districts suggest that pedestrian traffic between districts is imagined to be much less than automobile traffic.

This difference reflects the ideology of the new governance system based on corporate governance, which is imagined to be ideal for airport cities. For instance, Lindsay writes that the aerotropolis "is a test bed for new governance — the kind unencumbered by tax code, turf warfare, and ancient history" (Karsada and Lindsay, 2011: 194). The governance system closest to the one imagined by aerotropolists is a public-private partnership or "aerotropolis development corporation." The reason that this type of new governance system is required is that it makes it possible to avoid administrative problems and municipal disputes that produce inefficiency. Songdo, which is co-developed by IFEZA and NSIC, has a governance system envisioned by scholars like Kasarda. IFEZA is a branch of the Incheon city government, and it has a separate organizational structure with a planning bureau and an operating headquarters. Gale International is a real-estate development company specializing in large-scale projects around the world.

Yet such a sanguine prospect supposedly ushered in by a process of deregulation and public-private partnership does not always apply in real-life situations. Defining a common goal, assumed to be present in the current public-private partnership, is not an easy task. In the case of Songdo, the issue of balancing the development of infrastructure versus the housing/residential structure has eluded the current governmental system. This distinguishes Songdo from other new towns being developed in South Korea (Yoo and Park, 2014). While corporations are willing to make investments in residential developments that yield high returns, the same cannot be said about commercial developments and other amenities. There is a general mismatch between the ambitious vision of IFEZA and that of private investors. While IFEZA, being a branch of the city government, emphasizes the symbolic value of the city, developers are more interested in short-term profits, which may come without much investment in commercial or public infrastructures. As a result, many landmark structures, such as the Incheon Tower, have yet to be built in Songdo. Tellingly, the construction of the Northeast Asian Trade Tower has been cancelled after many years of reduction in project scale (Kim, 2014). There are even reports in the media that the Northeast Asian Trade Center has become a symbol of the "Songdo Crisis" (Kwon, 2010). Other development projects in the IFEZ, such as the 8 City project, have been cancelled as well. In addition to the economic downturn, technical glitches in written contracts have contributed to the postponement or cancellation of many planned projects.

Such discord indicates an important problem faced by would-be airport cities. Who is going to invest in necessary urban amenities that may not yield enough return to cover the cost? Even if the local government covered the cost for the initial and most basic infrastructures such as roads and sewers, it might not have the resources to provide for other amenities that may become necessary in an unforeseeable future. Even if a rational mechanism to distribute costs for the infrastructural maintenance can be found, there is the
issue of defining what those essential amenities are.

Another issue that is missing from the current discussion regarding the development of airport cities is the need to balance mobile and place-based activities. Despite the trend of emphasizing mobility, the livability of cities has always depended on the presence of rooted cultural landscapes with denser and slower-moving pedestrians. One may go even further and argue that the presence of denser urban fabrics has become even more important in this age of faster transportation and wireless networks. Rather than leaving public spaces simply as blanks that can be filled once bigger commercial and residential developments take place, it is necessary to consider ways to make such spaces socially and environmentally sustainable in the long term.

In current plans that emphasize mobility, public spaces such as parks and plazas are peripheral in both a conceptual and a physical sense. In most formulations of airport cities, including SIC, public spaces such as plazas and courtyards have simply become an envelope that surrounds the built structures. These envelope-like spaces are primarily gazed upon rather than inhabited (Fig.8.). Yet civic spaces cannot function if they are simply designed to be bypassed. Residents of SIC and other airport cities may be global entrepreneurs, but at the same time they are members of a local municipality. Without appropriate civic spaces in which residents can express their opinions publicly, airports will simply be airports rather than full-blown cities. The provision of wireless communications and indoor gathering places such as convention halls is not enough to sustain the living spaces of cities.

5. Conclusion

So far, this paper has examined the development of SIC and the discourses on airport cities that theorize that cities in the future will develop around airports. To conclude, Songdo International City can be regarded as an airport city whose urban infrastructure and governance system are markedly different from the rest of the cities in South Korea. Also, Songdo is different from many new cities in South Korea in that it has a decentralized plan designed to promote industry-specific activities rather than a centralized plan focused on integrating residential and commercial activities.

However, it remains to be seen if this new airport city model is sustainable in the long term. Traits of Songdo as an airport city, such as a public-private partnership and decentralized danji planning, do not facilitate the even development of all urban amenities including housing. Deregulation and the public-private partnership, often cited as ideal for the efficient functioning of aerotropolises, do not guarantee the successful development of the new city prototype, since not all aspects of urban investment bring equal returns and such disparity usually becomes a burden of the public sector. In the case of Songdo, private investments were concentrated on the residential developments, while other types of infrastructure remained underdeveloped. Contrary to the vision of a win-win economic situation on the part of the IFEZA, SIC faces the possibility of economic loss if the public and commercial sector development fails to catch up with residential developments.

What can the case of Songdo tell the rest of us about the future viability of the aerotropolis and the development of its public space? While it may be premature to make a conclusive remark on this, the current development plan of the airport city lacks attention to pedestrian-oriented activities. Even in airport cities, whose raison d'être is mobility and efficiency, the need for space that accommodates slower modes of life cannot be ignored. Everyday encounters, rather than purposeful visits, need to be considered when designing transportation infrastructures in order not to make the city just another version of a "machine-for-living." The possibility of building developments suited for both mobile and place-based culture needs to be studied further.

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