

No. 230
Elbphilharmonie Hamburg
Hamburg, Germany
Concept 2001, Concept Phase 2003
Project 2004-2014, Realization 2006-2016

PROJECT KEY DATA

| | |
|------------------------------|---|
| Project Number | 230 |
| Project Name | Elbphilharmonie Hamburg |
| Location | Platz der Deutschen Einheit 1-5, Hamburg, Germany |
| Project Phases | Concept Design 04/2003 Schematic Design 10/2004 - 04/2005 Design Development 10/2005 - 06/2006 Construction Documents 06/2006 - 07/2014 Construction Services 04/2007 – 10/2016 |
| Milestones | Ground Breaking / Foundation Stone 02/04/2007 Topping-off 28/05/2010 Construction Start 03/2007 Start Realigned Project 09/04/2013 |
| Client | Freie und Hansestadt Hamburg, Germany |
| Client Representative | Elbphilharmonie Hamburg Bau GmbH & Co. KG represented by ReGe Hamburg Projekt-Realisierungsgesellschaft mbH, Hamburg, Germany |

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PROJECT TEAM

Herzog & de Meuron Project Team

Partners: Jacques Herzog, Pierre de Meuron, Ascan Mergenthaler (Partner in Charge), David Koch (Partner in Charge Project Management)

Project Team: Jan-Christoph Lindert (Associate, Project Director), Nicholas Lyons (Associate, Project Architect), Stefan Goeddertz (Associate, Project Architect), Christian Riemenschneider (Associate, Project Manager), Henning Severmann (Project Manager), Stephan Wedrich (Associate, Project Director until 2012), Carsten Happel (Associate, Project Manager)

Birgit Föllmer (Project Manager Main Concert Hall), Kai Zang (Project Manager Detailing New Building and Small Hall), Peter Scherz (Project Manager Granary, Kaistudio), Jan Per Grosch (Project Manager Envelope)

Christiane Anding, Thomas Arnhardt, Petra Arnold, Christian Baumgarten, Tobias Becker, Johannes Beinhauer, Uta Beissert, Lina Mareike Belling, Andreas Benischke, Inga Benkendorf, Christine Binswanger (Partner), Johannes Bregel, Francesco Brenta, Jehann Brunk, Julia Katrin Buse, Ignacio Cabezas, Jean-Claude Cadalbert, Maria Christou, Sergio Cobos Álvarez, Massimo Corradi (Digital Technologies), Guillaume Delemazure, Annika Delorette, Fabian Dieterle, Annette Donat, Philipp Doukakis, Patrick Ehrhardt, Carmen Eichenberger, Stephanie Eickelmann, Magdalena Agata Falska, Daniel Fernández, Stephan Flore, Hans Focketyn, Bernhard Forthaus, Andreas Fries, Asko Fromm, Florian Gast, Catherine Gay Menzel, Marco Gelsomini, Ulrich Grenz, Jana Grundmann, Hendrik Gruss, Luis Guzmán Grossberger, Christian Hahn, Yvonne Hahn, Naghmeh Hajibeik, David Hammer, Michael Hansmeyer, Nikolai Happ, Bernd Heidlindemann, Anne-Kathrin Hellermann, Magdalena Hellmann, Lars Höffgen, Philip Hoglebe, Ulrike Horn, Robert Hösl (Partner), Michael Iking, Ina Jansen, Nils Jarre, Damun Jawanrudi, Jürgen Johner (Associate), Leweni Kalentzi, Julia Kniess, Andreas Kimmel, Anja Klein, Frank Klimek, Alexander Kolbinger, Benjamin Koren, Tomas Kraus, Jonas Kreis, Nicole Lambrich, Jana Lasorik, Matthias Lehmann, Monika Lietz, Julian Löffler, Philipp Loeper, Thomas Lorenz, Christina Loweg, Florian Loweg, Xiaojing Lu, Femke Lübcke, Tim Lüdtker, Lilian Lyons, Jan Maasjosthusmann, Janos Magyar, Klaus Marten, Petrina Meier, Götz Menzel,

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Alexander Meyer, Simone Meyer, Henning Michelsen, Alexander Montero Herberth, Felix Morczinek, Jana Münsterteicher, Christiane Netz, Andreas Niessen, Monika Niggemeyer, Mònica Ors Romagosa, Argel Padilla Figueroa, Benedikt Pedde, Sebastian Pellatz, Malte Petersen, Jorge Manuel Picas de Carvalho, Philipp Poppe, Alrun Porkert, Yanbin Qian, Robin Quaas, Julian Raffetseder, Holger Rasch (Digital Technologies), Leila Reese, Chantal Reichenbach, Leonard Reichert, Thorge Reinke, Ina Riemann, Nina Rittmeier, Dimitra Riza, Miguel Rodríguez Martínez, Guido Roth, Christoph Röttinger, Patrick Sandner, Philipp Schaerer (Digital Technologies), Chasper Schmidlin, Alexandra Schmitz, Martin Schneider, Leo Schneidewind, Malte Schoemaker, Katharina Schommer, Helene Schüler, Katrin Schwarz, Gerrit Christopher Sell, Heeri Song, Nadine Stecklina, Markus Stern, Sebastian Stich, Sophie Stöbe, Stephanie Stratmann, Kai Strehlke (Digital Technologies), Ulf Sturm, Stefano Tagliacarne, Anke Thestorf, Henning Többen, Kerstin Treiber, Florian Tschacher, Chih-Bin Tseng, Jan Ulbricht, Inga van Husen, Florian Voigt, Jonathan Volk, Maximilian Vomhof, Constance von Rège, Christof Weber, Ruth Maria Weber, Catharina Weis, Philipp Wetzler, Douwe Wieërs, Julius Wienholt, Julia Wildfeuer, Boris Wolf, Patrick Yong, Xiang Zhou, Bettina Zimmermann, Marco Zürn

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PLANNING

General Designer

Joint Venture Arbeitsgemeinschaft Planung Elbphilharmonie:

- Herzog & de Meuron GmbH, Hamburg, Germany
- H+P Planungsgesellschaft mbH & Co. KG, Aachen, Germany
- Hochtief Solutions AG, Germany

ARGE Generalplaner Elbphilharmonie, Hamburg, Germany (2005-2013)

- Herzog & de Meuron AG, Basel, Switzerland
- Höhler + Partner Architekten und Ingenieure, Aachen, Germany

Electrical Engineering

Hochtief Solutions AG, Germany

ARGE Generalplaner Elbphilharmonie, Hamburg, Germany (2005-2013)

- Winter Ingenieure, Hamburg, Germany
- General Contractor Adamanta - Hochtief Solutions (Construction Documents / Planning), Hamburg, Germany

HVAC Engineering, Mechanical, Plumbing

Hochtief Solutions AG, Germany

Knott & Partner Ingenieure VDI, Berlin, Germany

Müller + Partner, Braunschweig, Germany

C.A.T.S. Computer and Technology Service GmbH, Darmstadt, Germany

ARGE Generalplaner Elbphilharmonie, Hamburg, Germany (2005-2013)

- Winter Ingenieure, Hamburg, Germany
- General Contractor Adamanta - Hochtief Solutions (Construction Documents / Planning), Hamburg, Germany

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Structural Engineering

Hochtief Solutions AG, Germany

2005-2013:

- WGG Schnetzer Puskas Ingenieure AG, Basel, Switzerland
- Rohwer Ingenieure VBI GmbH, Jarplund-Weding, Germany

Structural Engineering Brick Facade 2005-2013

Jäger Ingenieure, Radebeul, Germany

Signage

Herzog & de Meuron GmbH with Integral Ruedi Baur, Zürich, Switzerland

Hochtief Solutions AG, Germany

Signage Consulting 2005-2013

Ruedi Baur, Zürich, Switzerland

Signage Planning 2005-2013

ARGE Generalplaner Elbphilharmonie, Hamburg, Germany

Sprinkler

Ittega GmbH Ingenieurbüro für technische Gebäudeausrüstung, Hann. Münden, Germany

Hochtief Solutions AG, Germany

3-D Modelling

Herzog & de Meuron GmbH, Hamburg, Germany

Hochtief Vicon, Essen, Germany

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CONSULTING

Acoustics

Nagata Acoustics Inc., Los Angeles / USA, Tokyo / Japan

Building Physics

MF Dr. Flohrer Beratende Ingenieure GmbH, Berlin, Germany
Hochtief Solutions AG, Germany

Building Physics 2005-2013

Taubert und Ruhe GmbH, Halstenbek, Germany
Jäger Ingenieure, Radebeul, Germany
TU Dresden, Dresden, Germany
GWT, Dresden, Germany
ARGE Generalplaner Elbphilharmonie, Hamburg, Germany
General Contractor Adamanta - Hochtief Consult, Essen, Germany

Vertical Transportation

Jappsen Ingenieure GmbH, Berlin, Germany

Fire Protection, Site Supervision

Hahn Consult Ingenieurgesellschaft, Hamburg, Germany

Fire Safety Planning (2005-2013)

HHPNord/Ost Beratende Ingenieure GmbH, Braunschweig, Germany
Hahn Consult Ingenieurgesellschaft, Hamburg, Germany
ARGE Generalplaner Elbphilharmonie, Hamburg, Germany
General Contractor Adamanta (Construction Documents / Planning), Düsseldorf, Germany

Crowd Flow

Happold Ingenieurbüro GmbH, Berlin, Germany
Arbeitsgemeinschaft Planung Elbphilharmonie

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Facade Maintenance Strategy

Univ.-Prof. Dr.-Ing. Manfred Helmus Ingenieurpartnerschaft, Wuppertal, Germany

Noise Control

Taubert und Ruhe GmbH, Pinneberg, Germany

Restoration Brick Facade

Jäger Ingenieure GmbH, Radebeul, Germany

TU Dresden, Dresden, Germany

SAA Consulting - Audio/Video

Peutz Consult GmbH, Düsseldorf, Germany

ADA, Ahnert Design Acoustic, Berlin, Germany

Thermal Simulation (Main Concert Hall)

Ingenieurbüro Hausladen GmbH, Kirchheim, Germany

in cooperation with Prof. Bjarne W. Olesen, Technical University of Denmark , Lyngby, Denmark

Wind Engineering Consultants

Wacker Ingenieure, Birkenfeld, Germany

Facade Engineering 2005-2013

R+R Fuchs, Munich, Germany

Climate Consulting 2005-2013

Transsolar, Stuttgart, Germany

Interior Design Hotel / Gastronomy 2005-2013

General Contractor Adamanta, Düsseldorf, Germany

MRLV, Hamburg, Germany

Aukett und Heese, Berlin, Germany

Bost Design, Berlin, Germany

Formwaende GmbH & Co. KG, Lüneburg, Germany

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Scenography Consulting

ARGE Planung Elbphilharmonie, Hamburg, Germany

BAA Projektmanagement GmbH, Oberhausen, Germany

Generalplaner Elbphilharmonie, Hamburg, Germany

- Ducks Sceno, Lyon, France

General Contractor Adamanta (Construction Documents / Planning), Düsseldorf, Germany

- GCA Ingenieure, Unterhaching / Berlin, Germany

Traffic Planning 2005-2013

ARGE Generalplaner Elbphilharmonie, Hamburg, Germany

Ing.-Ges.mbH Heimann, Hannover, Germany

Transport Planning 2005-2013

ReGe Hamburg - ARGUS Stadt- und Verkehrsplanung, Hamburg, Germany

Vertical Circulation Consulting 2005-2013

Jappsen Ingenieure, Berlin, Germany

Vertical Circulation Planning 2005-2013

ARGE Generalplaner Elbphilharmonie, Hamburg, Germany

Well Drilling Consulting 2005-2013

IGB Ingenieurgesellschaft, Hamburg, Germany

Well Drilling Planning 2005-2013

ARGE Generalplaner Elbphilharmonie, Hamburg, Germany

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CONTRACTORS

General Contractor

Adamanta Grundstücks-Vermietungsgesellschaft mbH & Co. Objekt Elbphilharmonie KG, Düsseldorf, Germany
Represented by Hochtief Solutions AG, Essen, Germany

Facility Management

SPIE GmbH, Hamburg, Germany

Investor Consortium

Adamanta Grundstücks-Vermietungsgesellschaft mbH & Co. Objekt Elbphilharmonie KG, Düsseldorf, Germany,
represented by Commerz Real AG, Hamburg Branch, Germany

Interior Design Residential

Skyliving GmbH & Co KG, Oststeinbeck, Germany
General Contractor Hochtief Solutions AG, Essen, Germany

Interior Design Architect Residential

Antonio Citterio and Partners, Milan, Italy

Lighting (Collaboration) 2005-2012

Ulrike Brandi Licht, Hamburg, Germany

Lighting Planning

ARGE Planung Elbphilharmonie, Hamburg, Germany
ARGE Generalplaner Elbphilharmonie, Hamburg, Germany

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BUILDING DATA

| | | | | |
|-------------------------------|------------|-------|---------|----------------|
| Site Area | 113'452 | sqft | 10'540 | m ² |
| Gross Floor Area (GFA) | 1'351'001 | sqft | 125'512 | m ² |
| Number of Levels | 29 | | 29 | |
| Footprint | 61'839 | sqft | 5'745 | m ² |
| Length | 413 | ft | 126 | m |
| Width | 279 | ft ft | 85 | m |
| Height | 361 | cbft | 110 | m |
| Gross Volume (GV) | 16'805'289 | | 475'872 | m ³ |

DETAILED DATA

Building Dimensions:

Length:
 West 21.60 m / 71 ft
 North 108.60 m / 356 ft
 South 125.90 m / 413 ft
 East 85 m / 279 ft

Height:
 Kaispeicher 37.26 m / 120 ft above sea level
 Entire building 110 m / 360 ft above sea level
 (approx. 102 m / 334 ft above street level)

Plaza

Length Tube (Escalator tunnel): 86 m / 279 ft
 Length escalator (Entry to Viewpoint West): 80 m / 279 ft
 Gross floor area : approx. 5'745 m² / 61'839 sqft
 Public area: approx. 3100 m² / 33'368 sqft

Glass Facade

Surfaces: Total glass facade surface: approx. 20'500 m² / 220'660sqft
 External element glass facade surface: approx. 16'000 m² / 172'223 sqft
 Facade Plaza: approx. 2'400 m² / 25'833 sqft
 Facade wind protection screens: approx. 285 m² / 3'068 sqft
 Facade roof terrace: approx. 80 m² / 861 sqft
 Facade void residential: approx. 450 m² / 4'844 sqft

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Facade void hotel: approx. 1`250 m² / 13`455 sqft

Number of elements: approx. 1`100

Size of facade elements: Width 4.30 m - 5 m / 14 ft
(subdivided in half > 2.15 m)

Height 3.35 m - 5.025 m / 11 - 16 ft

Weight facade elements approx. 1.4 t - 1.8 t / 3`086 -
3`968 lbs

Glazing configuration: Double glazing consisting of 2
bonded laminated safety panes with grey coloured dots
and an additional dotted mirror coating

Roof

Total surface: approx. 6`200 m² / 66`736 sqft
consisting of 8 concavely curved surfaces

Total weight of structural steel: approx. 850 t / 1.874`000
lbs

Number of curved steel beams: approx. 1`000 beams
composed of singular steel bars which were individually
preformed.

Weight per beam: up to 8 t / 17`637 lbs

Visual cladding consisting of approx. 5`800 circular, white,
perforated aluminium plates ("Pailletten") mounted to a
separate substructure:

diameter paillette: 0.9 - 1.1 m / 3 - 4 ft

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USE / FUNCTION

Concert Halls

Main Concert Hall:

2`100 seats

Floor area (incl. stage): approx. 2`590 m² / 27`879 sqft

Volume: approx. 23`000 m³ / 812`245 cubic ft

Length: approx. 50 m / 164 ft

Width: approx. 40 m / 131 ft

Height: approx. 25 m / 82 ft

Number of spring elements: approx. 362

Stage:

Floor area: approx. 270 m² / 2`906 sqft

Width: max. 21.3 m / 70 ft

Depth: max. 15.5 m / 51 ft

Canopy:

Height above stage: 15 m / 49 ft

Diameter: 15 m / 49 ft

Chamber Music Hall:

approx. 550 seats (chamber music)

Floor area: approx. 440 m² / 4`736 sqft

Length: approx. 30 m / 98 ft

Width: approx. 14.6 m / 48 ft

Height: approx. 10 m / 33 ft

Stage Floor Area: 172 m² / 1`851 sqft

Number of spring elements: 56

Kaistudio:

approx. 150 seats

Floor area: approx. 174 m² / 1`886 sqft

Musical Education

"Elbphilharmonie Instrumentenwelt" - Music Education for children

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Public Space

Ticketing, Merchandising and Shop

Plaza:

Public space / partly outside, 37.26 m above sea level (8th floor)

Parking

520 Units

Hotel (Interiors designed by others)

5 star Hotel:

Gross floor area: approx. 27'000 m² / 290'625 sqft

approx. 244 rooms

Wellness area

Restaurant

Conference rooms

Apartments (Interiors designed by others)

Gross floor area: approx. 12'801 m² / 129'166 sqft

45 units (each 120-380 m² / 1'292-4'090 sqft)

Restaurants (Interiors designed by others)

Restaurant and Bar "Störtebeker" on the 5th floor

Deli Cafe "Störtebeker" on the 8th floor

"Störtebeker" Shop and Beer Tasting Room on the 6th floor

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FIT OUT / FURNITURE

Room Acoustical Skin Main Concert Hall ("Weisse Haut")

Material: High-density gypsum fibreboard panels
Number of panels: approx. 10.000
Number of milled cells: approx. 1 million
Size per panel, varying: usually approx. 0.5 m² (5 sqft)
Weight per panel, varying: 30 - 125 kg / m² (66 - 275 lbs / sqft)

Wooden Panelling Chamber Music Hall

Material: European solid oak; individually milled scantlings mounted on Gifatec-Panels
Number of panels: 120
Size of panel: Width: 0.63 m / 2 ft; Height: 6.25 m / 20.5 ft
Weight per unit area: at least 50 kg/m²

MATERIALS / MANUFACTURERS

Facade

Contractor glass facade construction: Josef Gartner GmbH, Gundelfingen, Germany
Glass manufactures: Interpane AG, Plattling, Germany
Glass bending: Sunglass, Padua, Italy
Float glass (stocksizes): Guardian Flachglas GmbH, Thalheim, Germany
Glass printing: BGT AG, Bretten, Germany
Fiberglass manufacturer: Fiber-Tech, Chemnitz, Germany

Main Concert Hall

Steel construction: Spannverbund Gesellschaft für Verbundträger mbH, Berlin, Germany
and Haslinger Stahlbau GmbH, Feldkirchen, Austria
High-density gypsum fibreboard panels / "Weisse Haut" - production and assembly planning: Peuckert GmbH,
Mehring, Germany
Manufacturer gypsum fibreboard: Knauf Integral, Satteldorf, Germany
Organ builder: Klais Orgelbau, Bonn, Germany
Chair production: Poltrona Frau, Tolentino, Italy
Stage system and equipment: Waagner-Biro AG, Wien, Austria

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Chamber Music Hall

Wooden panelling (solid oak): Eichhorn GmbH, Wächtersbach, Germany

Stage system and equipment: Waagner Biro AG, Wien, Austria

Steel construction: Spannverbund Gesellschaft für Verbundträger mbH, Berlin, Germany

Steel construction Catwalks: Peuckert GmbH, Mehring, Germany