

BATTLE McCARTHY©

Consulting Engineers & Landscape Architects



PROJECT:

GSW Headquarters, Berlin

CLIENT:

Gemeinnützige Siedlungs

ARCHITECTS:

Sauerbruch Hutton Architekten

BM SERVICES:

Structural and Environmental Design

VALUE:

Classified

DESIGN BRIEF

To design sustainable strategies for the refurbishment of an existing 1950's office tower in the Friedrichstadt area of Baroque Berlin. The project is a distinctive landmark for sustainability in the city and a vibrant and stimulating office environment.



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DESIGN INITIATIVES/ACTIONS UNDERTAKEN

The existing 22 storey 11m deep tower blocked allowed for cross ventilation to be used and the addition of a double skin along the west facade was used to form a thermal flue.

The refurbishment of the tower resulted in many distinctive styles being brought together to differentiate between the building facades. The east facade is convex allowing for a large access area whilst the concave western facade assessed via a stepped timber terrace affording views across the city. Facade shading devices are used on both of the buildings long facades, to the west they are red and orange and to the east silver.

The tower is raised up above a 3 storey galleried atrium surrounded by a number of ground level forms clad in slate-grey ceramic slabs.

An integrated closure system allows for natural ventilation across the building with free circulation without acoustic attenuation. Natural thermals at high level are channeled by the aerodynamic cantilevered roof to aid the ventilation of the internal spaces.

The building's slender form is advantageous in daylighting the space and has psychologically positive impacts of the occupants.

The energy saving strategies of the GSW Tower have helped to cut overall energy consumption by half.

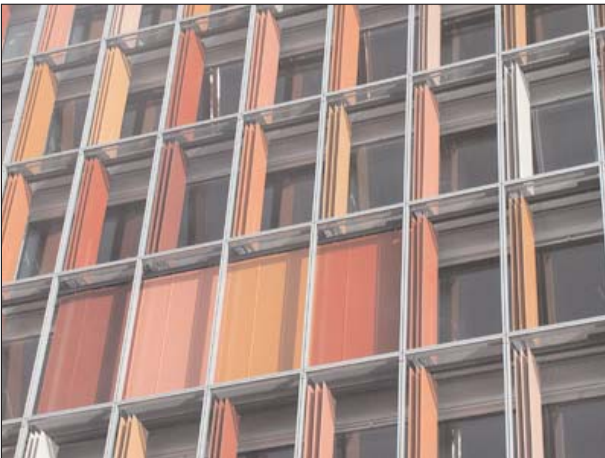
AWARDS

World Architecture Award shortlist for northern Europe	2001
Architekturpreis Beton, Special Mention	2001
Deutscher Architekturpreis, Special Mention	2001
Mies van der Rohe Award Finalist	2001
Deutscher Fassadenpreis	2001

Berlin Architectural Award	2000
RIBA award for the GSW Headquarters Building	2000
Stirling prize nomination	2000
ar+d Award, High Commendation	2000



The internal space benefits from daylighting and access to views across Berlin



The west facade characterised by the brightly coloured interstitial shades



The east facade with silver cladding and aluminium operable louvers

Natural ventilation is driven by the prevailing wind entering at the east facade and stack effect and thermal buoyancy at the western facade. Sound baffling enables natural ventilation across partitioned areas.

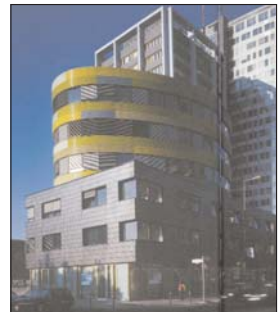
During peak hot or cold periods when the facades cannot be opened, the facade cavities act as thermal buffers. In winter the warm air in the cavities is used in heat recovery for the heating of the building and fresh air is supplied from a raised floor system. In summer radiant cooling is provided. The high thermal storage of the exposed concrete structure is used year-round to moderate internal temperatures.

The east façade

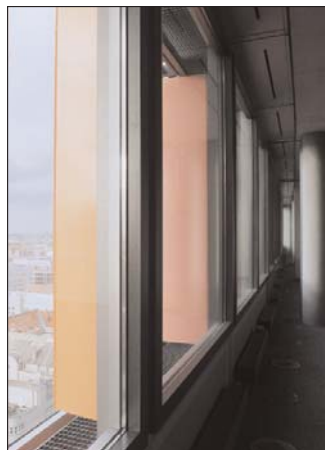
Automatically and manually-operated triple-glazed windows with between-pane blinds. Air is also admitted through louvered panels independently from the windows.

The west façade

Double-skin façade with interior double pane windows that are operated both manually and automatically and a sealed 10-mm exterior glazing layer. The interstitial space is 0.9 m wide and houses perforated aluminium louvers which can be automatically or manually adjusted. In peak solar conditions the louvers can be extended to fully shade the entire facade.



The distinctive tower curve and heavy block forms at ground level



On the west facade coloured panels fill the interstitial space while on the east facade discreet internal panels pull open to ventilate