

Facade Design & Fabrication

The foundation stone for the Maritim Hotel in Berlin was laid in the summer of 2004. The turnkey contractor, a consortium comprising the Thuringia and Berlin-Brandenburg units of Hochtief Construction AG, awarded Anders Metallbau the metalwork package, which included design and customized solutions.



View along facade

Consistent and sensitive detail design

The architectural concept called for innovative facade solutions of the highest standard. In tackling the highly varied tasks set out in the brief, we needed to implement the full range of our know-how and experience.

Canopy/Stauffenbergstraße

The approx. 85 m long canopy designed by our engineers incorporates some 68 tonnes of steel and cantilevers 12 m at the main entrance and around 4 m along the restaurant terrace. The steelwork members are spaced at 4 m centres. All joints in the metal cladding and luminous ceiling grids are consistent with the spacing of the stonework joints. Concealed luminaires are integrated in all parts of the high and low canopy. The works also included the canopy waterproofing along with the penetrations needed for the gratings. The covering is walkable for cleaning and maintenance purposes.

A clip-in assembly and adjusting screws on the canopy's steelwork members allowed restraint-free fixing of the aluminium-sheet cladding and welded tubular aluminium frames. Special seals were fitted to prevent water ingress.

Sash windows

The (vertical sliding) sash windows were purpose-developed in collaboration with our system supplier, Schüco International. The three sashes can be effortlessly opened or closed using a handle located in the middle of the lower sash frame. Each sash measures 2.5 m by 1 m (w x h) and weighs 100 kg.



Counterweights concealed in the window frame allow the sashes to be held open in any position. The newly developed units incorporate eight custom-made frame sections.

All windows on the ground and first floors, whether opening or non-opening, offer a uniform appearance.

Moreover, concealed SHE drives are built into the upper window frames to meet fire-safety and venting requirements. The window transoms are aligned with the stonework joints.

Hotel room windows

The hotel room window system includes four purpose-designed frame sections. Flutes are extruded onto the window frames to connect external waterproof membranes and the internal upstand, which serves as a plasterwork stop bead. The system is based on the Schüco Royal 75 BS HI series of sections, with the contours and size of the window frames echoing the stonework profiling. The architect also specified a 8 mm joint at the junction between window and masonry. High-precision workmanship was thus required to meet the tight tolerances in line and level.

Given an sill height of only 60 cm below the hotel room windows, laminated-safety glazing and restrictor stays were needed for the vents.

The lockable stays limit the opening width of the vents to 110 mm. To open the windows for smoke venting, the stay can be manually unlocked by authorized persons. Once this stay has been disengaged, a further 90° restrictor stay allows access for cleaning and maintenance. The vent can be tilted at any time.

Pergola glazing

For reasons of sound control, the rectangular openings in the roof parapet at second floor level were fitted with glazing linearly supported on two sides. The frame construction here is fully faced by natural stone, with only the perimeter glass bond visible.



Double-skin facade Grand Ballroom

Grand Ballroom/Hitzigallee

Here, the specification demanded a sound-reduction index of 46 dB plus smoke venting for the hall by means of bottom-hung vents in a double-skin facade. Overall, the curtain wall element measures 36 m by 7 m (w x h). Externally, the framing members are again precisely configured to coincide with the stonework joints. The assembly is also designed to match the

ground- and first-floor windows in appearance. A Schüco countersash window was installed on the inner skin of the double facade. The vertically staggered arrangement of vents with an approx. 50° opening angle was such as to meet the statutory requirements regarding the net free ventilation area for smoke evacuation. In the cavity of the double skin façade is a two-level gangway for cleaning and maintenance access to the facade areas.

Furthermore, to meet the high sound-proofing requirements, the installed triple glazing consisted of laminated-safety glass with a soundproofing interlayer and heavy-gas filling in the cavities.

Smoke vent housing for Small Ballroom

In the event of fire, roof hatches actuated by rack and pinion motors automatically open to allow smoke evacuation from the Small Ballroom. The design of the smoke vent housing is based on a facade system with a high sound-reduction index of 42 dB. Steel/aluminium panels with lead inlays were used as the infill. The roof over the Small Ballroom also incorporates 12 skylights meeting a sound-reduction index requirement of 46 dB.

The 140 cm x 200 cm overhead glazing panels are designed for access to allow cleaning.



Smoke vent housing

The necessary sunshading is provided by concealed conservatory blinds, fitted behind the stone facings with metal surrounds. Here, the curtain wall sections are filled with plaster-board inlays.



Raised roof area over Grand Ballroom with smoke vents

Installation

The Maritim Hotel project, with its wealth of special details, customized solutions, component and other product tests, was a true test of craftsmanship. In particular, the design and installation of the canopy was a notable feat of engineering.



Close-up of canopy



Canopy soffit

Hotel canopy

Pre-tensions of up to 12 cm plus had to be factored into the fabrication and installation of the steelwork members for the 12 m cantilevered canopy. This was a structural requirement to accommodate the assembly's enormous self-weight of 68 tonnes.

The canopy was connected to the building structure by means of thermally insulated "Isokorb" units let into the walls and tied back with 36 threaded rods sized up to M30.

Maritim Conference Hotel, Berlin



Architect/overall design: *Jan Kleihues, Kleihues + Kleihues Gesellschaft von Architekten mbH, Berlin*
 Client: *Viterra Development GmbH, Berlin*
 General contractor: *Hochtief Construction AG*
 Customized Facade: *Anders Metallbau GmbH, Fritzlar*

Mission

Berlin's new Maritim Hotel stands as an exemplar of best-practice development in a heterogeneous environment. Painstakingly designed by local architect Jan Kleihues, the deluxe conference hotel blends seamlessly into the surrounding urban fabric.

Maritim Hotel Berlin – first-class establishment that defies superlatives

The Maritim Hotel is a business and conference establishment occupying a prime, central location in the German capital's "Mitte" district. The Potsdamer Platz square, celebrated art galleries (Neue Nationalgalerie and Gemäldegalerie) and the Berliner Philharmonie concert hall all located in the immediate vicinity. The new-building occupies a 12,000 sqm plot within the site bounded by Stauffenbergstraße, Sigismundstraße, Hitzigallee and Reichpietschufer.

The surrounding area, dubbed the "Shell-Haus quarter" after the iconic



Four-light window units in hotel lobby



Main entrance with 11-storey tower



Canopy overhanging main entrance

office block adjoining the hotel, features a string of listed twentieth-century modernist buildings.

Despite its immense volume, housing some 42,000 sqm of above-ground floorspace, the new hotel complex engages sensitively with its context.



Grand Ballroom facade/Hitzigallee



Rooftop courtyard over Small Ballroom

The structure and facade composition of the award-winning scheme by Berlin architect Jan Kleihues merge seamlessly with the neighbouring developments. On the Stauffenbergstraße front, the hotel initially continues the eaves height of the Shell-Haus office block. The hotel tower standing perpendicular to the street rears up above this level. A symmetrical facade arrangement is then adopted at the far corner, where Stauffenbergstraße meets Sigismundstraße.

Events venue on a whole new scale

The 11-storey tower, which rises up from the otherwise seven-storey building, lends the German capital a new, distinctive architectural landmark. At the heart of the hotel two event halls

are located which, can be united into a single venue. Depending on the seating arrangement, the "Grand Ballroom" can accommodate up to 2,500 guests while the "Small Ballroom" can additionally seat 1,250. The hotel also includes an approx. 1,250 sqm conference area, with 12 rooms catering for up to 1,000 participants.



Structural & Facade Design

The Maritim Hotel Berlin occupies a 12,000 sqm-plus site in the city's Shell-Haus quarter and boasts an impressive gross floor area of 65,000 sqm. The architectural concept likewise set new benchmarks and posed an intriguing challenge for our technical design team.

Design work underpinned by component tests

To support the structural investigations, component tests proved necessary at the design stage for the following elements ...

- **Hotel room windows between second and sixth upper floors:** Anders Metallbau conducted impact tests for the laminated-safety glazing.
- **Rooflights and glass pyramids:** The structural and residual strength tests on the overhead glazing for cleaning and maintenance were performed in-house.

Some of the above components were subject to approval by Berlin's Senate Department for Urban Development.



Canopy main entrance



Close-up of pergola glazing



External doors/Hitzigallee

Maritim Hotel: powerful architecture, discreetly realized

The diversity of facade compositions sported by the Maritim Hotel only becomes apparent upon closer inspection. The first impression is primarily dictated by the stringent, functional arrangement of open and solid surfaces. The captivating play of light and shade generated by the window/stone alternations in the tongued and grooved masonry system enjoyed high priority in the architect's design concept. Yet, the subtle architectural details added by our components – e.g. the sash windows in the restaurant area, the large window and door assemblies on

the ground and first floors, and the double-skin glass facade to the Grand Ballroom – are soon registered by the keener observer.

Anders Metallbau: supreme facade engineering

In March 2004, we were contracted by a consortium comprising Hochtief Construction AG's Thuringia and Berlin-Brandenburg branches to design, fabricate and install the following components:

- Canopy/Stauffenbergstraße
- Grand Ballroom/Hitzigallee: Soundproof double-skin curtain wall, pergola glazing

- Inner courtyard/Grand Ballroom: Roof-light ribbons, glazed rooftop structures
- Inner courtyard/Small Ballroom: Rooflights allowing access for cleaning and maintenance
- Smoke vents with automatically opening roof hatches
- Hotel room windows between second and sixth floor and in the 11-storey hotel tower, with laminated-safety glazing and restrictor stays
- Punched windows on ground and first floors
- Newly developed sash windows
- Ground-floor access doors and emergency exits
- 11th-floor penthouse with glazed wellness area

Interiors – Showpiece Penthouse

With 505 hotel rooms and conference facilities accommodating up to 4,750 guests, the four-star-plus establishment offers the perfect venue for congresses, balls, award ceremonies and the like. The opulent interiors hark back to Berlin of the 1920s. With its sweeping views over the city's rooftops, the penthouse is a further highlight.

A spacious and noble venue for high-profile events ...

The hotel offers 505 rooms, including 71 exclusive suites. Its centrepiece is a 350 sqm penthouse, equipped with whirlpool and sauna, which enable breathtaking views of the Berlin cityscape. From the comfort of their suite, guests can enjoy a magnificent, unobstructed view towards Potsdamer Platz.

The penthouse also showcases a variety of items from Anders Metallbau's comprehensive service portfolio.

The steel frame assembly for the wellness area was designed in the manner of a conservatory system.

The continuous glass front was built without any vertical framing members. The panes are adhesive-bonded at the corners and held by sections hidden behind the stone facings.

At night, the glass roof over the whirlpool invites guests to indulge in a little stargazing.



Facts and figures: the essentials in brief

Developer/client:	Viterra Development GmbH, Berlin	Works completed by Anders Metallbau GmbH:
Investor:	SEB Immobilien-Investment GmbH, Frankfurt/Main	• Canopy at main entrance and over restaurant terrace:
Operator:	Maritim Hotelgesellschaft mbH, Bad Salzufflen	Structural steelwork, concealed lighting, canopy cladding, soffit and glass pyramids
Architect:	Jan Kleihues, Kleihues + Kleihues Gesellschaft von Architekten GmbH, Berlin	• Grand Ballroom:
Project management:	Drees & Sommer AG, Berlin	Soundproof double-skin curtain wall (46 dB sound reduction index)
Site co-ordination:	Grünzig Gesellschaften, Architekten und Ingenieure, Berlin	• 11 th -storey penthouse:
General contractor:	HOCHTIEF Construction AG, consortium of Thuringia and Berlin-Brandenburg branches	Roof terrace with glazed wellness area and glass roofs
Window and facade systems:	Schüco International KG, Bielefeld	• Inner courtyard/Grand Ballroom:
		SHE roof vents, glazed rooftop structures, pergola glazing
		• Inner courtyard/Small Ballroom:
		Rooflights, rooftop structures with smoke vents, pergola glazing
		• Window units:
		586 three-light hotel room windows, 102 windows in hotel tower, 119 windows on ground and first floors, 29 sash windows
		• Doors:
		54 external doors

Cover photo & top- and bottom-right pictures on page 2: Stefan Müller, Berlin.



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