

ADVANCED CURTAIN WALL TECHNIQUE
- PROJECT DOCUMENTATION BOOK -



LIMESTONE FAÇADE BERLIN

ADVANCED CURTAIN WALL TECHNIQUE
- STONE TECHNIQUE -



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Library Guangzhou / China



Library Guangzhou / China

Companies

- Investor: Guangzhou Municipal Bureau of Culture
- Architect: Nikken Sekkei LTD(JP)&GuangZhou Design Institute(CN)
- Façade consultant: ShenZhen Xinshan Curtain Wall Technology Consultation LTD.CO,.
- Façade contractor: ShenZhen Keyuan Group

Object data

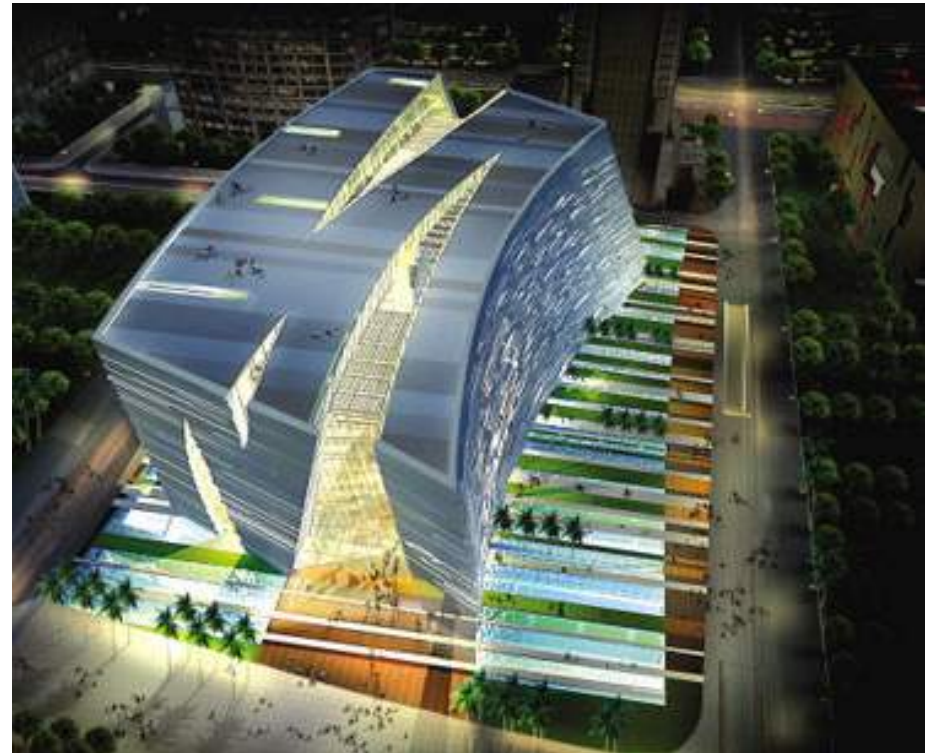
- Façade type: rainscreen cladding or unitized façade
- Building height: 60m
- Area: 25000m²
- Construction end: September 2010



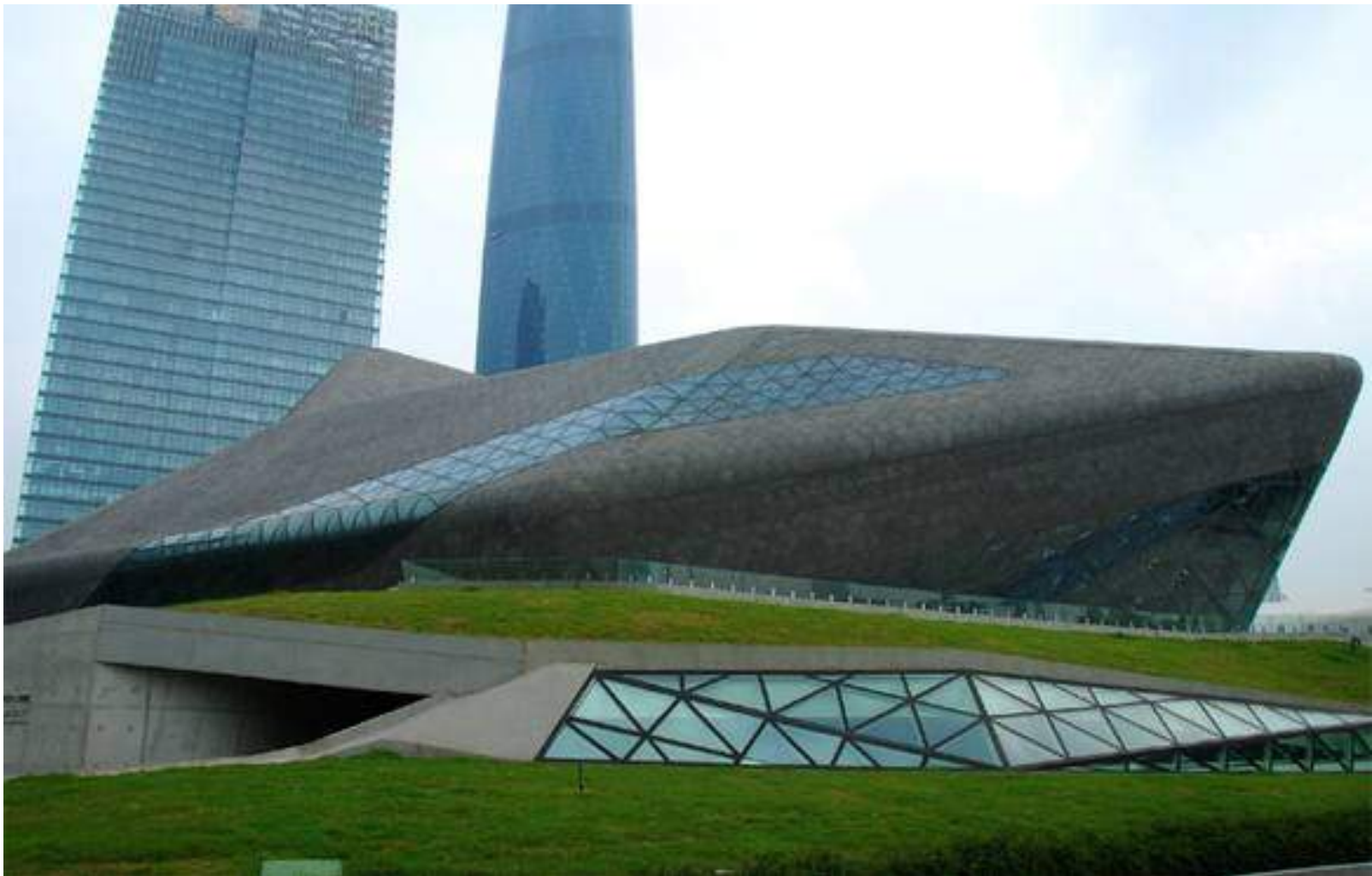
Library Guangzhou / China

Details / Specials

- Panel material: Shandong White granite
- Panel size: 1400 × 400 × 30mm
- Panel thickness: 30mm
- Joints: open
- Anchors: 100.000pcs FZP 11*15M618A4
- Special note: Large amount of stone ceiling



Opera House Guangzhou / China



Opera House Guangzhou / China

Companies

- Investor: Guangzhou Municipal Government
- Architect: Zaha. Hadid Architects (UK)
- Façade consultant: KGE Engineering (Zhuhai, China)
- Façade contractor: KGE Engineering (Zhuhai, China)

Object data

- Façade type: rainscreen cladding or unitized façade
- Building height: 40m
- Area: 22000m²
- Construction end: March 2009



Opera House Guangzhou / China

Details / Specials

- Panel material: Ice blue granite
- Panel size: 1000×900×30mm
- Panel thickness: 30mm
- Joints: closed
- Anchors: 230.000pcs FZP11*15M618A4
- Subframe: Aluminium
- Special note: Lots of shaped stone surfaces



Guo Hai Plaza Beijing / China



Guo Hai Plaza Beijing / China

Companies

- Investor: DESEA GROUP
- Architect: Beijing Institute Of Architectural Design
- Façade planning: NO
- Façade manufacturer: CNYD, Shenyang;
Maohua Decoration Engineering Co.Ltd,Shenzhen;
Honghengji Decoration Engineering Co.Ltd,Beijing;

Object data

- Height: 30 m
- Façade area: 40.000 m²
- Time of façade construction:
Mid Dec 2008 until Mid Nov 2009



Guo Hai Plaza Beijing / China

Details / Specials

- Façade material:
Granite (Mongolia Black, Shandong Bianco Tapaid), China
Panel size: 1100 x 700 x 25mm
- Anchor and machines:
300.000 pcs. FZP 11x15 M6/18 A4
- Special note: Opening System
(1st floor~4th floor);



Pudong Library Shanghai / China



Pudong Library Shanghai / China

Companies

- Investor: Shanghai Pudong Government
- Architect: East China Architecture Design & Research Institute Co., Ltd
- Façade consultant: No
- Façade contractor: Shenyang YUANDA Aluminium Industry Engineering Co., Ltd

Object data

- Façade type: unitized facade
- Building height: 36m
- Area: 60885 m²
- Construction end: 2009



Pudong Library Shanghai / China

Details / Specials

- Panel material: Granite
- Panel size: 800mmx600mm
- Panel thickness: 30mm
- Joints: closed
- Anchors: FZP 11x15 M6/18A4
- Subframe: Steel



Raiffeisenbank Bad Zurzach / Switzerland



Raiffeisenbank Bad Zurzach / Switzerland

Companies

- Investor: Raiffeisenbank Aare-Rhein
- Architect: metron Architekturbüro AG
- Pre-Design: IBT GmbH, Deutschland
- Statics: A. Niederegger, Dipl. Bauingenieur ETH/HTL/SIA
- Supplier of stone: Neumeyer und Brigl, Deutschland
- Installer of stone: K&K Fassaden AG
- Service and consulting: SFS unimarket AG

Object data

- Façade area: 985 m²
- Roof area: 357 m²
- Time of façade construction:
January 2009 bis December 2009



Raiffeisenbank Bad Zurzach / Switzerland

Details / Specials

- Façade material: Jura Rahmweiß
(Façade 3cm, roof pitch 4cm with 33° resp. 45°)
- Panel size: 750 x 390-1200 x 30mm
- fischer AL-bracket system on wooden framework
- Passiv house standard



Park Inn Hotel Stockholm Hammarby Sjöstad / Sweden



Park Inn Hotel Stockholm Hammarby Sjöstad / Sweden

Companies

- Investor: Botrygg AB
- Façade planning: Omniplan
- Façade manufacturer: Botrygg AB

Object data

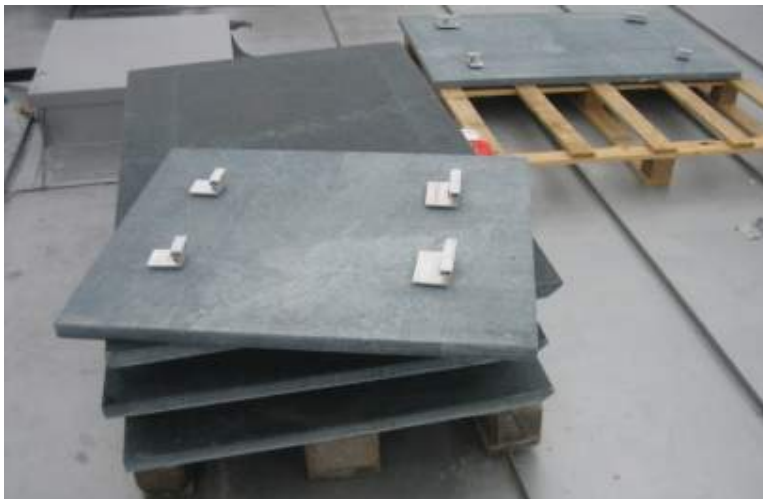
- Height: 52 m
- Façade area: 2.700 m²
- Time of façade construction:
January 2009 until December 2009



Park Inn Hotel Stockholm Hammarby Sjöstad / Sweden

Details / Specials

- Façade material: Serpentino Verde
Panel size: 750 x 390-1200 x 30mm
16 different sizes



Congress Hall Tashkent / Uzbekistan



Congress Hall Tashkent / Uzbekistan

Companies

- Investor: Zeromax GmbH, Zug (CH)
- Façade planning: Werner Sobek, Stuttgart (D)
- Façade manufacturer: BWM, Stuttgart (D)

Object data

- Height: 30 m
- Façade area: 10.000 m²
- Time of façade construction:
Mid May until 15th of August 2009



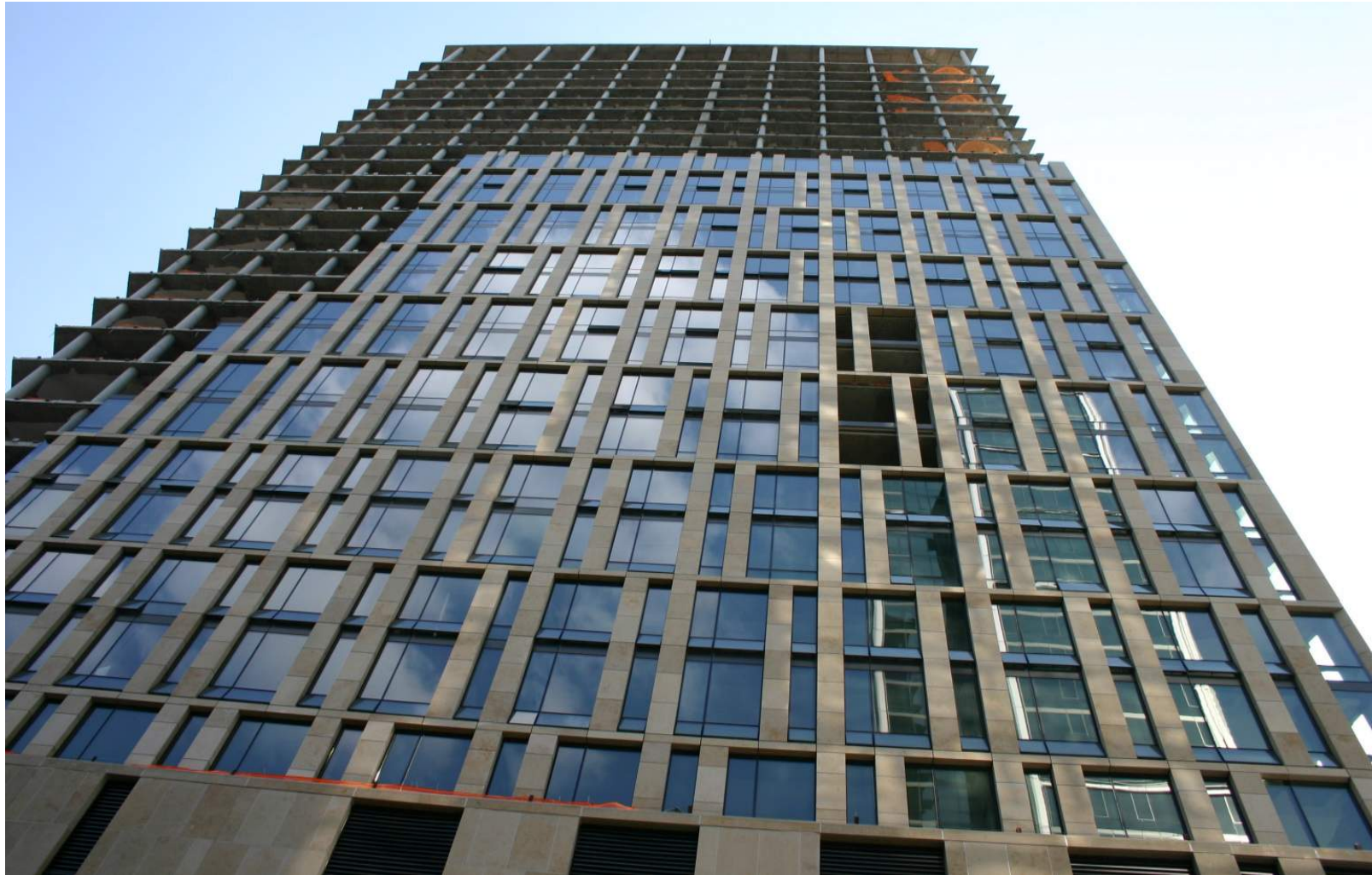
Congress Hall Tashkent / Uzbekistan

Details / Specials

- Façade material: Thassos Marble, GR
 - Panel size: 1100 x 940 x 40mm
- Anchor and machines:
 - 71.000 pcs. FZP 13x24 M8 A4
 - 62.000 pcs. FZP 13x20 M8 A4
 - 10.000 pcs. FZA 18x100 M12 D/20 A4
 - 13 pcs. SBN 502, drilling machines
 - 9 pcs. ASV 80 N/K, setting table
 - 5 pcs. SGB, automatic setting tool
- Specials:
 - Fixing of ornaments
 - Pillar rings
 - Earthquake protection with FZA anchors



101 Warren Street New York / USA



101 Warren Street New York / USA

Companies

- Investor: EJM Edward J. Minskoff Equities, Inc., USA
- Stone contractor: JMS Neumeyer & Brigel, D
- Facade consultant: SOM, USA
- Facade contractor: Antamex, CND
- fischer importer: Probe, USA

Object data

- Building height: 182 m
- Floors: 60
- Area: 13.000 m²
- Construction end: 2008/2009



101 Warren Street New York / USA

Details / Specials

- Panel material: N&B Jura Limestone
- Anchors: 120.000 Stück FZP 13x21 M8W/22A4
- Special notes: prefabricated elements from Canada.
Hung in with a tower crane. Advantage of this assembling mode: optimized production of the elements and low place requirement on site.



Menai Shopping Center North Wales / Great Britain



Menai Shopping Center North Wales / Great Britain

Companies

- Investor: Cathco
- Architect: Leach Rhodes Walker
- Facade contractor: Cerrig

Object data

- Facade type: rainscreen cladding
- Building height: 9 m
- Area: 900 m²
- Construction end: March 2008



Menai Shopping Centre North Wales / Great Britain

Details / Specials

- Panel material: Welsh Slate
- Panel size: 500 x 300 mm
- Panel thickness: 30 mm
- Joints: open
- Anchors: FZP 13 x 24 M8/6kt/14AL
- Subframe: VP 150 x 50, PH 133
- Special notes: Curved area



Nano Science Project Bristol / Great Britain



Nano Science Project Bristol / Great Britain

Companies

- Investor: Bristol University
- Architect: Capita Percy Thomas.
- Facade consultant: L.S.C.
- Facade contractor: L.S.C.

Object data

- Facade type: rainscreen cladding
- Building height: 14,5 m
- Area: 200 m²
- Construction end: May 2008



Nano Science Project Bristol / Great Britain

Details / Specials

- Panel material: Limestone
- Panel size: 1040 x 600 mm / 1750 x 600 mm
- Panel thickness: 30 mm
- Joints: open
- Anchors: 13x26 M8W/6kt/17AL
- Subframe: VP 80x50, PH 93, curved horizontal profile
- Special notes: curved area



133 Houndsditch London / Great Britain



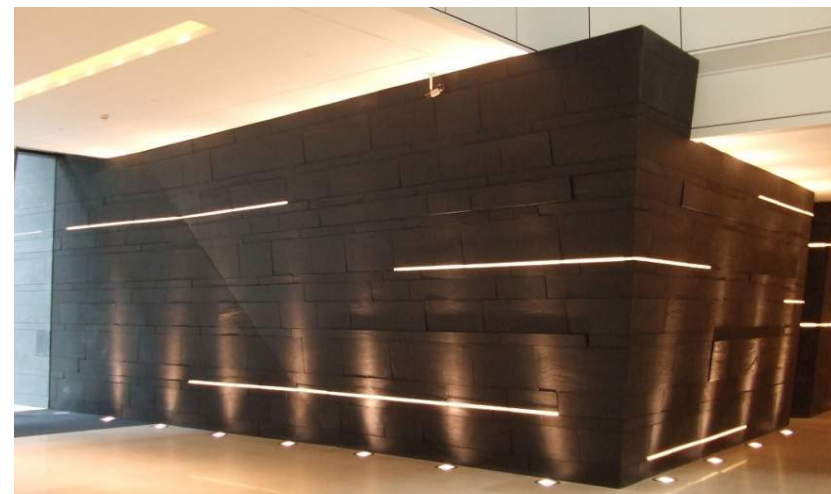
133 Houndsditch London / Great Britain

Companies

- Investor: HGI
- Architect: Swanke Hayden Connell
- Facade consultant: Harrison Goldman
- Facade contractor: Classic Formay

Object data

- Facade type: rainscreen cladding
- Building height: 26,5 m
- Area: 400 m²
- Construction end: June 2008



133 Houndsditch London / Great Britain

Details / Specials

- Panel material: Burlington Slate
- Panel size: Various
- Panel thickness: 30 mm
- Joints: open
- Anchors: FZP 13x24 M8/6kt/14AL
- Subframe: VP 50, PH 68
- Special notes: 80° inclined cladding, different plain of layers



Silverburn Shopping Centre Glasgow / Great Britain



Silverburn Shopping Centre Glasgow / Great Britain

Companies

- Investor: Retail Property Holdings
- Architect: BDP
- Facade contractor: Watson Stonecraft

Object data

- Facade type: rainscreen cladding
- Building height: 11 m
- Area: 1.200 m²
- Construction end: June 2007



Silverburn Shopping Centre Glasgow / Great Britain

Details / Specials

- Panel material: Samba Gold Granite
- Panel size: 1120 x 695 mm
- Panel thickness: 40 mm
- Joints: open
- Anchors: FZP 13 x 24 M8/6kt/14AL
- Subframe: VP 180 x 50, PH 93
- Special notes: curved area



Prayersroom The Home Of FIFA Zürich / Switzerland



Prayersroom The Home Of FIFA Zürich / Switzerland

Participating companies

- Builder: FIFA
- Architect: Tilla Theus und Partner AG, Zürich
- Statics: Emmer Pfenniger Partner AG,
Münchenstein
- Steel building: Delfosse AG, Brugg
- Natural stone: Lorenzi AG, Oberhasli
- Implementation planning: Luchsinger & Partner GmbH,
Quarten
- Production glass: Glas Trösch
- Anchorage natural stone: fischer FZP 13x26 M8/6kt/17
- Anchorage glass: fischer FZP 15x17,5 M8/16 G

Object data

- Approx. 63 m² overhead glazing (suspended glass ceiling)
- Approx. 280 m² wall cladding natural stone (ONIX)



Prayersroom The Home Of FIFA Zürich / Switzerland

Details / Specials

■ Wall cladding

- Parallelogram and trapezoid natural stone
- 4 piece FZP 13x26 M8/6kt/17 per panel
- Fixed on steel angles

■ Overhead glazing

- Laminated safety glass 12/10 mm, EUROWHITE
- 4 piece FZP 15x17,5 M8/16 G per panel
- fixed on steel angles
- natural stone disposed on laminated safety glass



Prayersroom The Home Of FIFA Zürich / Switzerland

Details / Specials

■ Wall cladding



■ Overhead glazing



Kühne + Nagel KG Hamburg / Germany



Kühne + Nagel KG Hamburg / Germany

Participating companies

- Builder: Kühne + Nagel (AG & Co.) KG
- Architect: Jan Störmer Partner
- Implementation planning: PSP Architekten
Ingenieure
- Statics: Ingenieurbüro Dr. Binnewies
- Planning of the facade: PBI Entwicklung
innovativer Fassaden GmbH
- General contractor: Köster AG
- Installation: Haskamp GmbH & Co. KG

Object data

- Administration building HafenCity Hamburg
- 5.500 m²



Kühne + Nagel KG Hamburg / Germany

Details / Specials

- Prefabricated wall elements
(also rolling elements)
- Soft stone (lacustrine limestone)
- Undercut anchor assembled on site
- FZP 13x26 M8W/ES4 AL
- Clevis-subframe system
(keyhole-principle)



Morgan State University (MSU) Library Baltimore / USA



Morgan State University (MSU) Library Baltimore / USA

Participating companies

- Design Architect: Sasaki Associates Inc.
- Architect of Record: Design Collective
- Contractor: Hess Construction Co.
- Masonry Subcontractor: Baltimore Masonry
- Stone Supplier: Walker Zanger
- Curtainwall System Supplier: Probe Facade System Inc.

Object data

- Library of Morgan State University
- 30.000 sqf



Morgan State University (MSU) Library Baltimore / USA

Details / Specials

- series of repeating modules, each 7' 8" x 12',
made of 19 stones, each module has the same
sized stones in the same place
- Panel material: Woodbridge Quarzit
- Panel size: 30" tall, 18"-30" widths, 1 ¼" thick
- Products: FZP 11x21 M6/6kt/9 AL, FAZ 10/10 A4,
FUR 10x80 FUS A4
- Bended subframe SystemOne, radius 4 m
- Special bracket BSL 100/40



Guangzhou Developing Building Guangzhou / China



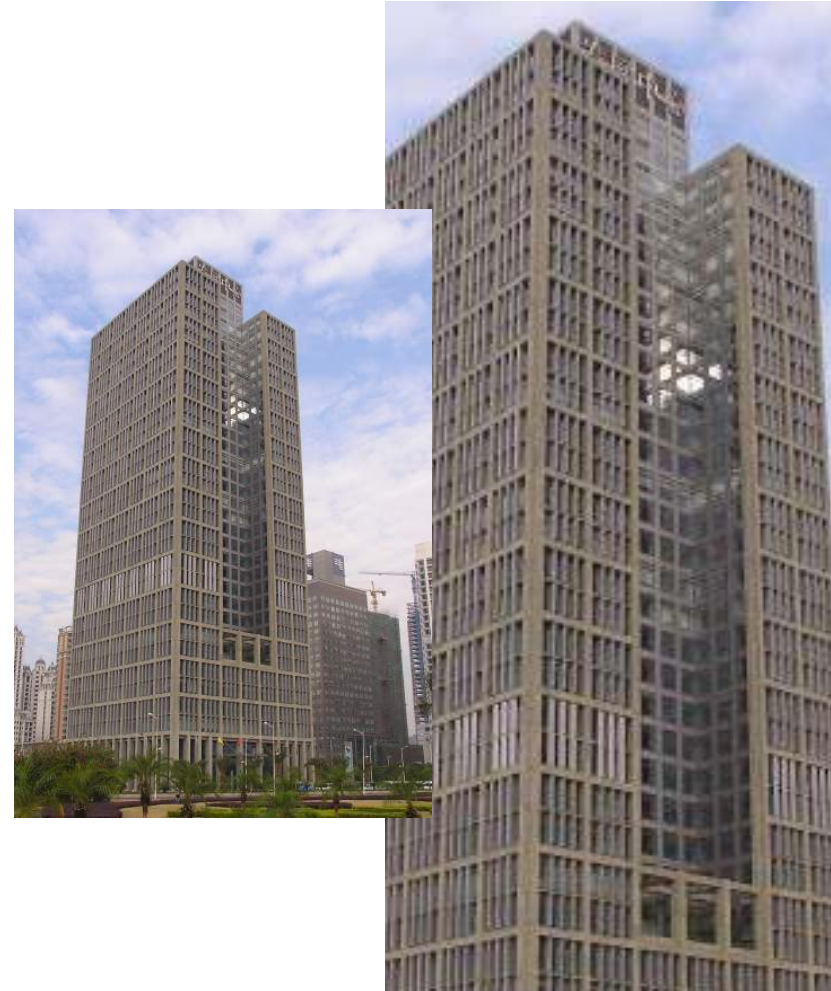
Guangzhou Developing Building Guangzhou / China

Companies

- Investor: Bank of Communication
- Architect: von Gerkan, Marg und Partner Architekten
- Facade contractor: Yuan Da Enterprise Group

Object data

- Facade type: sandstone
- Building height: 150m
- Area: 40.000 m²
- Construction end: 2006



Guangzhou Developing Building Guangzhou / China

Details / Specials

- Panel material: sandstone
- Panel size: 1.2 m x 0.9 m
- Panel thickness: 30 mm
- Joints: open
- Anchors: FZP 13x24M8/6Kt/14AL
- Subframe: General Subframe
- Special notes: rainscreen cladding with sandstone.
First sandstone cladding project in China. Highest
sandstone project with anchor fixing of the world
(108M).



NAGA Project Beijing / China



NAGA Project Beijing / China

Companies

- Investor: Beijing Tianheng Real Estate CO.LTD
- Architect: Ovd Arup & Partners /(Kent M.C.Lui)
Harry Lim & Associates
- Facade consultant: ARUP

Object data

- Facade type: porcelain stoneware
- Building height: 60m
- Area: 20.000 m²
- Construction end: 2006



NAGA Project Beijing / China

Details / Specials

- Panel material: porcelain stoneware panel
- Panel size: 0.596 m x 0.396 m
- Panel thickness: 10 mm
- Joints: close
- Anchors: FZP 11x7 M6 K/9 A4
- Subframe anchor : UK3 chemical mortar
- Special notes: porcelain stoneware panel with 10mm thickness. Sub-frame and fixing components provided by fischer. Successful seismic test simulation, grade 9 on Richter scale.



MoorHouse London / Great Britain



Exterior view of the building



MoorHouse London / Great Britain

Participating companies

- Architect: Sir Norman Forster
- Planning panelling: fischer / fischer UK
- Panelling: Gormley Ltd.

Object data

- Height 99 m
- 18 floors
- Office building



MoorHouse London / Great Britain

Details / Specials

- Panelling as indoor application
- Format of the panels 497 x 2110 x 40 mm
- Material of the panels roman Travertin
- Open-pored material
- Horizontal gap 3 mm
- Vertical gap cladded with high grade-steel batten
- 4500 pieces FZP 13x26 M8W



Softech Telecom Wicklow / Ireland



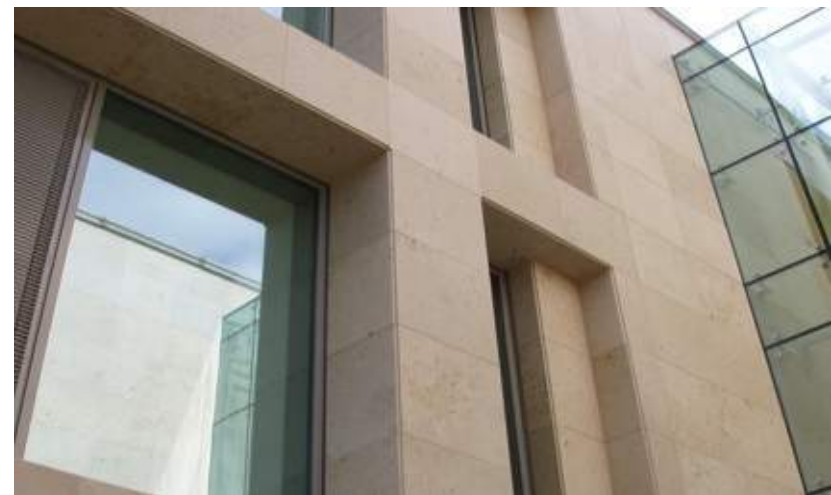
Softech Telecom Wicklow / Ireland

Participating companies

- Builder: Skanska
- Architect: Forster and Partners
- Planning of the facade: Stone Development and fischer
- Facade: Stone Development

Object data

- Buildings of the Telecom Ireland



Softech Telecom Wicklow / Ireland

Details / Specials

- Horizontal and vertical bands with deep reveals
- Triangular support columns at the corner of the building
- Format of the panels 750 x 750 x 30 mm
- Jura limestone
- 600 m²
- FZP 13x26 M8W/6kt/17 AL
- SystemOne



Ventilation building of the Brooklyn Battery Channel New York / USA



Ventilations building of the Brooklyn Battery Channel New York / USA

Participating companies

- Architect: Digeronimo PA, Paramus, New Jersey
- Subframe / anchor: fischer GmbH & Co. KG
- Acquisition: Probe Construction, Wayne, New Jersey (ACT Importeur)
- Purchaser: Triborough Bridge and Tunnel Authority, New York
- Statics: CDC Curtain wall design, Dallas, Texas
- Supplier of the plates: North Carolina Granite, Mt. Airy NC
- Installation: Titan Stone Tile & Masonry, New York.

Objekt data

- Governor's Island, Brooklyn, New York
- Ventilationsbuilding of the Brooklyn Battery Channel
- Reconstruction of a Granite-facade (Monument protection)



Ventilations building of the Brooklyn Battery Channel New York / USA

Details / Specials

- In Fort Lauderdale (Florida) precasted subframe
-elements (ladder scaffold)
- Loadtransfer on slab plate with adhesive anchor
- 4.000 m² Granite facade
- 16.000 pieces FZP 13x24 M8/6kt
- Format of the panels ca. 1,5 m²
- Weight of the panels ca. 120 kg
- Height of the building ca. 36 m
- Location: close to the sea, saltwater



Concorde Hotel Berlin / Germany



Concorde Hotel Berlin / Germany

Participating companies

- Investor: Grothe Immobilien Projektierungs KG, Bremen
- Architect: Jan Kleihues, Kleihues + Kleihues Architekten, Berlin
- Main contractor / GU facade: Rheinhold & Mahla
Fassadentechnik, Oststeinbeck GmbH
- Facade consultant: Erich Mosbacher, Friedrichshafen
- Statics natural stone: Ing.-Büro für Befestigungs-Technik
GmbH, Niederzissen
- Natural stone: „Kirchheimer Muschelkalk“ der Kelheimer
Naturstein GmbH, Essing
- Fixing Systems: fischerwerke GmbH & Co. KG

Object data

- Hotel with 17 floors
- Height of the building: 65m



Concorde Hotel Berlin / Germany

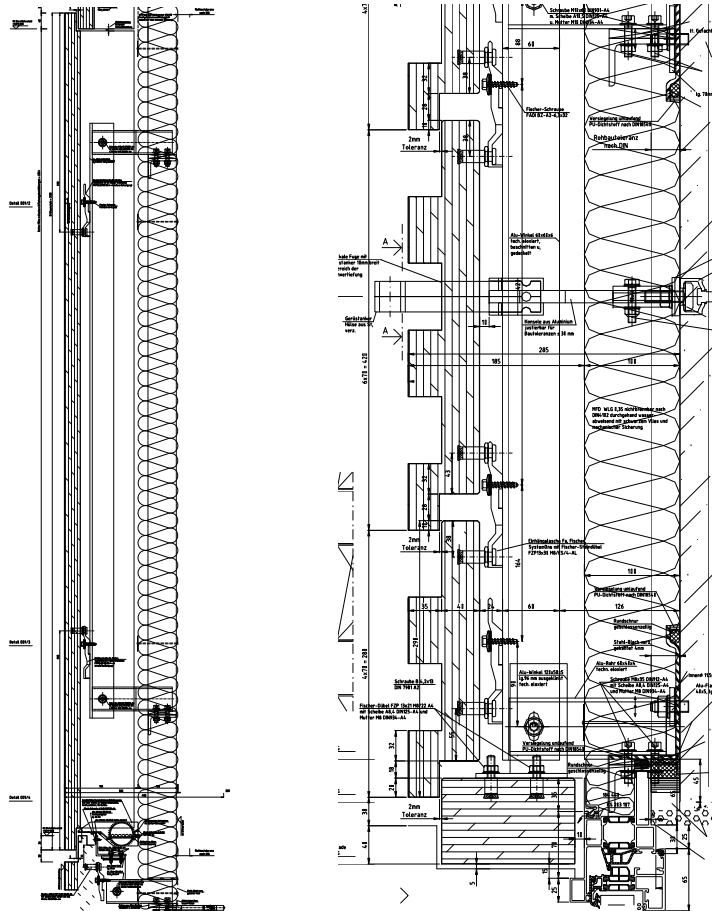
Details / Specials

- Facade surface 9.200 m²
- In the balustrade flutes were milled into the facade plate
- Tolerance of the facade ± 1 mm
- Wind suction max. 2.400 N/m²
- Wind pressure max. 1.350 N/m²
- Column elements pre-assembled
- Used products:
 - FZP 13x30 M8W/ES
 - FZP 13x21 M8W
 - LW 50
 - LW GP
 - FAZ A4



Concorde Hotel Berlin / Germany

Details / Specials



Administration building NCC Hellerup / Denmark



Administration building NCC Hellerup / Denmark

Participating companies

- Builder: Ejendomsinteressentselskabet Tuborg Nord C
- Architect: Schmidt, Hammer & Lassen K/S
- Natural stone: Skifer & Naturstein Norwegen

Object data

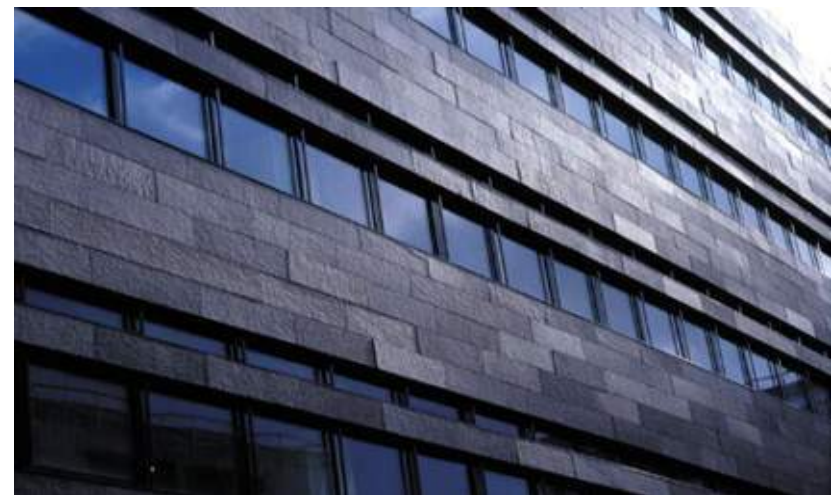
- Administration building NCC Denmark A/S
- Area: 1.700 m²



Administration building NCC Hellerup / Denmark

Details / Specials

- Material of the facade: black Otta-Phyllitt slate from Norway
- High tolerances for the board thickness because of the material of the plates slate (33 ± 5 mm)
- Facade panels in landscape format
- Format of the panels 1500 x 390 mm
- SystemOne light underconstruction on steel frame construction
- Ca. 12.000 pieces FZP 13x20 M8/10 A4
- Wind load $-2,24$ kN/m² bis $+1,49$ kN/m²
- Working hours/m²



City-Center Leipzig / Germany



City-Center Leipzig / Germany

Participating companies

- Original concept: Professor Hanselmann
- Reconstruction: Wiesbadener Immobilien AG
- Fixing elements: fischer GmbH & Co. KG
- Subframe: Wendker Fassaden
- Facade contractor: Wendker Fassaden

Object data

- Natural center of the University complex as Uni-giant
Leipzig
- The landmark of Leipzig
- New terms as City-Center and domicile of the
„Mitteldeutscher Rundfunk“



City-Center Leipzig / Germany

Details / Specials

- Height of the building 150 m / 34 storeys
- Only 2 cm thickness of the stone
- Format of the panels 1,2 x 0,9 m with 4 anchors per panel
- Light-grey „Padang“ from a south Chinese quarry
- Area ca. 12.500 m²
- 50.000 pieces FZP 11x21 M6/6kt/12 AL
- Wall elements partly with external window and anti-glare shield construction with format 1,8 x 3,6 m, 450 kg were milled into a Aluminium-framework in a workshop
- 250 m² facade was installed per day.
- Wall elements were fit in the used support brackets without bolts
- Concave arched outer surface



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