Jewish Museum Berlin
“The Jewish Museum is conceived as an emblem in which the Invisible and the Visible are the structural features which have been gathered in this space of Berlin and laid bare in an architecture where the unnamed remains the name which keeps still.”--Daniel Libeskind
Location: Berlin, Germany

Design: Daniel Libeskind

Competition: 1989

Completion: 1999

Opening: 2001

Client: Land Berlin

Net Area: 120,000 sq. ft.

Structure: Reinforced Concrete with Zinc Facade

Building Cost: USD 40.05 million

Four Story Building

Shortest Elevation Parallels and Breaks the Lindenstrasse frontage: and entrance to the site.

Overview
The Jewish Museum Berlin was originally founded on Oranienburger Straße in 1933. It was closed in 1938 by the Nazi regime.

The idea to revive the museum was first voiced in 1971, and an “Association for a Jewish Museum” was founded in 1975.

Competition for the design of the new building was held in 1989, building was completed in 1999 but officially opened in 2001.

The aim of the project was a critical reconstruction of the historical city plan, using contemporary architectural means.

An international jury headed by Josef Paul Kleihues reviewed 165 submissions and awarded first prize to Daniel Libeskind.
The Jewish Museum marks a special point on the map of Berlin. It is located at the intersection of Markgrafenstrasse and Lindenstrasse, lying on the edge of Friedrichstadt.

Markgrafenstrasse, paralleling Friedrichstrasse, connects the main museum with Gendarmenmarkt, the most important square in the former Royal Residence.

The area exhibits a compelling key of historical buildings and architectural styles consisting of Karl Schinkel’s Schauspielhaus, or Theater, Carl von Gontard’s two tower structures, and Daniel Libeskind’s Jewish Museum.

The location is an area near the Wall: These designs try to help create a new language for Berlin while responding to the fragmentation and segregation of the area.
1. The site is the new-old center of Berlin on Linderstrasse. Libeskind at the same time felt there was an invisible matrix of connections between the figures of Jews and Germans.

   Libeskind plotted an “irrational matrix” which resembled a distorted star: the yellow star that was worn often on this very site.

2. To complete the opera by Schonberg: “Moses and the Aaron” architecturally.

3. To give dimension to the deported and missing Berliners.

   Libeskind inspired by the ‘Gedenbuch’ which contains all the names, dates of births, and places/dates of deportation and/or deaths.

4. Incorporated Walter Benjamin’s text ‘One Way Street’ into the continuous sequence of 60 sections along the zigzag, each representing the ‘Stations of the Star’.
The Jewish Museum goes under the existing building and crisscrosses underground.

Externally the buildings are independent of one another.

Three Underground ‘roads’ are programatically different:

1. The longest road leads to the main stair, to the exhibition spaces of the Jewish Museum.

2. Leads to the exterior Hoffman Garden and represent exile of the Jews from Germany.

3. Leads to the dead end: the Holocaust Void.

Cutting through the form of the Jewish Museum is a void, a straight line forms the space the exhibitions are organized around.

Visitors cross sixty bridges to cross from one space to another.

Zig-Zag best describes the form: two linear structures, combined to form the body of the building.
It is a museum for all Berliners, all citizens.

It is an attempt to give a voice to a common fate.

The extension is conceived as an emblem of Hope.

The void and the invisible are the structural features.

In terms of the city, the idea is to give new value to the existing context.
The Voids represent the central structural element of the New Building.

From the Old Building, a staircase leads down to the basement through a Void of bare concrete which joins the two buildings.

Five Voids run vertically through the new building.

Walls of bare concrete: not heated or air conditioned.

Largely without artificial light.
The Garden of Exile reached after leaving the second axis.  

Forty-nine concrete stalea rise out of the square plot.

The whole garden is 12° gradient meant to disorient visitors with a sense of total instability and lack of orientation.

Those driven out of Germany.

Oleaster grows on top of pillars: symbolizing hope.
The Axis of the Holocaust leads through a heavy black steel door into the Holocaust Tower. It is a void outside the museum building. It is a bare concrete tower 24 meters high. It isn’t heated, airconditioned, or insulated. It is lit by a single narrow slit high above the ground. Noises from the outside can be heard. The bare and empty tower pays tribute to the numerous Jewish victims of mass murder.
Elevations
Structural members are made externally visible within the zinc cladding.

Provides a sheathed building with a tectonic connotation.

There is not
   earthwork
   hearth
   roof
   framework
   lightweight enclosing member

Zinc clad monolith remains tectonic and solid

The structure seems to sit lightly on the surface of the park

The detailed zinc cladding lightens the critical mass of the object.

In time the shine of the zinc will dull down to blue-grey.
Libeskind got the idea to use zinc from Schinkel

In Berlin untreated zinc turns a beautiful blue-gray

Materials used enabled Libeskind to bring the total cost below the original budget

Libeskind’s obsessive perfectionism of the detail is everywhere evident
  Secondary steps
  Stair Parapets
  Handrails

Lighting systems tracked within preplanned recesses in ceilings

Overall, ordinary materials and products were used
Cross section showing relationship of museum and Holocaust Tower
The Jewish Museum has sharp, angular shards, with gravity-defying walls. Libeskind reproduces the horridity of the Concentration camps by using high-tech materials to define a specific geometry. This geometry is intended to make you feel physically ill and recreates the terrible purpose behind the camps. The structural engineers brought tangible order and form to a building sized sculpture through structural, geotechnical and civil building services. Some of the interior walls are sloped at angles so acute it’s impossible to hang artwork. Libeskind makes it impossible to perceive the whole structure in standard terms: invisible almost.
Due to the severely angled walls in some locations it was decided that a steel reinforced concrete building would be the structure.

Precast and cast-in-place concrete elements form a tubelike structure with a variable inclination.

The Project used various cladding materials: metal, glass, and zinc.

Foundation: a reinforced concrete base resting on the plain concrete base.

Beams and Columns: They are made of reinforced concrete transfer lateral loads.

Floor Slab: It is made of reinforced concrete are supported by the concrete beams.

Stairs: They are made out of reinforced concrete connecting the levels.
The exterior walls are made of in-situ concrete and had to be poured into a mold.

The interior walls, doors, and windows are the non-structural elements of the building.

An advantage of using skeleton reinforced concrete in the Jewish Museum is the openings of the windows or doors could be made at any width and height.

There are also no columns to allow for larger, uninterrupted spaces.

The concrete is reinforced to give it extra strength, without the reinforcement the museum would collapse.

Both precast concrete and in-situ concrete were used in the construction of the museum.

The reinforcement bars are well bonded to the concrete to resist tension forces.
Steel is used to carry some of compressive load as well as the tensile load—occurs mostly in the columns.

The beams and slabs have reinforcing on all their faces to tie concrete together and prevent cracking.

Special attention paid to the floor which required additional reinforcement.

The floor acts as tension ties for the angled walls.

The lateral loads were taken to the ground through the building’s lateral load system:

- Reinforced concrete walls, beams, and columns

The timing of the frame removal relative to the placement of concrete slabs had significant effect on the final stresses on the structure.

Load cases include loads from wet concrete slab pours, cured concrete slabs, and frame removal.
Many difficulties involved in constructing the skeleton.

The greatest problem was casting the high concrete walls in one piece, controlling the cement flow and the resulting enormous pressure on the forms and monitoring dimensional deviations.

The museum became a model project in which to test new methods of handling concrete.

The exterior walls posed a special difficulty, in that the concrete had to be poured in such a way that it completely encased the molds for the complicated window opening on the first attempt.
The reinforcement bars became a geometric challenge. The builders showed their skill of dealing with the concrete by connecting temporary downpipes through window openings to allow the poured concrete to reach otherwise inaccessible points.

One thing that has been lost from the original scheme are the inclined walls of the zig-zag, partly out of cost grounds and partly because the form had more than enough strength without the further excess.

The in-situ concrete walls have also become somewhat subdued from the original mosaic concept and are clad in zinc.
Close-up of the zinc clad exterior of the museum.

The windows bear no relationship to the division of floors within the building.

A corner of the Holocaust Tower

The Holocaust Tower, a concrete, freestanding structure

Extra Photos
The structure of this building goes far beyond the physical realm.

It addresses the social structure of Berlin and the absence of Jews in Berlin.

Libeskind creates a dialogue between the past and the present of the Holocaust, and

Most importantly, Libeskind poses the question, how do we deal

with the scars from the past?

Final Thought


