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Authors:	Daniel Libeskind, Founder / Principal Architect, Studio Libeskind Carla Swickerath, CEO / Principal, Studio Libeskind
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and low. As much as cultural institutions need to be profitable in order to flourish, commercial enterprises need to have a cultural conscience in order to succeed. This intertwining of public and private needs a positive articulation in the city structure.

It is critical that architecture have a local identity that creates a singular place and unique character. If rooted in the history of the place and the culture of its people, architecture and urban design can create sincere and unique human experiences, robust economies, ecosystems, and communities integrated into the existing fabric of the city.

**The Common City:
Architecture and Public Space**

The shift has moved away from the individual – the 21st century is about democracy, diversity, and multiple voices. We need our cities to give us more than ever before.

Studies of cities seldom take into account the ineffable and unquantifiable human desire. Surely cities depend more on their citizens than on their walls. Aristotle noted that a city

cannot be larger than the ability of the mayor to know all its citizens. Today’s metropolitan city is vulnerable in its very structure, since democratic participation seems unable to steer development equitably after the city reaches a certain scale.

Future cities need to develop passionate democratic participation in order to create the kind of public space and environment that allows everyone to pursue their own dreams. This is not a utopian ideal even at the scale of 21st century city. The empowerment of citizens to participate directly in the design of their own environment is a requirement of a meaningful future.

Fifty-four percent of the world’s population lives in urban areas, a proportion that is expected to increase to 66 percent by 2050 (United Nations, July 2014). Coupled with the transformation of city centers from nine-to-five business districts to 24-hour neighborhoods, there is a great demand on space. Creating both density and open space – with streets that weave a social fabric that binds people together – is essential in the development of the cities.

Opposite: Diagram of Ebenezer Howard’s Garden City. (cc-by-sa) Wikimedia

Top: Buckminster Fuller’s Montreal Biosphere is a bold and innovative design that has been preserved, and continues to be celebrated in the city. (cc-by-sa) Idej Elixé



Designing for the Future: Sustainable Communities

Sustainable design is about creating buildings and public spaces that people love. When architecture becomes a part of the urban fabric it becomes important to the city and the identity of a place. Designs that are thoughtful, contextual, and innovative, and that are built in a responsible way, are the ones that will survive into the future. High density living is necessary to deal with population increase and the management of our natural resources. Design solutions must provide an opportunity to establish new models for sustainable urban development that are inspiring and community-oriented. The future relies not only on technology and building design, but on quality public spaces that integrate transportation, infrastructure, economic, social and land use decisions to maximize sustainable development.

In Practice: Case Studies

These specific examples below explore the core concepts above and illustrate how culture, sustainability, and meaning can be incorporated into the architecture and planning of these dense urban environments.

World Trade Center Master Plan, New York City, USA

“Daniel Libeskind’s proposal represents a search for secure foundations in a time when they are both literally and figuratively crumbling. Digging deep below the surface of the site, he uncovers what he takes to be the bedrock, which grounds buildings and, more important, human aspiration. Far from a crypt, this is a place for worship and reflection reminiscent of ancient catacombs.”
 –*New York Times* (December 2002)

“Though all the new Ground Zero proposals in one way or another demarcate the footprints of the Twin Towers, Libeskind’s design is by far the most dramatic evocation of the disaster. It is easy to see why it struck such a resonant chord among the victims’ families.” – Martin Filler, *The New Republic* (February 2003)

“I arrived by ship in New York as a teenager, an immigrant, and like millions of others before me, my first sight was the Statue of Liberty and the amazing skyline of Manhattan. I have never forgotten that sight or what it stands for. This is what this project is all about.” – Daniel Libeskind, *Memory Foundations* (December 2002)

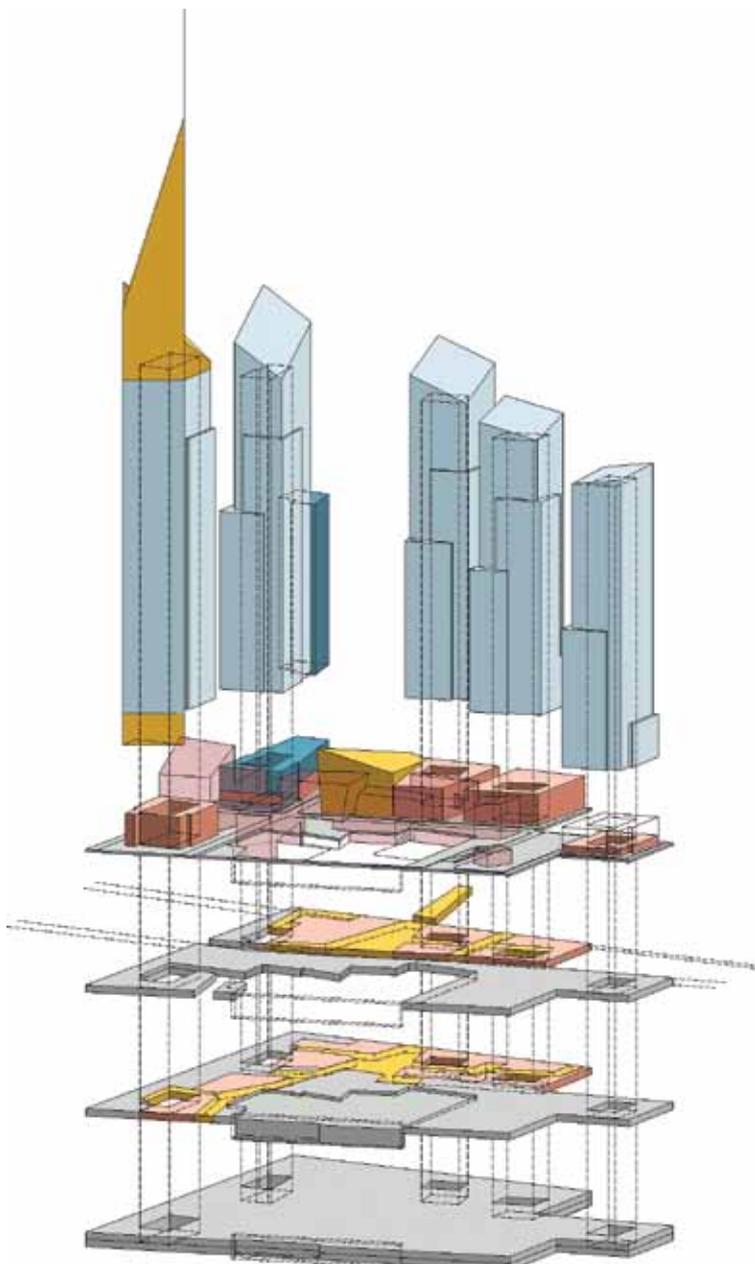
There were many responses to the terrorist attacks of 9/11 – political, economic, and developmental responses. The WTC master plan is a cultural response: to create a space that both commemorates the past and moves New York forward into the next chapter of its history.

New York is a city of optimism, and the neighborhood had to be repaired and reinvigorated. The challenge was surely not just to accommodate the programmatic requirements of square footage, office buildings, retail, and commercial space, but how to create a balance between maintaining the memory of what happened on that date, while providing a place which would be the source of hope and inspiration for the future. The public space for the memorial had to be sufficient for the millions who would come to see it, as well as intimate enough to allow solitude and reflection. The architecture is centered on the prominence of the memorial, restoring the skyline, reconnecting the urban fabric, the city grid and creating public space. All of these pieces – some of them can be sensed with our eyes and ears, while others are ineffable – yet all of the components

Opposite: World Trade Center Master Plan – Site Plan.
Source: Studio Libeskind

Bottom: The spiral of towers around the memorial are supported by a 70-foot under-story. Source: Studio Libeskind

“Design solutions must provide an opportunity to establish new models for sustainable urban development that are inspiring and community-oriented. The future relies not only on technology and building design, but on quality public spaces that integrate transportation, infrastructure, economic, social and land use decisions to maximize sustainable development.”



continue a culture and define a human being through memory.

From the master plan's inception, the core of the site, the place where people perished, was sacred. The 9/11 Memorial had to be its centerpiece, a space for reflection that incorporated the chasms left by the towers' collapse. The footprints are a physical reminder of the enormity of the attack. Surrounding the footprints, the waterfalls create a soothing barrier against the city's clamor. The slurry wall, a dramatic element that survived the attack, an engineering wonder constructed on bedrock foundations and designed to hold back the Hudson River. The foundations withstood the unimaginable trauma of the destruction – just as the U.S. Constitution asserts the durability of democracy and the value of individual life. From the Memorial Museum, with underground galleries that at bedrock level reveal the slurry wall to Tower 1 with its 1776-foot pinnacle at Ground Zero reaffirms New Yorkers' democratic spirit, intrinsic optimism, and determination to embrace the future.

The master plan developed organically, as it should, incorporating the ideas, talents, and voices of many; families of victims, citizens, security experts, officials, builders, and architects collectively creating a new Lower Manhattan, one which takes its cue from the human scale and its aspirations.

The 10 million square feet of commercial office space on the site is broken down into five commercial office towers, compatible with New York's urban fabric. The towers



Opposite Top: Rendering of the World Trade Center site in relation to the Statue of Liberty. Source: Studio Libeskind

Opposite Bottom: Rendering of the envisaged World Trade Center site as of 2015. Source: Silverstein Properties

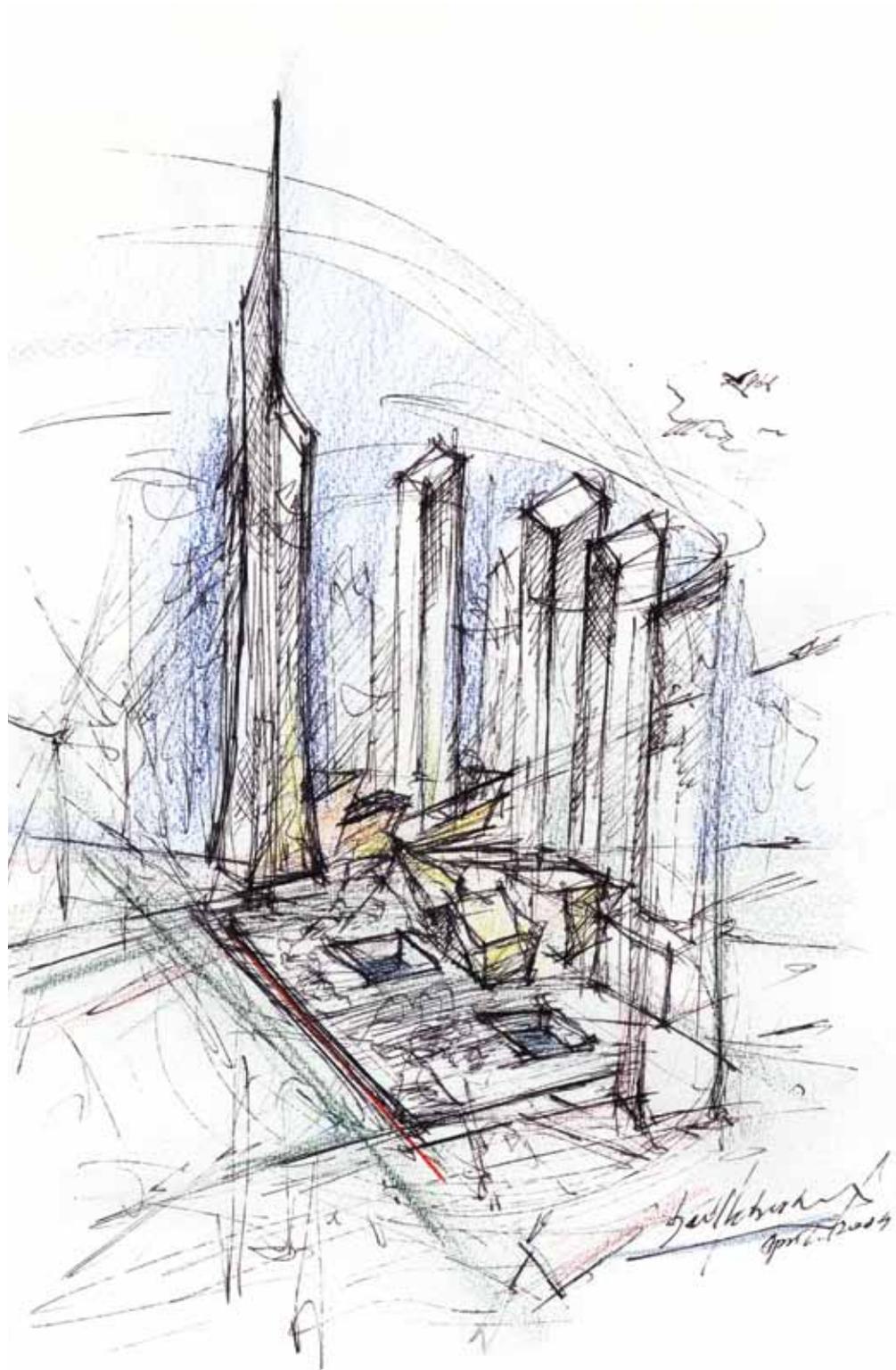
Right: World Trade Center Master Plan – Sketch. Source: Daniel Libeskind

are organized in a three-dimensional spiral culminating with WTC 1, which is the tallest tower on the western edge of the site. Urbanistically, their orientation emphasizes the centrality of the memorial space with Tower 1 marking the location of the slurry wall vertically on the horizon. More significant than a particular massing of any of the towers is the overall composition of the set of five and their relationship to one another.

In the end, half of the 16-acre site is devoted to public space, defined by the memorial and the Memorial Museum, while also setting aside locations for sustainable, state-of-the-art office towers, re-connecting the historic street-grid, reinvigorating the streetscape with above-ground retail areas, and reshaping the underground transit concourses. There is even room for two major new public facilities: an iconic new transportation station and a performing arts center.

An essential part of any development project, the master plan serves as both its conceptual basis and its technical foundation. The plan defines the spirit of the approach and organizes the site's various elements, emphasizing the human experience and the public realm throughout. The plan determines each building's size, height and location; the structures' proximity and relationship to one another; the site's infrastructure, transportation, sustainability standards and security strategy; and the relationship between the site and the surrounding areas.

As the master plan envisioned, the World Trade Center site has become a mixed-use





area fully integrated into the vibrancy and activity of the surrounding neighborhoods.

Haeundae Udong Hyundai l'Park, Busan, South Korea

"Neither frothily hip nor elegantly staid, this new hotel embraces luxury with understated 21st-century chic, and fascinating visual riffs on an earlier epoch." – *Globe and Mail* (July 2013)

On the waterfront of the southern city of Busan, the largest city in South Korea after Seoul, Haeundae Udong includes the tallest residential tower in Asia. The mixed-use project also encompasses two other residential towers, a 34-floor high-rise hotel, an office building, and a three-floor retail building with residential units – altogether a 4.5 million-square-foot development.

The project is designed as a unique composition expressed in a series of dynamic volumes on the Busan waterfront that harmonize with the landscape and celebrate the city's spectacular setting of mountains, rivers, and the sea. The buildings are sculpted to reflect the dramatic beauty and power of the ocean. The curvilinear

geometry of the buildings allude to their context; the grace and force of ocean waves, the unique composition of the petals of a flower, wind-filled sails of ships on the water are inspired by the subtle, elegant curves in traditional Korean architecture. The forms of the composition, read against the city of Busan, create an iconic three-dimensional waterfront development.

The main challenge of the project was to create a balanced composition with maximum views and livability with a large program on a very dense site. The design had to meet rigorous efficiency expectations and moderate construction costs while maximizing sweeping views of the ocean, the marina, the mountains, the Gwang-An bridge and the landscape and the city of Busan.

To find innovative solutions, multiple strategies for the massing of the program on the site were studied. Instead of simply extruding the typical building footprints to their maximum heights, the footprints of the towers are made of a sculpted shape in plan, the heights are varied and the profiles are tapered to create a three-dimensional composition on the horizon. The varying

heights of the buildings help to break down the overall massing of the residential tower complex. Instead of simply extruding the footprints of the buildings to an equal height, the design redistributes the allowed massing and height of the towers to create variation in the composition of the towers while meeting the maximum floor area ratio (FAR) for the development.

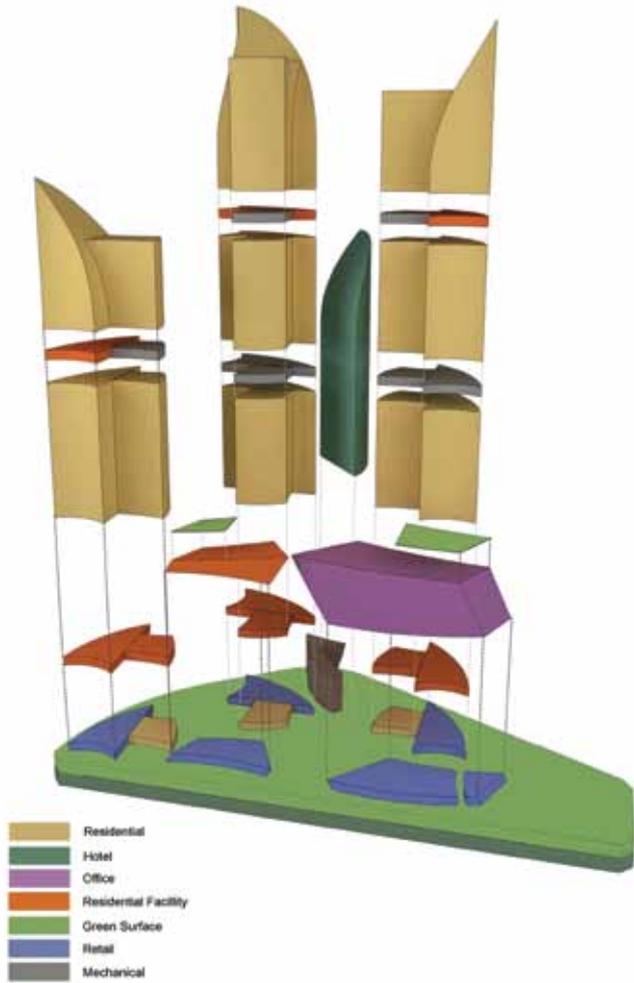
These strategies not only give the project and the city of Busan a new landmark and a new image of residential development, which in Korea is traditionally quite formulaic, they also help maximize the view corridors of all the apartments and bring the most light possible into the site and the developments beyond the site. Redistributing the massing makes the very large development seem more slender on the skyline. Also, the varied forms create unique and exciting spaces between the buildings that add interest and variety to the entire development from inside and out.

A fundamental principle of the design of the Haeundae Udong Hyundai l'Park was to create a community. In Korea, large-scale, urban residential projects are popular for many reasons. These include premium

Opposite: Overall view of Haeundae Udong Hyundai I'Park.
 Source: Hyundai Development Company

Right: Site Mass Diagram of Haeundae Udong Hyundai I'Park.
 Source: Studio Libeskind

Bottom: Site Plan of Haeundae Udong Hyundai I'Park.
 Source: Studio Libeskind





amenities, maintenance, and security but, most significantly, there is a strong cultural emphasis on family and social relationships in Korea, thus the high-density residential developments are preferred because they support a strong sense of community. The distinct image of the project gives the residents a clear sense of identity and the project's varied public spaces give the community places to gather. From its inception, the design of the project was considered a complex – a collection of buildings with uses centered on the community – rather than individual towers in a block. This also influenced the amenities oriented toward multi-generational families, community services, and the layout and circulation of the entire development.

Taking advantage of the crescent-shaped site, the three residential towers are lined along the edge of the curve. This composition maximizes the waterfront views and allows for the most space from the adjacent residential complexes. The placement of the towers taking advantage of the shape of the site also allows for a generous park to be developed, inviting residents and visitors to enjoy a unique

outdoor experience that will provide an open space for the residents as well as the visitors to the site and to the city of Busan. The central landscaped park provides a communal space at the heart of the project for residents to relax, gather, celebrate, play, and reflect upon the ocean views, and includes spaces for group activities and cultural events. The park is a special amenity to the residents of the development, and it provides the dense city of Busan with a special public park along the dramatic ocean front.

CityLife, Milan, Italy

For more than a decade, the 61-acre site that formerly housed the Fiera Milano – Milan's historic international fairgrounds – lay abandoned.

The CityLife master plan reconnects the existing city fabric –with a new neighborhood situated along a 23-acre central park, a metro station, and a new public piazza – within a gleaming skyline composed of three iconic towers by Studio Libeskind, Zaha Hadid Architects, and Arata Isozaki & Associates. The master plan is composed of a series of distinct neighborhoods, each one placed within

the park, and each proposing a variety of different scales and uses from residential, recreation, office space, retail and cultural. The station is slated for completion in 2016, the first housing parcels have been completed by Studio Libeskind and Zaha Hadid Architects, and the towers and phase two of the residences are all underway.

The centrally located site provided a unique opportunity to develop a significant part of an historic city. This site historically exhibited the best of Milan and Italy, holding the aspirations and pride of all Milanese, representing the greatness of Italian design, furniture, fashion, technology. The master plan had to create a contemporary development, sensitively woven into the historic fabric.

The plan offers an innovative approach to large-scale urban design within a dense city. The main concept is simple and bold. The site is broken into neighborhoods, which are defined as distinct forms that together create a composition in the landscape. Although they are distinct and human-scaled, together these neighborhoods create a diverse, active, and vibrant city

Opposite: View of Haeundae Udong Hyundai I'Park in its urban context. Source: Hyundai Development Company
Bottom: Site Plan of Milan's CityLife Masterplan. Source: Studio Libeskind

“The site is broken into neighborhoods, which are defined as distinct forms that together create a composition in the landscape. Although they are distinct and human-scaled, together these neighborhoods create a diverse, active, and vibrant city life.”





Left: Milan's CityLife Master Plan - Aerial View.

Source: Hayes Davidson

Bottom: The Central Tower at CityLife. Source: Hayes Davidson

Opposite: CityLife residences. Source: Michele Nastasi



life. The design breaks down the overall density and mass of the large urban development to create a pedestrian scale that is at once exciting and livable. The rest of the site is developed into a generous, active public realm, animated with a large urban park connecting the neighborhoods together. The plan creates a contemporary development sensitively woven into an historic fabric.

The design of the first residential parcel reflects the changing composition of an historic Milanese neighborhood. Using a classical courtyard configuration and naturalistic materials the design remains faithful to the character of the surrounding area, while the asymmetrical layering of the façade signals a contemporary transformation of this language.

The residences, ranging from villas to apartment blocks, are carefully sited on the perimeter of the site at a scale that resonates within the existing context. The rooftops slowly rise from the south east along with low-rise seven-story buildings that climb northwest to a 14-story height. This flexible arrangement not only



maximizes daylight, fresh air, and views of green space, but also gives each unit a distinct character from one to the next.

In order to provide a culturally diverse, vibrant mixed-use development, the organization of the scheme integrates essential cultural buildings and retail amenities including prominent retail stores and public performance facilities. These public amenities act as a buffer to the large-scale remaining Fiera buildings to the north while integrating the public park at its center and housing units to the east, west and southern edges. A central part of this urban scheme is the restoration and reconstruction of the historical Palazzo della Sport into a unique retail destination. The Palazzo will once again become a functioning amenity for the community, reviving history with contemporary life.

At the middle of the new central park are three iconic commercial high-rise buildings that are concentrated in order to maximize space for a large public park, a grand piazza, as well as intimate public and private spaces. The skyscrapers are sculpted and highly visible skyline on the site. Each building has

an individual expression, yet all three create a singular composition to define the public piazza. At the base of each tower, there are retail and public amenities that help dissolve the boundary between the public and private commercial realm. The towers have been carefully positioned in order to provide appropriate shade, maximum light, and a positive pedestrian experience.

The master plan allows for maximum freedom of development in the future. It was designed for growth as well as changing market demands to allow for its economic success and sustainability well into the future. Its ability to change over time and re-invent itself as the development evolves has ensured the success of the master plan, which is about fifty percent complete today. The diverse expression of the site mirrors the richness of Milan's history and organic growth.

Final Thoughts

As we see the rapid growth of the world's urban centers, we have to abandon outdated ideas of planning and building; the old models no longer apply. We must look to a comprehensive approach that incorporates the values of culture at all

levels, inclusive architecture where citizens can participate in the shaping of the future.

We must create architecture that meets clients' needs while giving open, public space back to the people who live and work in the area, enabling a symbiotic relationship between the public and private spheres within the urban realm. Our buildings should be high-density and dynamic in structure, while remaining grounded within their context and responsive to the human scale. We must build sustainably by combining the latest technologies with traditional means and by creating buildings that matter. We must also remember that the key to a truly sustainable city is the democratic inclusion of its inhabitants.

To move forward, we must abandon the myth of the labyrinth and resist the wings of flight. The cities of tomorrow will embrace history without being stifled by it; they will radically innovate from the center moving up, and not out; and they will serve the communities through the voices of many, creating spatially and intellectually rich environments that mirror the aspirations of their inhabitants.