

## Architectural Fact Sheet

**Project Description** The Broad is a new contemporary art museum founded by philanthropists Eli and Edythe Broad on Grand Avenue in downtown Los Angeles which opened in September of 2015. The museum is designed by Diller Scofidio + Renfro in collaboration with Gensler and offers free general admission. The museum is home to the 2,000 works of art in the Broad collection, which is among the most prominent holdings of postwar and contemporary art worldwide, and has launched an active program of rotating temporary exhibitions and innovative audience engagement. The 120,000-square-foot, \$140-million building features two floors of gallery space and is the headquarters of The Broad Art Foundation's worldwide lending library, which has actively loaned collection works to museums around the world since 1984. In its inaugural year, The Broad museum far exceeded attendance projections, welcoming over 820,000 visitors. Eli and Edythe Broad also built a 24,000-square-foot public plaza, added streetscape improvements and enhanced pedestrian access on and around The Broad along Grand Avenue.

<b>Key Dates</b>	Architect and Site Selection	August 2010
	Design Unveiling	January 2011
	Groundbreaking	March 2012
	Topping Out	January 2013
	Public Opening	September 20, 2015

**Location** 221 S. Grand Avenue, Los Angeles, Calif. 90012

**Leadership** Eli and Edythe Broad, Founders  
Joanne Heyler, Founding Director

**Design Architect** Diller Scofidio + Renfro, New York, N.Y.

**Executive Architect** Gensler, Los Angeles, Calif.

**Museum Total Cost** \$140 million

**Materials** Concrete, steel, fiberglass reinforced concrete, fiberglass reinforced gypsum

**LEED** The Broad received LEED Gold certification. With its electric car charging stations, bike parking spaces, rooftop drains routed to street level gardens that filter runoff, high-efficiency plumbing fixtures that help reduce water use by 40 percent, and its easy access to public transit including adjacency to the new Metro Regional Connector station at the corner of 2<sup>nd</sup> and Hope Streets (anticipated opening: 2020), The Broad aims to be in the top tier of eco-conscious and efficient museums.

### Configuration

*Lower levels* Three-story, 364-space parking garage

*First Floor* Two street-level entrances on Grand Avenue, public lobby, museum shop,

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15,000-square-foot gallery, multimedia space, collection storage, 105-foot escalator to third-floor gallery, cylindrical glass elevator and central stairs to second and third floors

*Second Floor* Collection storage visible to museum visitors through windows in a central stairwell leading from the third-floor galleries down to the first-floor lobby, administrative staff offices, flexible programming space

*Third Floor* 35,000-square-foot, column-free gallery space with filtered natural light from skylights and windows

**Principal Features** Dubbed “the veil and the vault,” the museum’s design merges the two key programs of the building: public exhibition space and the storage that supports The Broad Art Foundation’s extensive lending activities. Rather than relegate the storage to secondary status, “the vault” plays a key role in shaping the museum experience from entry to exit. Its heavy opaque mass is always in view, hovering midway in the building. Its carved underside shapes the lobby below and public circulation routes. Its top surface is the floor of the third-floor galleries.

The vault is enveloped by the “veil,” a porous, honeycomb-like exterior structure that spans across the block-long third-floor gallery and provides filtered natural daylight. The museum’s “veil” lifts at the corners, welcoming visitors into an active lobby and shop. The public is then drawn upwards via escalator, tunneling through the vault, arriving onto nearly an acre of column-free gallery space bathed in filtered light. The gallery has 23-foot-high ceilings, and the roof is supported by 7-foot-deep steel girders. Visitors exit the third floor via a winding central stair through the vault that offers glimpses into the vast holdings of the collection.

## **Additional Building Facts**

### *The Vault*

- 36 million pounds of concrete
- 50,000-square-feet of gallery space including 35,000-square-feet of column-free space on the third floor and 15,000-square-feet of gallery space on the first floor
- 21,000-square-feet of collection storage space
- The second floor concrete slab cantilevers 45-feet over the lobby.

### *The Veil*

- The veil is made primarily of 2,500 glass fiber reinforced concrete (GFRC) panels and 650 tons of steel.
- The veil is supported at three points: the connections on 2<sup>nd</sup> Street and GTK Way, and the major 32-ton, 57-foot-long touchdown beam on Grand Avenue which sits 5-feet below the sidewalk and can support loads of up to 6 million pounds.
- The Grand Avenue touchdown beam can rock along a central pivot point allowing the entire veil structure to slightly “see-saw” back and forth along its plane in the event of a major earthquake. Each end of the beam is allowed to move up and down by three-quarters of an inch.
- The roof includes five 190-foot steel girders weighing approximately 70 tons each.

- The roof has a 40-foot cantilever over the third-floor gallery.
- The roof includes 318 skylight monitors with glazed openings to harvest diffused sunlight coming from the north.
- 380 different molds were used for the GFRC panels of the veil.
- 30 percent of the total veil molds are used solely to form the “oculus” portion of the veil to create its intensely curved shape which indents the veil into the building and the vault.
- The average GFRC veil panel weighs around 1,100 lbs.
- Veil countries of manufacture: Germany, Czech Republic, USA

### *Glazing*

- The lobby includes 37 glass panels that are 20 feet by 5 feet, 6 inches, weighing 2,198 pounds each.
- The Oculus Hall includes seven glass panels that are 16 feet, 5 inches by 5 feet, weighing 2,044 pounds each.
- The galleries include 52 glass panels that are 24 feet, 10.5 inches by 4 feet, 11 inches, weighing 4,881 pounds each.
- Glass countries of manufacture: Germany, Austria, USA, Mexico (elevator hoistway glass)

### *Parking Garage*

- 155,000-square-foot, three-story subterranean parking garage
- 364 parking spaces

## **The Broad Design and Construction Team**

### *Diller Scofidio + Renfro*

Elizabeth Diller, Principal-in-Charge; Ricardo Scofidio and Charles Renfro, Principal Designers; Kevin Rice, Project Director; Team: Kumar Atre, Oskar Arnorsson, Ryan Botts, John Chow, Gerardo Ciprian, Robert Condon, Zachary Cooley, Charles Curran, Robert Donnelly, Eliza Higgins, Christopher Hillyard, Michael Hundsnurscher, Matthew Johnson, Robert Loken, Nkiru Mokwe, William Ngo, Matthew Ostrow, Haruka Saito, Daniel Sakai, Andrea Schelly, Anne-Rachel Schiffmann, Zoe Small, Quang Truong

### *Gensler*

Rob Jernigan, Principal-in-Charge; David Pakshong, Project Director; Wendi Gilbert, Project Architect; Team: Brianna Seabron, Nora Gordon, Greg Kromhout, Yasushi Ishida, Arpy Hatzikian, Marty Borko, Philippe Paré, Robyn Bisbee, Melanie McArtor, Patrice Hironimus, Valentin Lieu, Yupil Chon, Brenda Wentworth, Jae Rodriguez, Robert Garlipp, Jay Hardin, Alexis Denis, Ricardo Moura, Lauren Gropper, Steven Hergert, Pavlina Williams, Evangelique Zhao, Sebastian Mittendorfer, Scott Carter

### *Construction*

MATT Construction, Santa Fe Springs, Calif.

### *Structural Engineer*

Nabih Youssef Associates, Los Angeles, Calif.  
Leslie E. Robertson Associates, R.L.L.P., New York, N.Y.

### *Civil Engineer*

KPFF Consulting Engineers, Los Angeles, Calif.

### *Mechanical, Electrical, Plumbing, Fire*

ARUP, Los Angeles, Calif.

## *Life-Safety and Gallery*

<i>Lighting Engineers (Galleries)</i>	ARUP, London, U.K.
<i>Lighting Design (Exclusive of Galleries)</i>	Tillotson Design, New York, N.Y.
<i>Vertical Transportation</i>	Lerch Bates Associates, La Crescenta, Calif.
<i>Collection Storage</i>	Solomon + Bauer + Giambastiani, Watertown, Mass.
<i>Security</i>	Ducibella Venter + Santore, North Haven, Conn.
<i>Waterproofing</i>	Simpson Gumpertz & Heger, Los Angeles, Calif.
<i>Graphic Design</i>	2 x 4, New York, N.Y. and Keith & Co., Los Angeles, Calif.

## **Public Plaza, Restaurant and Grand Avenue Streetscape**

*Description* Public amenities associated with The Broad include an adjacent 24,000-square-foot public plaza, Otium, a new restaurant developed by Sprout LA and Chef Timothy Hollingsworth, a new mid-block traffic signal and crosswalk connecting The Broad and public plaza with MOCA and the Colburn School and additional streetscape improvements. The plaza's bosque of 100-year-old Barouni olive trees and grass create public space for picnics, performances and educational events. Pedestrians can use wide stairs and an elevator at the Hope Street end of the plaza to access Hope Street and the planned 2<sup>nd</sup> and Hope Street Metro Regional Connector station. Plans for a pedestrian bridge to connect the station to the plaza are also in the works.

### *Principal Features*

- The 24,000-square-foot plaza is supported by 18 pre-cast concrete or steel columns, seven girders and seven secondary beams made up of composite pre-cast and reinforced concrete or steel over GTK Way.
- Plaza surfaces include decomposed granite, etched concrete paving, Saint Augustine grass lawn and flowering groundcover.
- New mid-block traffic signal and crosswalk connecting east and west sides of Upper Grand Avenue, planted median and new traffic lane striping
- Widened sidewalks on western side of Grand Avenue

### *Plantings*

- A bosque of 100-year-old Barouni olive trees on the plaza
- Nodding Pincushion planters along residential tower
- Saint Augustine grass
- Dymonida sedum
- Chinese Pistache trees along Grand Avenue between 2<sup>nd</sup> and 3<sup>rd</sup> streets
- Young olive trees flanking pedestrian crosswalk and on Grand Avenue median
- Architectural planters in front of The Broad with succulents

### *Lighting*

- Up-lit trees on plaza and in crosswalk
- New LED street lights

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- In-ground up-lights along Grand Avenue
- Street lighting below the plaza

*Plaza &  
Streetscape Costs*                      \$18 million

*Project Partners*

- Design Architect: Diller Scofidio + Renfro
- Executive Architect: Adamson Associates
- Landscape Architect: Hood Design (Walter J. Hood)
- Construction: MATT Construction
- Lighting: Tillotson Design Associates
- Structural: Saiful / Bouquet Structural Engineers (Tom Bouquet)
- Civil: KPFF Consulting Engineers (Rick Davis)
- Traffic Engineers: Crain & Associates

**About Diller Scofidio + Renfro**

Diller Scofidio + Renfro is an international design firm that spans architecture, the visual arts and the performing arts. The studio established its identity through experimental large-scale installations, curatorial and performance projects and works in media and print.

DS+R is led by three partners—Elizabeth Diller, Ricardo Scofidio and Charles Renfro—who work collaboratively with a team of designers, artists and architects on the design of each project. For their commitment to merging art and architecture with issues of contemporary culture, founding partners Elizabeth Diller and Ricardo Scofidio were recognized by the MacArthur Foundation “genius” award, the first given in architecture.

Recent and ongoing architecture projects include the High Line park, redevelopment of Lincoln Center for the Performing Arts, the expansion of The Museum of Modern Art, and the new start-up Culture Shed, all in New York; the Institute of Contemporary Art, Boston; the Museum of Image and Sound, Rio de Janeiro; Zaryadye Park, Moscow; and the United States Olympic Museum, Colorado Springs. The studio’s recent art projects include *Musings on a Glass Box* for the Fondation Cartier and *Charles James: Beyond Fashion* at the Metropolitan Museum of Art.