

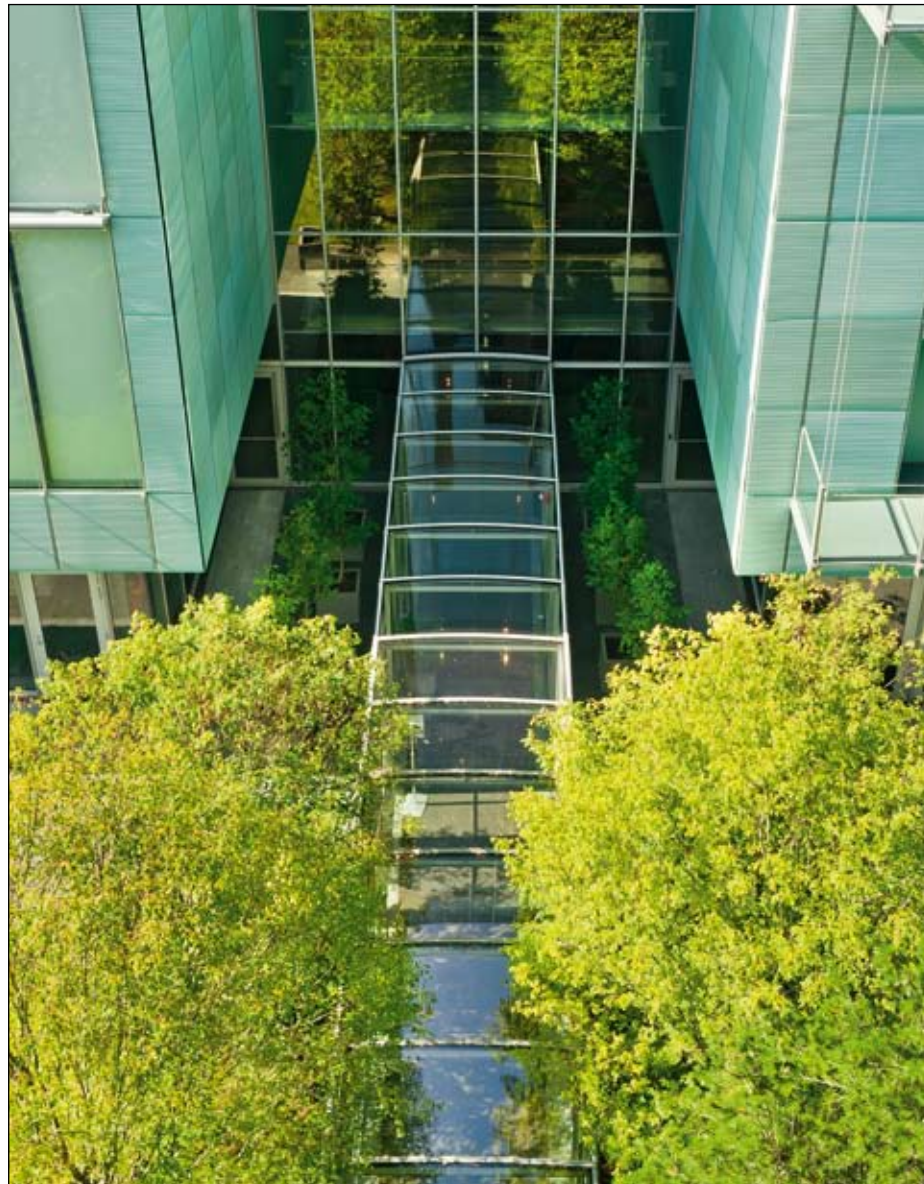


A work of art...

...built of glass, steel and copper

Renzo Piano's new wing of the Isabella Stewart Gardner Museum

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A 'glass umbilical cord' connects Renzo Piano's extension to the historic palace that houses the rest of the Isabella Stewart Gardner Museum in Boston. Visitors approach the museum's new wing via this narrow, glass-enclosed corridor. Its copper-clad glass architecture can even be considered a work of art in itself. The new building stands at a respectful distance from the Venetian palace that it pays homage to. The highly transparent glass façades bathe the enclosed paintings and sculptures in pure, natural light.

The people of Boston showed an instant affection for the building, selecting it in 2012 for the People's Choice Award of the Harleston Parker Medal, as 'the single most beautiful building or other structure' to be built in the Metropolitan Area of Boston in the last ten years.

Museum of contemporary art, flooded with natural light, wins LEED Gold award

The several-part extension to the Isabella Stewart Gardner Museum in Boston was opened on January 19, 2012, the same date on which the old building – constructed in the style of a Venetian palace – first opened its doors in 1903. The new buildings are flooded in daylight, and fulfil the energy requirements of the LEED gold standard set by the United States Green Building Council. The building's sustainable architecture centres on its use of daylight and geothermal energy along with water-saving gardening and landscaping techniques.

The glazed, copper-clad extension will house the new contemporary art section of what is one of the most significant private art collections in North America. The museum was founded by Isabella Stewart Gardner (1840-1924), an influential and well-travelled art collector. Today, this fine collection numbers more than 2,500 examples of European, Asian and American art.

On March 18, 1990, the museum caused a major stir all round the world when a number of its exhibits were stolen. The crime – which has never been solved – was committed by two men disguised as police officers, who robbed the museum of 13 paintings with a combined estimated value of 300 million dollars, including works by Vermeer ('The Concert'), Rembrandt, Manet and Degas.



New glass construction with green copper cladding

The Italian architect Renzo Piano has positioned the new building opposite the Palace, where it exudes an air of independence, while giving dutiful reverence to the main building. He conceives the two buildings as communicating with each like 'the great nephew to the great grand aunt'. Piano responds to the Palace's splendid inner courtyard with its alternating arrangements of tropical and subtropical plants and flowers by creating a greenhouse connected to the complex, with artists' accommodation on the upper floor.

The trustees of the estate are required to comply with the original benefactor's precise instructions. One such requirement is that no changes may ever be made to the way the works are hung or otherwise presented. This means that to this day, no other works can be displayed in the space where the paintings were stolen from in 1990. All that can be seen are the empty frames from which the paintings were cut, leaving gaps that are highly and painfully visible.

A complex for exhibitions, concerts, shops and classes

The new wing comprises a lobby with the adjacent greenhouse, a main building consisting of four sections, and the glass 'link' to the old building. In creating his extension, Renzo Piano has moved the entrance to the museum from its former position on the eastern side of the complex on the Fenway to the glazed southern side of the museum on Evans Way. The new construction contains an exhibition building, a concert hall, a shopping mall and an education centre. The aim of the new building is not only to widen the scope of what is on offer but also to protect the old building from the growing crowds of visitors. The complex is characterised by its high level of transparency, produced by maximising the use of glass elements, in combination with the complex's striking green copper cladding. The building attains its typical structure through its consistent application of a four-foot standard grid dimension. This regular grid gives the new wing a structure that is at the same time harmonious and uniform. All of the building's façades were planned by Josef Gartner GmbH from Gundelfingen in

Germany, along with its American subsidiary. The steel transom/mullion façades, including the copper-clad cold façade, have a total area of approximately 5,500m².

In addition to its public choice award as a beautiful building, the four-section complex also won one of the 'Copper in Architecture Awards', which both the architect and the facade builders, Gartner also won in 2012.

New four-part building with glass, steel and copper façades and glass roof constructions

The new wing is composed of four individual buildings, separated by a corridor, staircase and lift shaft. Upon entering the complex through the new glazed entrance on the southern side, the visitor is welcomed by a brief view of the Palace and its historical gardens as he approaches the exhibition building that houses the contemporary art collection, and whose eastern front with its large windows affords a good view of the old Palace. Adjacent to the exhibition section is the café with the music hall above. The hall seats 300 persons, with three balcony levels surrounding the stage. The exhibition and café



buildings are separated by a courtyard that opens out to the garden only, and through which the corridor between the old and new buildings runs.

A special feature of these two buildings are the steel and glass roofs with fixed louvers in the cavity of the glazing, allowing natural light to penetrate the interior of the building. The roof has an area of 120m² and is slightly inclined to allow rainwater to drain away. A total of nine glass pyramids are installed beneath the glass roof of the music and event hall, each with a base area of 1.82x1.82m and a height of 34.5cm (tip over base). These pyramids were developed by the façades builder together with the architect and the acoustics engineers, to enhance the room's acoustic properties and to create a striking optical feature. The filigree steel stick construction is made from double-laminated safety glass. Four of these pyramids can be swivelled down with a motor-driven rope for cleaning and maintenance purposes.

Pre-patinated copper cladding panels
These two east-lying buildings – whose

central corridor leads to the old building situated opposite – adjoin, on the west side, the south-lying museum shop and north-lying building containing the classroom offices.

The south and north fronts of the building complex are completely clad in pre-patinated copper panelling above the glazed ground floor level. Similarly, pre-patinated copper cladding has been placed around the windows on the west and east sides of the complex. Immediately after their completion, the surface of the building complex was already shimmering in a natural copper-green hue, which would have taken decades to form under normal weather conditions. Fire escapes have been built onto three of the building's six sides, to the south, north and west, consisting of glass-edged metal-grate steps.

The main building contains a total of 1,300m² of steel mullion/transom façades and 2,150m² of copper-clad cold façades. The mullions and transoms are painted with a RAL 9006 wet coating.

Lobby and Greenhouse: glass façade with sunshades and grilles

The entrance in the Evans Way leads into the lobby, which lies like a transom in front of the south side. The slant-surfaced greenhouse is located in the extension of the lobby to the west.

The lobby is built from architecturally exposed structural steel. The steel mullion/transom façade attached to it has a total area of 1,400m². A specially made aluminium grille with inclined fins is mounted above the glass roof of the lobby to provide shade.

The mullion/transom façade of the greenhouse runs diagonally backwards at an angle of 45 degrees, enclosing sunshades made of fabric curtain, and behind which stands the four-metre-high museum greenhouse itself. The three-metre-high artist accommodation ateliers are located directly above, terminated at their rear by a vertical brick wall. The sunshades on the atelier façade are external and made of weatherproof fabric. Three rows of steel grilles positioned externally above the glass panelling help to

keep the greenhouse in shade. The total area of the greenhouse façade is 370m².

Glazed link to the arched glass roof

The ground-level transition from the old Palace to the new building complex is known as the 'link' and is 23 metres long, 2.70 metres high and 2.50 metres wide. Renzo Piano himself has compared it to an umbilical cord. The side walls comprise a steel mullion/transom façade with an area of around 120m², in four-foot grid units. The 60m²-high roof is made of hot-formed curved glass, glued and fixed in place in line with the grid size, using silicon joints and pressure beads. Doors are positioned to the right and left about half way along. If required, these can be opened and lead to the garden. The link continues as a passageway through the entire building complex with a steel-glass façade.

Double insulating glass with Low-E plus individual special glazing sections

The mullion/transom façade that forms the major part of the building surface is double-glazed using low-E and solar control glass. The external panels are up to 3.65 metres high and made of 6mm-thick toughened, low iron, safety glass. The 12mm cavity is filled with argon and has got stainless steel spacers. The inner pane is composed of 13.52mm laminated safety glass with a cavity of 6mm, a 1.52 PVB interlayer and 6mm, low iron glazing.

The curved glazing in the roof of the link was supplied by Sunglas from Italy, while the roof glazing of the exhibition and music hall was provided by BGT from Germany. All other glazing was supplied by Viracon US.

The typical glazing has a visible light transmission of 72%, a glass shading coefficient of 0.44 and a U-value of 1.2 W/m²K.

The sunshades in the greenhouse and artist accommodation area are made of fabric curtain material and were supplied from within the USA. Shade is otherwise provided by steel grilles for the greenhouse and aluminium grilles for the lobby.

Production, logistics and assembly

With the exception of the glass, which was produced in the USA and Italy, all the façades were planned and manufactured



in Gundelfingen. Planning commenced in July 2009, with production performed by Gartner between April and December 2010. Beginning in the summer, the façades were transported to the USA by ship in containers and assembled between July 2010 and May 2011. They were taken to the construction site by truck. Two special façades with lengths of over 12 metres were transported on ro-ro frames.

Architectural highlight of a city under reconstruction

The new wing of the Gardner Museum represents the second highlight of Boston's new glass architecture, following the 'Art of the Americas Wing' in the neighbouring Museum of Fine Arts by Norman Foster. The fascinating combination of the glass museum wing with the stone Palace is evidence of

the re-awakened dynamism that the city on the American east coast has experienced over the last decade, with the completion of the 'big digs', the tunnels beneath the city's downtown area.

Bautafel

Isabella Stewart Gardner Museum
Boston, MA (USA)

Bauherr / Owner:

Isabella Stewart Gardner Museum, Boston, MA

Architekt / Architect:

Renzo Piano Building Workshop, Genova; Burt Hill, Boston, MA

Auftraggeber und Bauleitung / Client and Site Management:

Shawmut Design and Construction, Boston, MA

www.buildingproject.gardnermuseum.org