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Developing Tall Buildings and Urban Spaces, in Japan and Elsewhere

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Skyscrapers and their surrounding developments are critical factors in determining a city's global competitive advantage relative to other cities. These building projects are in fact the "tools" that can greatly increase a city's economic competitiveness by contributing to the cities' overall comprehensiveness. Several examples of the Vertical Garden City concept built throughout Tokyo and beyond show how tall building projects that embrace their surroundings and encourage the propagation of social and cultural activities at or near the street level can contribute critically in this way.

The Makings of an Ideal City

A city is a stage where an enormous range of human activities play out. An internationally competitive city is one where a broad range of economic and social activities generate new businesses, value, and lifestyles, all of which make up its "magnetic power." This magnetic power to draw in a diverse group of residents, as well as external investment, is based in the city's comprehensive appeal overall, and its global impact cannot be overstated.

To increase cities' comprehensive appeal, one must look beyond pure economics – to also focus on urban functions, such as research and development, cultural interaction, livability, the environment, safety, and accessibility – in order to ultimately design ever-more attractive cities.

To do so, in the process of urban redevelopment, it is crucial to consider not only the perspectives of corporate executives and businesspeople, but also incorporate the varied perspectives of many, including researchers, artists, tourists, and residents. The city's magnetic power intensifies when it becomes a place where people of diverse backgrounds and nationalities enjoy economic opportunity, entertainment, safety, and reliable efficiency. Such locales become the world's preferred cities which, in turn, helps stimulate national economies. The first question one must ask is what makes an ideal city, one capable of thriving in the midst of fierce competition with other global cities? The key question that follows is how can a city generate the "magnetic power" it needs to attract people, goods, money, and information from around the world?

The Vertical Garden City Concept

The "Vertical Garden City" concept is one response to this question. Since it's rarely possible to add new land to cities, our concept instead opens up existing space in urban environments by building vertically, both into the sky and into the ground. Replacing countless low-rise structures with a relatively small number of massive high-rise structures efficiently concentrates the diverse urban functions of residence, work, commerce, education, leisure, culture, socializing, and more. By building vertically, compact cities are created where people have enhanced mobility and accessibility – often on foot – for the enjoyment of fuller, and more rewarding private and professional lives.

The rejuvenation of cities is indispensable for economic recovery in older economies, as well as to sustain the growth of new economies. We have achieved our original aim which was to boost the magnetic pull of Tokyo, Shanghai, and other cities in where we have worked. We have developed a number of signature projects, such as ARK Hills, Roppongi Hills, Toranomon Hills, and Shanghai World Financial Center, based on our Vertical Garden City concept, a vision





which may be a vital urban model for 21st century Asia.

These urban centers are now home to many companies and people from around the world, creating new value and new lifestyles. This is the fruit of our efforts to not only construct facilities, but to nurture these urban centers and the communities that inhabit them.

Seven Principles of Future City Design

In order to create high-quality streets, optimize air flows, generate visual interest, and enhance the pedestrian experience – the benchmark of a thriving city – large-scale developments cannot be rendered as simple superblocks. As such, our research on the “Four-hectare Block Model” is about using

large developments as building blocks for a city-scale network by considering degrees of freedom in configuration planning and interfaces between buildings within each block etc., and through the combination of different “Four-hectare Block Models.”

Modern cities are often characterized by problems such as deteriorating urban landscapes due to haphazard building practices, long commutes caused by great distances between working and residential areas, constrained living environments resulting from the proliferation of cars and ensuing traffic jams, serious global environmental problems such as the heat island effect and increased carbon dioxide emission, and fragility in the face of disaster. Seven principles, which have

Opposite: Paris is an illustrative example of a city where people of diverse backgrounds and nationalities enjoy economic opportunity, entertainment, safety, and efficiency. (cc-zero) Joe deSousa

Top: The city of Shanghai is the first city in China where Mori Building Co. has implemented their “Vertical Garden City” concept. Source: Gensler



been deployed extensively through the projects discussed in this paper, form the cornerstone of the Vertical Garden City concept can shed light on solutions to resolve these problems.

Consider Superblocks

Carry out the construction of aesthetically appealing blocks with diversified urban functions (e.g., working, dwelling, commercial, travel, educational, and medical functions) and include open spaces, so that superblocks are more than just inflated regular blocks, but actually perform functions that regular blocks cannot.

Improve Disaster-Prevention Functions

Construct blocks using seismic restraints and vibration suppression systems, while designing them to perform at a high level of safety. In addition, construction of “Escape Streets” within the block that can provide refuge spaces and storage warehouses, as part of the disaster-mitigation strategy.

Utilize the Low-Rise Portion Flexibly

Construct the blocks using the terrain by utilizing underground infrastructure and newly built artificial foundations actively.

Build spaces exposed to the surface to be filled with water and plants on an artificial foundation, and ensure ample lighting and ventilation for the underground portion.

Consider the Environment

Carry out energy-saving and carbon dioxide-reduction measures for all buildings. In addition, build blocks that consider urban environments and can mitigate the heat island effect, in support of an “environmentally symbiotic city.”

Reorganize the Road Functions

Coordinate road construction with block construction in consideration of the regional network. Plant shade trees to create a pleasant environment along the streets and to provide a place for people to stop and chat.

Enrich Transportation Options

Construct and enrich the traffic network so that it is suitable for corresponding travel distances and travel means. Separate pedestrians and vehicles by configuring the public transit system vertically. Consider barrier-free design for the pedestrian space, so that disabled people can travel comfortably.

Construct Three-Dimensional Streets

Make the typical two-dimensional, wide streets three-dimensional and increase the spaces that can be utilized effectively. In addition, give thought to making the skyline of the building neat so as to improve the urban landscape.

ARK Hills – 1986

Mori Building Co. debuted its Vertical Garden City concept in 1986 in Tokyo with ARK Hills, Japan’s first privately built large-scale mixed-use urban complex. Centered on the 37-story ARK Hills Mori Building, later complemented by the ARK Hills Sengokuyama Mori Tower, the development also offers residences, a hotel, and a concert hall. At the time of its completion, many international financial institutions that were new to Japan moved their offices into the office tower, Japan’s first “intelligent” building. ARK Hills was soon recognized as Tokyo’s premiere international finance center. Today the office tower remains one of Tokyo’s most prestigious addresses, and still enjoys a high occupancy rate. Furthermore, the natural environment has benefited, as the avenues of cherry trees that form the symbol of ARK Hills, and the seven

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Opposite: Trees and greenery around the Roppongi Hills development provide tenants with a pleasant place to sit and relax. Source: Mori Building Co.

Top: Overall view of the ARK Hills complex, showing surrounding greenery. Source: Mori Building Co.

Bottom: The Roppongi Hills complex in its urban context. Source: Mori Building Co.

ARK Gardens have evolved into vital urban ecosystems over the past two decades. In fact, ARK Hills was awarded the “National ENERGY GLOBE Award Japan” in 2006 for its contribution to the urban environment.

Roppongi Hills – 2003

The late Minoru Mori, President of Mori Building and the driving force behind Roppongi Hills, wanted to realize a 21st-century version of “La Ville Radieuse,” the ideal city advocated by Le Corbusier in the 1920s. Roppongi Hills is not an aggregate of single buildings – it can instead be thought of as a block designed by considering the balance between the buildings, open green spaces, and roads, inheriting, but also advancing, the urban planning ideas of Le Corbusier for the modern age.

At Roppongi Hills, Mori introduced the concept of “town management,” a method by which the developer not only introduces facilities and infrastructure, but also address intangibles, such as activating the neighboring areas by bringing in foot traffic, re-establishing communities, and creating new ways of living. Since the completion of Roppongi Hills in 2003, a series of initiatives



Bottom: Shanghai World Financial Center brought Mori's "Vertical Garden Concept" to Shanghai. Source: Mori Building Co.

Opposite: A street view of the Toranomon Hills complex in Tokyo. Source: Mori Building Co.



have been implemented to keep this community fresh and exciting. As a result, more than 400 million people have visited the area, resulting in a steady growth of revenue.

Shanghai World Financial Center - 2008

In rapidly growing Shanghai, the Shanghai World Financial Center, a 101-story development soaring 492 meters into the sky, was completed in 2008. The dynamic, mixed-use center is a business, culture, and entertainment hub for Shanghai, with the world's highest observation platform, a five-star hotel, and commercial space. The uppermost portion of the building features a large rectangular opening to symbolize China's new window on the world. As a symbol of the Age of Asia, the Shanghai World Financial Center will grow further.

Toranomon Hills - 2014

Toranomon Hills is a 247-meter multi-use high-rise, making it Tokyo's tallest tower. With a total floor area of 244,360 square meters, the 52-story tower provides office space designed to the high specifications, luxury residences with city views, conference facilities, commercial outlets that help sustain a vibrant urban life, and the Andaz Tokyo, the Hyatt-affiliated luxury boutique hotel brand making its first-ever appearance in Japan. Toranomon Hills is expected to make a significant contribution to bolstering Tokyo's international competitiveness by delivering high quality business and lifestyle options for international communities.

About the Area

Toranomon Hills is located in the The Shimbashi/Toranomon area, within a Special Zone for Asian Headquarters, established by the Tokyo Metropolitan Government to create incentives designed to bolster the city's international competitiveness. The program's objectives are to attract foreign companies to newly locate their business operations in the area, and to create a higher concentration of company headquarters and R&D facilities for the Asia region.

The Shimbashi/Toranomon area extends south to north along Loop Road No. 2, forming a hub between the Akasaka/Roppongi area, which already has a high international population, and the Shiodome area, with its concentration of leading companies. The area lies along Tokyo's key business, financial, and administrative districts, as well as the Imperial Palace and the soon-to-be-constructed Tokyo 2020 Olympic Village.

Creation of Shintora-dori Avenue, A New "Symbol Street"

The Toranomon Hills project (formerly known as "Loop Road No. 2 Zone III Project") was conceived in the early 1990s, following the 1989 establishment of the Multi-Level Road System. This system made it possible to integrate roads and redevelopment projects, paving the way for an agreement to reconstruct the Shimbashi/Toranomon district. This plan incorporated the Loop Line No. 2, covering a section of approximately 9.2 kilometers from Shimbashi to Kanda Sakumacho that had long been delayed since first being proposed in 1946.

Moving the trunk route into an underground tunnel within Toranomon Hills made way for above-ground lanes for intra-city traffic and ample space for pedestrians alongside it. Shintora-dori Avenue has already become a new Tokyo "symbol street," playing host to parades and marathons and other cultural events, and has carved a path through the congested heart of the city that brings sea breezes inland and reduces the heat-island effect. The project is also expected to relieve traffic congestion in the city center, and provide a new connection to Haneda International Airport, dramatically improving business access to and from the city center.

The Mori Building Co. is also actively engaged in the management of the Shimbashi/Toranomon district, so that the local communities and tenant businesses prosper together to increase the overall value of the entire area. The company will strive to further evolve "Hills" as an internationally-





Left: Exterior gardens at Toranomon Hills bring some natural elements into Tokyo. Source: Teri Meyer Boake

Opposite: Toranomon Hills offers tenants and visitors a range of entertainment and dining options. Source: Teri Meyer Boake

recognized district brand, fostering a new international urban center concept.

An International-Standard Office Environment

Leased offices located on floors six to 35 offer approximately 3,400 square meters square meters of column-free space, with a ceiling height of 2.8 meters, to create a comfortable working environment with a great deal of flexibility. Moreover, the building's common-use areas and outdoor spaces are equipped with wi-fi to offer additional flexibility in tenants' working options.

Luxury Lifestyle

A total of 172 residences are located on floors 37 to 46, and all have attractive views of central Tokyo. The entrance and lounge are produced by the world-famous New York designer Toni Chi, and residents are able to access a variety of hotel services provided by Andaz Tokyo, occupying the top-most floors of the multi-use building.

Conferencing

With a total rentable floor space of 2,200 square meters, the facility is the largest of its type in the Shimbashi/Toranomon area, capable of hosting an array of international conferences and exhibitions. Based on the concept of the "smart conference center" and adopting the developer's operational expertise, this facility serves as a hub for social and business interaction.

Hotel

Meaning "personal style" in the Hindi language, Andaz provides 164 functional and luxurious guest rooms located on floors 47 to 50. The Andaz Lounge, all-day dining, and other services are situated on floor 51; floor 52, which is the highest in the building, contains Japan's first-ever penthouse bar, featuring an open-air space, an outdoor terrace, and a sky chapel.

Shops and Restaurants

Food and beverage establishments, as well as service outlets catering to international

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business needs are housed on floors one to four. Dining options include a selection of Japanese haute-cuisine, in addition to international dining. Floor three features a convenience store, coupled with a café, creating space for people to hold casual business meetings or work alone. There is also a flower shop, hair salon, shoe repair shop, and other conveniences.

Safety

In support of a commitment to safety and business continuity, the building employs three different types of dampers: 516 oil dampers, 620 brake dampers, and 82 unbound braces. These prevent the structure from sustaining serious damage if the rare major earthquake occurs. The dampers also reduce the discomfort from small-

and medium-sized earthquakes and wind sway, providing a more comfortable office environment, as well as damping the shaking caused by long-period ground motion, which is a concern in high-rise buildings.

The lower levels are equipped to serve as temporary space for 3,600 disaster-stranded people in an emergency, which contributes to improving the disaster-preparedness capability of the entire district. Emergency power is supplied to designated shelter-in-place areas, providing lighting, sanitation, and communications. The space is outfitted with an earthquake well, supply storage room, water, food stocks, and other materials and equipment required during an emergency.

The Environment and Greenery

Approximately 6,000 square meters of open space spreads across the artificial ground created to raise the development up over the Multi-Level Road System. This space features a babbling brook, a large grass plaza and extensive greenery throughout, showcasing seasonal changes and creating an urban oasis. It also links to the road above Loop Road No. 2 to form an area along the north-south axis where people can gather and relax. Toranomom Hills forms part of an urban greenbelt, consisting of the Imperial Palace, Hibiya Park, and Atagoyama (the east-west axis).

The project employs measures that increase the energy-saving performance of the building and the surrounding district.





These measures include – not only the more common solutions of LED lighting and an ultra-efficient heating system – but also sharing an efficient cloud-computing system. Since this experiment is a leading effort to achieve district-wide CO2 reduction, it was designated a “Model Project for Promoting CO2 Reduction in Housing and Buildings” for the impact it will have on other large projects.

Art and Culture

Toranomon Hills houses a number of art pieces created by emerging Asian artists. Curated by the Mori Art Museum, the pieces decorate every turn in Toranomon Hills with images of a futuristic Tokyo.

Opportunities for Expansion in Japan

It is the responsibility of developers engaged in urban design to create and continue to nurture cities. This has not always been straightforward. For instance, Japan has many regulations regarding large-scale urban redevelopment in city centers, so it has taken more than 10 years to complete each of the Tokyo projects described here. But now this situation is starting to change dramatically. Two events in particular have

coincided to create a once-in-a-lifetime opportunity to accelerate and revolutionize urban redevelopment in Japan.

The first is an initiative called National Strategic Special Zones (NSSZ), one of the elements in the “third arrow” of “Abenomics,” the nation’s economic growth strategy under the current administration. National Strategic Special Zones have laid the foundation for various deregulations and for expediting business development. The Ministry of Land, Infrastructure, Transport, and Tourism, and the Tokyo Metropolitan Government are also both issuing grand visions for development through 2040. The second and more immediate catalyst is the Tokyo 2020 Olympic and Paralympics Games. This has generated an atmosphere and energy leading public and private sectors to collaborate and work toward a shared target. The Japanese people can tap into extraordinary power when they share a unified purpose.

These two events have coincided to radically change the mindsets of the people, as well as the country’s overall morale, which had previously been dragged down by

more than 20 years of economic deflation. Real estate developers are wisely and enthusiastically moving forward to capitalize on this opportunity.

In the heart of greater Tokyo, the world’s most populated area with some 36 million residents, leading developers are planning and undertaking diverse projects. Mori Building plans to drive some 10 large-scale urban redevelopment projects in the Roppongi, Akasaka, and Toranomom areas in the next decade. This will amount to 22 hectares of land and 2.2 million square meters of gross floor space.

These plans are occurring in the context of a new era of both *inbound* and *outbound* globalization in Japan, largely driven by the NSSZ initiatives and the Olympics.

“Inbound globalization” is helping to attract people, goods, money, and information to Japan and to Tokyo. It is showing the positive Japanese real estate market conditions, welcoming and promoting collaboration between domestic and foreign business partners. Inbound globalization also refers to initiatives encouraging global companies to

Opposite: The grass plaza outside of Roppongi Hills.
Source: Terri Meyer Boake

Right: Sengokuyama Tower, a later addition to ARK Hills.
Source: Mori Building Co.



establish their Asian regional headquarters in Tokyo, and attracting key businesspeople to work and to succeed here.

“Outbound globalization” refers to Japan sharing its urban development knowledge with the world, especially with other Asian countries, which have been making dramatic progress but also face urban issues stemming from this rapid growth. Many of these issues are the very same issues that Japan has experienced, and solved, through trial and error.

For instance, we know how to construct buildings and cities resistant to earthquakes and other disasters; to create green, eco-friendly cities; to efficiently manage buildings and cities; and to extend the celebrated Japanese spirit of meticulous hospitality, or *omotenashi*. Japanese developers and real estate companies have much to contribute to global urban development in terms of tangible and intangible aspects.

Pan-Asian Opportunities

Mori Building has concentrated its development of high-rise buildings in Japan and China. Asian cities tend to be

congested with residences and offices, so by applying the Vertical Garden City concept to make efficient use of vertical space, we are creating compact urban settings where people can enjoy shorter commutes and richer, more varied lives. Going forward, we believe that our urban design concept can be applied in other emerging cities of Asia where urbanization is advancing rapidly.

Mori Building is looking beyond Japan and China into Southeast Asia. In 2014, we opened a new representative office in Singapore, which joins our existing offices in Shanghai, Dalian, Seoul, and Hong Kong. Rapid urbanization and economic growth in many Southeast Asian cities are creating growing demands for high-quality buildings and development. Our new Singapore Representative Office will engage in research and marketing, targeting real estate investment, development, and consulting.

The completion of a tall building project is not the end, but rather the beginning, of the developer’s responsibility. If the development is designed such that – beyond its own financial bottom line – it

also nurtures the cultural life of its host city, this is the most substantive proof of that commitment. If a development is of a certain scale, it has a responsibility to mitigate the potential consequences of that scale and convert them into positive attributes. Tall building and their related developments can do so much more for cities than just provide an “icon” to be admired – they can become integral to the cohesiveness and, thus, the competitiveness of the city.