

# Summary Report on the Selected Design for the World Trade Center Site

## Introduction

In the summer of 2002, the Lower Manhattan Development Corporation initiated a worldwide search for design and planning professionals to propose visionary designs for the World Trade Center area. The challenge, among the greatest of our time, was to transform a 16-acre void into a place where loss is remembered and life is celebrated.

The LMDC received over 400 submissions from around the globe. Seven teams were selected from among some of the world's most talented architects, planners and designers because of their bold ideas and strong beliefs. They were charged with creating a soaring vision, firmly rooted in the complexities of the World Trade Center site and guided by a flexible program that had been shaped by months of public comment. The program called for, among other elements, an appropriate setting for a memorial, a bold new skyline to rise in Lower Manhattan, a better-connected downtown and a range of uses on the site.

Upon the release of nine designs on December 18th, 2002, the LMDC launched *Plans in Progress*, one of the most ambitious outreach campaigns ever undertaken. The intensive effort to engage the public in the planning process featured an exhibit of the designs at the Winter Garden that drew 100,000 visitors and generated more than 8,000 comments; the presentation of the plans on the Internet, drawing 8 million visits; a documentary of the teams describing each design in their own words; and two public meetings simulcast to all five boroughs and Long Island, and a separate public meeting in New Jersey.

Each design was evaluated against a series of quantitative and qualitative factors, including the comprehensive record of public comment. The extensive feasibility analysis was conducted by the LMDC and Port Authority, working closely with the New York State Department of Transportation (to review the impact of each proposal on the West Street Route 9A corridor) and Stanton Eckstut, principal at Ehrenkrantz, Eckstut & Kuhn Architects (advising on planning and development issues). Seven additional sub-consultants provided independent analysis of specific aspects of each design:

- Hamilton Rabinowitz & Alschuler (HR&A) – marketability of commercial office space and retail space; constructibility of commercial and retail components within market conditions
- Sam Schwartz & Company – vehicular and pedestrian movement on and around the site
- Allee King Rosen & Fleming (AKRF) and The Louis Berger Group – preliminary environmental review

- Turner Construction and Federman Construction (FD+CC) – cost analysis for public realm investments, including unique features of each proposal
- Muser Rutledge – foundation engineering and slurry wall stabilization
- Vollmer Associates – traffic impact and cost in the West Street corridor

LMDC and Port Authority planning staff and consultants the designs based on the following 12 quantitative and qualitative factors, including public comment, and numerous subcategories:

- Memorial Setting: How well does it provide an appropriate memorial setting?
- Program: Does the design meet the program requirements?
- Parcels/Street Pattern: How well does the design establish practical street, block and development parcels?
- Public Response: What is the public response to the design?
- Vision: How well does it support the Mayor's Vision for Lower Manhattan?
- Connectivity: How well does the design connect with its surroundings?
- Phasing: Does the design allow for phased development over time?
- Public Realm: How effective is the addition to the public realm?
- Private Development: Does the design provide an attractive environment for private development?
- Unresolvable Issues: Are there components that are unresolvable?
- Resolvable Issues: How significant are the issues that can be resolved?
- Cost: What is the estimated cost of publicly funded elements of the plan?

LMDC and Port Authority staff were present at a series of public hearings held in New York and New Jersey, and reviewed in detail the thousands of public comments solicited through *Plans in Progress*.

On February 4, 2003, the LMDC and Port Authority announced that two design concepts for the World Trade Center site were under final consideration: the Memory Foundations design by Studio Daniel Libeskind, and the World Cultural Center design by THINK, a team led by Shigeru Ban, Frederic Schwartz, Ken Smith and Rafael Viñoly.

## **Selection Process**

Following the February 4 announcement, the LMDC and Port Authority worked closely with Studio Daniel Libeskind and team THINK to further develop the two designs under consideration and to resolve issues specific to each design. Both teams worked on several tasks:

### **1. Defining the Memorial Site**

The LMDC will sponsor a worldwide competition in spring 2003 to design the memorial. Although the teams were instructed not to propose a design for the memorial, they were charged with suggesting a context for the memorial as the centerpiece of their design. The setting would create a distinct memorial

district so that the design competition will have a clear program and three-dimensional context. The LMDC memorial program staff participated in the ongoing meetings with the designers to ensure that the proposed memorial setting is consistent with the draft mission and program statements.

## **2. Coordinating the designs with the proposed transportation network**

During the past year, the Port Authority studied the transportation infrastructure needs at the World Trade Center site, and developed a program of requirements: an expanded PATH platform and mezzanine; a grand point of arrival; improved connections between PATH and subway lines; expanded pedestrian connections to off-site locations; vehicle security; bus and car parking; and truck servicing. The Port Authority developed a proposed concept plan for these elements that satisfies the transportation requirements. The design teams reviewed the Port Authority's concept plan for compatibility with their designs, and where conflicts arose, they either proposed modifications to the Port Authority concept plan, their own plan, or both. The designers worked with the LMDC and the Port Authority to preserve the integrity of their original designs and core ideas, while ensuring compatibility with the needed transportation infrastructure.

## **3. Marketability of Office and Retail Spaces**

Commercial and retail space on the World Trade Center site must meet the current needs of office and retail development while remaining flexible enough to accommodate future changes and preferences. The design teams adjusted certain aspects of their commercial buildings to enhance their marketability based on current and anticipated demand. Working with LMDC and PA consultants, the design teams reviewed market needs regarding sizes of floor-plates, overall sizes of buildings, sizes of building cores relative to elevator and emergency exit plans, quality of commercial space, and marketability of retail space. These adjustments did not compromise the original designs, and did not affect the proposed memorial and cultural site designs or any of the core ideas and features of each design.

The LMDC and Port Authority also worked with each design team to address design-specific issues. With respect to Studio Daniel Libeskind, particular attention was paid to:

### **1. Slurry "Bathtub" Wall Stabilization**

One of the core ideas of the Studio Daniel Libeskind design relies on exposing portions of the slurry wall that holds back the Hudson River waters from the World Trade Center site "bathtub." Prior to the destruction of the World Trade Center, the slurry wall was supported by the horizontal floors of the site's many underground levels. With these floors destroyed, the walls

have since been temporarily stabilized using tiebacks (the same method used to construct the wall). However, the slurry wall is designed to be supported by lateral structural elements within the bathtub. The tiebacks are a temporary solution, and must eventually be replaced with some form of structure within the “bathtub” space.

The slurry wall will become structurally unstable if left in its current, fully exposed state, and if left unsupported, would eventually become a safety hazard. The concept of leaving the slurry wall exposed to demonstrate its resilience is feasible only if some form of lateral structure is added to support the wall’s stability and enhance its solidity. In addition to the need for structural stability, exposing the wall to the weather will accelerate its deterioration due to leakage, freezing, de-laminating and other hazards. Studio Daniel Libeskind developed two proposed solutions to these problems, resolving both the need for structural stability and the need to maintain and enhance the solidity of the wall. Both solutions retain the integrity of its core idea - exposing a portion of the slurry wall as a symbol of the resilience and enduring power of American democracy. Studio Libeskind refined its design to ensure that the slurry wall will remain structurally sound for generations to come, and function both as an important design symbol and a safe, functioning structural element to hold back the Hudson River.

## **2. Pedestrian Continuity at Church Street**

Reviving and enhancing street life in Lower Manhattan is a central goal for the LMDC and the Port Authority. Residents, workers and visitors should be presented with attractive and dynamic streetscapes designed to create the best possible retail and open space amenities for a revitalized and dynamic Lower Manhattan. Successful urban planning dictates a mix of street-wall conditions with retail or other uses and public open spaces, but the design of these elements must be carefully considered. The arrangement proposed for Church Street by Studio Daniel Libeskind is unconventional, yet an exciting and innovative design that enhances Church Street as a major corridor in Lower Manhattan.

## **Selection of a Single Design for the World Trade Center Site**

The LMDC and Port Authority are pleased to join with the City and State and New York in announcing that the Memory Foundations design as developed by Studio Daniel Libeskind has been selected as the design for the World Trade Center site. The Memory Foundations design reconciles the conflicting impulses to preserve the site of the World Trade Center and to rebuild a new skyline. The Libeskind design is imaginative and inspiring, honoring those who were lost while affirming the victory of life, and signaling the rebirth of Lower Manhattan and its iconic skyline. Memory Foundations preserves and reveals the slurry walls of the bathtub of the World Trade Center site as a symbol and physical embodiment of

the resilience of American democracy and freedom in withstanding the attacks of September 11<sup>th</sup>, 2001. A Memorial Garden is created 30 feet below grade as a protected courtyard within the city. While the bathtub contains multiple levels to provide needed long-term structural stability for the slurry walls, it is possible on the west side of the site to descend some 70 feet to observe the massive slurry walls from bedrock to street level. The preserved slurry walls, together with the footprints of the twin towers, create a large, flexible 4.7 acre site for the memorial competition.

An Interpretative Museum sits at the center of the site, which is also one of the entrances to the bathtub Memorial Garden. New cultural facilities and a performing arts center are sited around the bathtub Memorial Garden. At street level, Memory Foundations creates a lively public realm by restoring Greenwich and Fulton streets with a continuous street wall and at-grade retail shops and restaurants—the essence of great Manhattan streets.

At Fulton and West streets, a freestanding building with an antenna on top soars 1,776 feet in the air—a symbolic height for what will be the tallest building in the world. It creates a soaring new skyline that reaffirms the majesty of Lower Manhattan as the heart of New York and the world's second home.

Two grand spaces form entrances to the site. On the east, the Wedge of Light creates a piazza along Fulton Street from the St. Paul's churchyard to the entrance to the Interpretative Museum, a space within which no shadow will fall each year on September 11<sup>th</sup> from 8:46 a.m., the time when the first tower was struck, to 10:28 a.m., the time when the second tower fell. The Fulton corridor reopens west of the Museum as the Park of Heroes, another major new open space.

A phasing plan remarkable for its flexibility ensures that surrounding development can be built over time and as the market and financing demand. New housing is proposed south of Liberty Street to help grow this nascent residential neighborhood.

## **Selected Design Concept Facts**

### **Memorial Definition**

Memorial Garden: 195,700 SF (4.5 acres)

Depth: approximately 30 feet below grade, includes the two footprints

A memorial site at bedrock, approximately 70 feet below grade

A new Liberty Street retaining wall at the south end of the Memorial Garden, 358 feet long, 29 feet high

A translucent glazed north Garden Wall which lines the northern boundary of the footprint of the north tower, 34 feet high, 214 feet long

## **Commercial Development**

### **Option One:**

**TOTAL 10.05 million SF office**  
(8.38 million SF onsite + 1.67 million SF offsite)

**880,000 SF retail onsite**  
(400,000 SF above ground, 480,000 SF below ground)  
60,000 SF retail offsite

Tower 1 (with antenna at 1,776 feet)  
2.60 million SF office  
70 floors, 30,000-40,000 SF footprint  
70,000 SF retail  
Performing Arts Center 45,000 SF footprint (2,000 seats)

Tower 2  
2.05 million SF office  
65 floors, 24,000-34,000 SF footprint  
60,000 SF retail  
560,000 SF hotel (20 stories, 1,000 rooms)

Tower 3  
2.00 million SF office  
60 floors, 25,000-55,500 SF footprint  
135,000 SF retail

Tower 4  
1.73 million SF office  
55 floors, 25,000-54,000 SF footprint  
132,000 SF retail

Tower 5  
1.67 million SF office  
50 floors, 30,000-42,000 SF footprint  
60,000 SF retail

Culture  
280,000 – 380,000 SF museum/culture

### **Option Two:**

**TOTAL 10.00 million SF office onsite**

**880,000 SF retail onsite**  
(400,000 SF above ground, 480,000 SF below ground)

Tower 1 (with antenna at 1,776 feet)  
2.60 million SF office  
70 floors, 30,000-40,000 SF footprint  
70,000 SF retail  
Performing Arts Center 45,000 SF footprint (2,000 seats)

Tower 2  
2.50 million SF office  
70 floors, 27,500-39,000 SF footprint  
60,000 SF retail  
360,000 SF hotel (20 stories, 800 rooms)

Tower 3  
2.60 million SF office  
65 floors, 28,000-55,000 SF footprint  
135,000 SF retail

Tower 4  
2.30 million SF office  
60 floors, 26,000-54,000 SF footprint  
132,000 SF retail

Offsite Tower 5  
1.00 million SF residential  
50 floors, 30,000 SF footprint

Culture  
280,000 – 380,000 SF museum/culture

## **The Next Phase**

The LMDC and Port Authority will work with the selected design team to further develop the details of their design, particularly the Phase One plans for underground transportation infrastructure. This is a critical phase, establishing the public realm that will shape future development on and off the site—the memorial, the streets, parks and public facilities. These aspects of development will generate a private market reaction, signaling that Lower Manhattan has recovered from the events of September 11. The design team will also provide building envelope directions for future commercial and office development.

To ensure that the site is developed consistent with the selected design concept, the stakeholders recognize guidelines must be created to ensure future construction on the site proceeds consistent with the design concepts and the highest standards established for the Innovative Design Study. For example, the guidelines would ensure buildings on the site meet safety and sustainability standards. Such

guidelines will uphold the principles of excellence, safety and sustainable design that served as the foundation of the innovative design competition.

The LMDC and Port Authority will also continue to accept public comment on the design, generally and as part of the environmental review process that will commence by spring 2003.

The LMDC and the Port Authority thank all of the teams who participated in the Innovative Design Study. Collectively, the concepts represent an extraordinary civic contribution made on behalf of numerous design disciplines. New York City, and the nation, is forever indebted to the men and women who offered these designs, each born of hope and forged in democracy.