

Vision 2000

MERO-VISION, Number 35, 1999/2000



Evolution at MERO

At the turn of the millennium MERO is globally recognized as one of the market leaders of technologically innovative structures. At the same time MERO can look back at five decades of being at the pulse of developments in architecture and building technology.

When it comes to competent advice and reliable execution of future-oriented projects, architects and owners from around the world turn to MERO.

As 1999 comes to an end MERO shows an order backlog of more than 400 million DEM. Among the orders secured are prestigious projects such as the Glasshouse Manufacture of Volkswagen in Dresden (Arch.: Henn Architekten, Berlin), the headquarters of General Motors in Detroit (Arch.: SOM, Chicago) and the Arts Center in Singapore (Arch.: DP Architects, Singapore). Projects like these underline MERO's global competence in design and implementation of sophisticated high-tech quality solutions.

MERO's path led from structures made of their classic spaceframe of tubes and nodes to structures of profiles in combination with tensile cables, integrating the cladding as supporting element.

Pursuing the request of architects and owners for more transparency and translucency, glass increasingly becomes the center of MERO's projects. Through their own patents for glass fixtures, so-called "spiders", a number of executed glazing applications and their fundamental know-how in the static calculation of glazed structures - even in extreme load cases - MERO differentiate themselves from their competitors.

MERO follows the trend for lightweight structures by offering package solutions including membrane structures.

MERO proves their capability in future-oriented building techniques

MERO is leading in the use of new technologies and innovative materials; their computation is based on the utilization of computer-aided static calculations and construction techniques.

MERO's reference list of projects completed in 1999 as well as those still to be finished in 2000 reads like a "Who's Who" of contemporary architecture.

Among others, we were able to execute projects for Foster & Partners,

silicate cladding and the application of bent glass panes were implemented.

In the field of membrane structures MERO has been able to gain further profile. Triple layered membrane pillows under air pressure - so-called "cushions" - will be used at the Eden Project in Cornwall (Arch.: Nicholas Grimshaw & Partners Ltd.).

Repeatedly MERO's projects are a focal point in the public eye and are known around the globe. The list includes the new railway station at the international airport in Frankfurt/Main, the headquarters of Boeing in Seattle,

the underground station Canary Wharf in London as well as the international airport in Singapore.

Our interior division is setting new benchmarks through our glass access floor, the new panel type 4 with F30 characteristics and the CAD/CAM-optimized stone covering design.



gmp, Nicholas Grimshaw & Partners Ltd. and Murphy/Jahn Inc. Architects.

The latest technologies in glazed structures such as glass fins being used as beams of a glazed roof structure, tensile structures with

MERO's International Presence

Due to its reference projects on all continents MERO is well known by architects and engineers worldwide. The name of the founder Dr.-Ing. Max Mengerhausen and his concepts of composition in space, bionics and spaceframe technology as well as the economy of resources used in construction are taught to students in universities all over the

MERO Online

To improve the relaying of information to our customers we have completely restructured our homepage www.mero.de which covers a wide scope of our activities. The subsidiaries are represented as well. MERO Structures, Inc. in the USA can be found at www.mero.com.

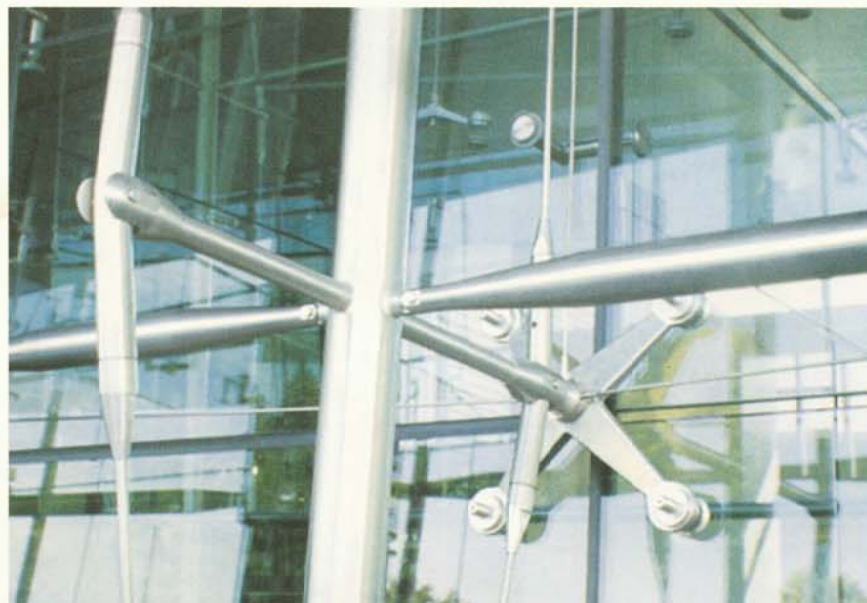
medium digital photos of erection sites can be submitted to the project and erection managers at the headquarters.

In the future we will increasingly execute business with our worldwide customers, partners and subsidiaries via the internet.

MERO Guiding the Way to new Technologies

Construction with conscious use of resources will become more and more important: Questions on the choice of materials, their reusability, dismantling, recycling and energy consumption will become as important as the composition of the structure.

The combination of construction elements and concepts for new structures require the ability to design, which develops from MERO's culture and experience with projects executed in the past. The integration of cladding materials such as aluminum and/or titanium sheet metal, glass and membranes has a wide spectrum that could result in being the sole supporting element of the structure: An all glass structure, a sheet metal shell and a membrane roof.



world as a synonym for innovative building techniques.

International inquiries are handled by our regional subsidiaries. These national companies are continuing their growth pattern. Recently we have added MERO Middle East LLC in Dubai which stands in the long tradition of MERO in the Middle East.

In Europe we have strengthened our presence by founding MERO Nederland N. V. in Holland as well as founding MERO Austria by taking over the team of Fassadentechnik Binder. This at the same time will lead to an enhancement of our competence in curtain walling which is increasingly demanded to provide single source responsibility for a building shell.

The opportunities that lay in the exchange of know-how and capacities of the MERO companies and their teams will be used even more in the future.

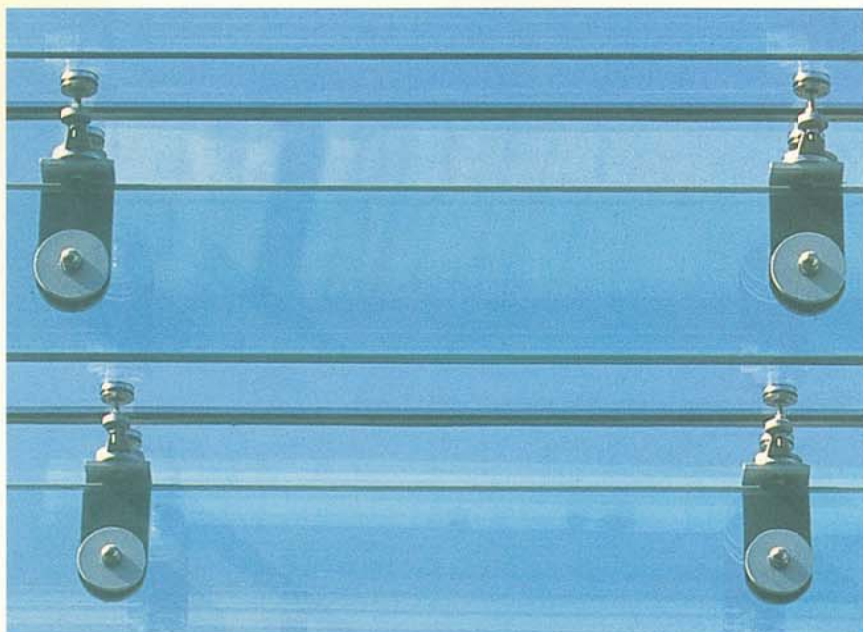
The Exhibit Systems Division has started the direct sale of their products via the internet with the link www.meroshop.de.

A major part of the internal company communication as well as with subsidiaries and sales branches is handled via e-mail. Through this

For the MERO team these will be exciting and demanding tasks, servicing architects and owners in their realization of innovative building concepts.

Dr. Roland Klose
Managing Director

Josef Rossmannith
Managing Director



Filigree, Bright and Airy Buildings of Glass and Steel for the German Capital Berlin

In a vigorous effort to live up to its new standing as the German capital, Berlin sets trends in urban architecture with a flair quite of its own. Berlin is the hub of commerce between all regions of Europe, an international metropolis and gate to the East. This development has been fuelled by an investment of 20 billion DEM over the last ten years.

MERO, too, has contributed its share towards reconstructing and modernizing the capital, with filigree structures of steel and glass capturing the flow of daylight. As the year 1999 closes, five major projects have been completed: The House of German Industry & Trade, the German Foreign Office, the studios of the TV channel ZDF, the Sony Center and the party headquarters of the CDU. They are living proof that MERO is one of the leading companies worldwide in the field of steel and glass construction, creating transparent envelopes for buildings from special types of glass and leading edge glazed structures, steel spaceframes or cable net structures.



*Railway Station Berlin-Spandau
Arch.: gmp, Hamburg/Germany*



*House of German Industry & Trade,
Berlin/Germany*



German Foreign Office, Berlin/Germany



Studios TV channel ZDF, Berlin/Germany

Glass Shell on a Grid of Steel Beams Arches over the Atrium at the House of German Industry & Trade

The House of German Industry & Trade, housing the commercial associations DIHT, BDI and BDA, occupies a central position in the heart of Berlin.

Enclosed on all sides by this complex of office buildings, an almost rectangular spacious atrium catches the eye of the visitor with its transparent all-glass facade. A filigree structure of glass and steel arches over the whole extension of this central court, protecting it from the weather. A six-story tower rises on the inside, housing meeting rooms and a restaurant.

Arch.: Prof. Schweger & Partner,
Hamburg/Germany



Glazed Roof Supported on Glass Fins for ZDF Studios, Berlin



Pure glass supports glass!

In future, local news will be broadcast from the new ZDF studios in Berlin-Center. This studio and office complex near the Brandenburger Tor will accommodate the staff of the ZDF

Arch.: Thomas Baumann, Berlin/Germany

numbering 300 persons, as well as facilities of Deutschland-Radio, the ORF and other foreign networks. The atrium is closed off with a glazed roof resting on stable translucent glass fins.

Glazed Roof on Steel Supports for the German Foreign Office in Berlin



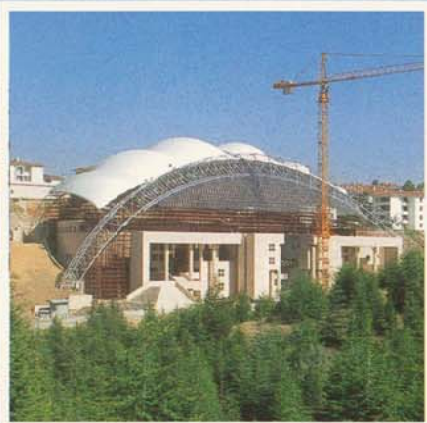
The new German Foreign Office in Berlin is now located on Werder Strasse. The office complex surrounds a rectangular atrium on three sides, while the fourth side is closed off with a glazed facade rising to the full height of the building. The glazed roof rests on a grid of six main girders running parallel to the facade. This grid

supports panels of laminated safety glass which are in themselves shaped like a barrel vault in order to enhance the overall stiffness. The glazed facade has an almost invisible supporting framework of steel cables, some of them additionally braced by steel rods.

Arch.: Müller-Reimann, Berlin/Germany

Cable Net Structures – Membranes

**Leading Edge Technologies for
More Creativity and Artistic Freedom**



An existing amphitheatre at the Bilkent University in Ankara was roofed in with a spaceframe structure combined with a cable net tensile structure and a membrane cladding.

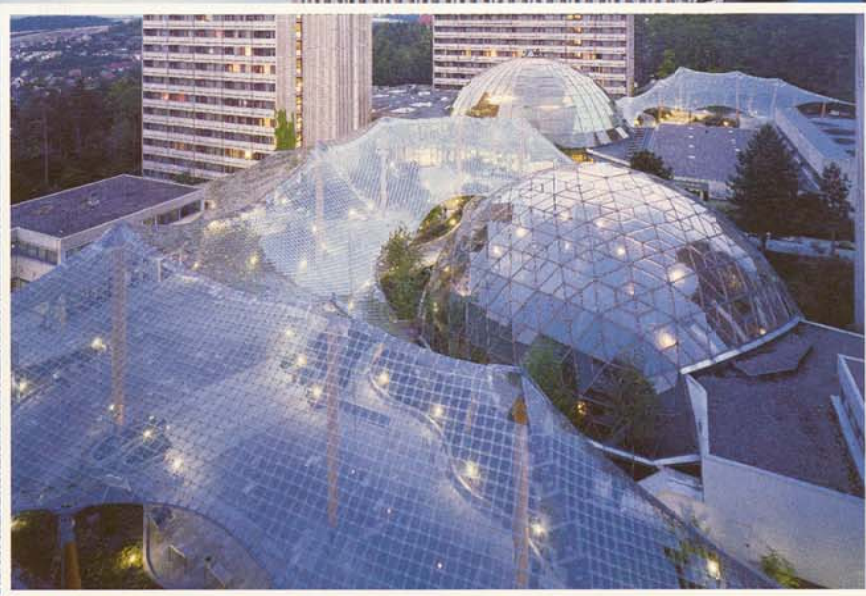
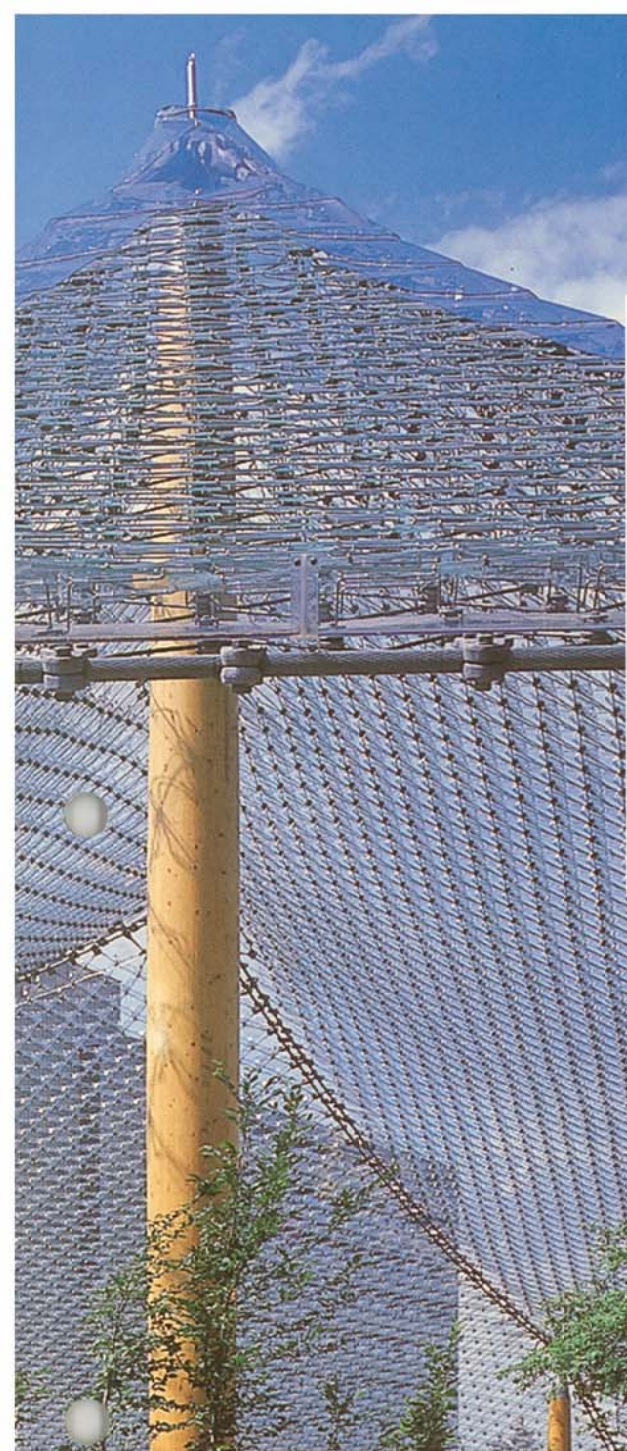
Arch.: Erkut Sahinbas, Ankara/Turkey

Amphitheatre Bilkent University, Ankara/Turkey



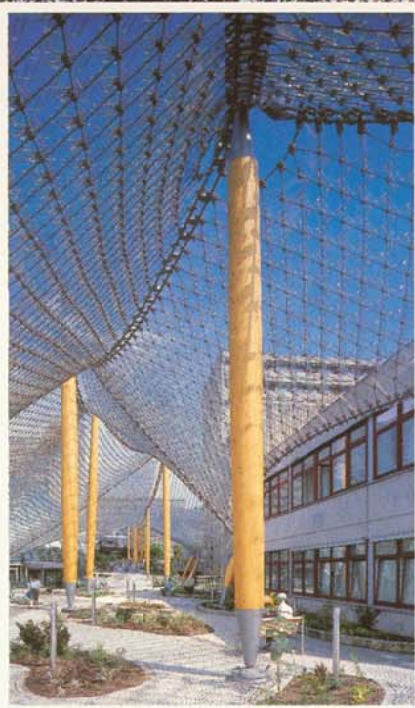
The Hippodrome, a race-course just outside the city limits of Ankara, was erected in an architectural style that brings to mind the tents of nomads. The membrane cladding, supported on five main girders, reaches over a length of 150 m.

Design: MERO



A Roof of layered Glass Scales on a Cable Net Structure in Bad Neustadt

The Rhön-Klinikum medical facility is situated in Lower Franconia on the Saale river near the health-resort of Bad Neustadt. In the course of the last few years, the separate buildings housing in-patients were connected by a system of three hemispherical domes and two pyramids rising to the same height as the buildings, with the latest addition of two covered promenades roofed with filigree cable net structures. This allows visitors and patients to move and communicate in a space that creates the illusion of being open to nature, while being well protected from weather influences. The cable net is supported in its highest points on sixteen masts which are flexibly anchored on a steel ball



joint. The cable net is corrosion protected by a galfan-type treatment. The roof cover is closed on top by three dimensional lanterns.

Arch.: Lamm-Weber-Donath GmbH, Stuttgart/Germany

Structural Design: Sobek + Partner, Stuttgart/Germany

High-Tech Facades

Boeing Headquarters

At the new headquarters of the aircraft manufacturing company Boeing in Seattle, the entrance area is accentuated by a curved facade. The point-fixed insulated glazing is supported on horizontal hollow section trusses which are suspended from the roof structure.



Arch.: Loschky Marquardt & Nesholm,
Seattle/USA

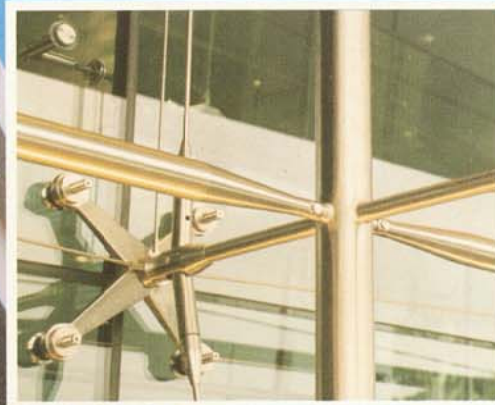


The Glasshouse Manufacture, Dresden

With a factory complex in the heart of Dresden aiming for maximum transparency by a sophisticated use of glazed structures, car manufacturer VW sets an architectural landmark. As of the year 2000, an expected output of 150 exclusive high-market limousines is scheduled to be finished per day. Through a highly prestigious glazed facade, visitors can watch the final stages of assembly from pre-fabricated parts. Two glass towers offer attractive storage facilities for finished cars, a glazed oval structure will serve as distribution center.

Arch.: Henn Architekten, Berlin/
Germany





Corning Museum of Glass

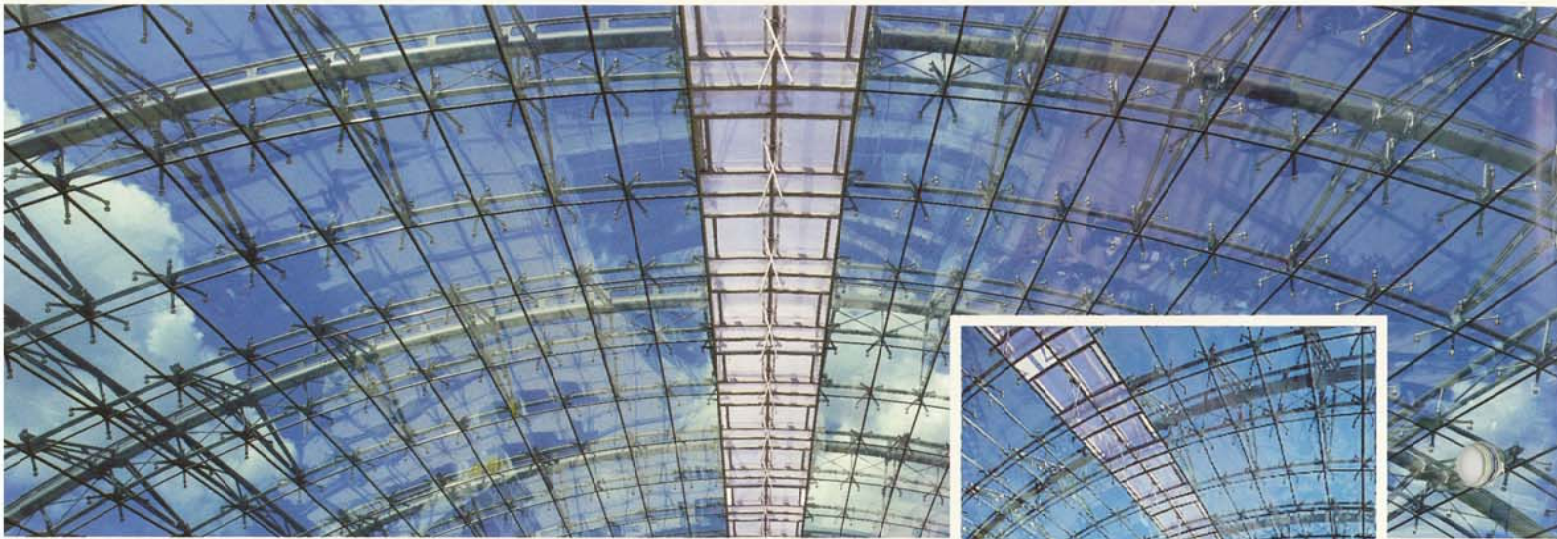
Corning, a market leader in silicone sealing materials of worldwide renown among glass builders, has erected a Museum of Glass in New York. In order to maximize transparency and visual prominence, the glazed facades were combined with supporting structures on the outside. They consist of stainless steel tubes pre-stressed in contrary direction. The spiders for the point fixing of the glass are attached to their upper pressure struts. The horizontal connecting tubes have conical end parts subtly enhancing the elegant flair of the structure.

Arch.: Smith-Miller + Hawkinson Architects, New York/USA



Glazed Roofs

A Skyward Eye of Glass and Steel Admits Light to the New Railway Station at Frankfurt/Main Airport



The new railway station at Frankfurt/Main airport impressively presents itself like a piece of tomorrow's architecture transported into the present. It is spanned by a glazed dome 145 m long and 14 m wide. This super-terminal has an annual transit capacity of eleven million passengers. The glazed dome is free spanning without additional supports. Beyond mere protection against the elements, it provides a climate controlled and welcoming ambiance.

Arch.: Bothe, Richter, Teherani, Hamburg/Germany

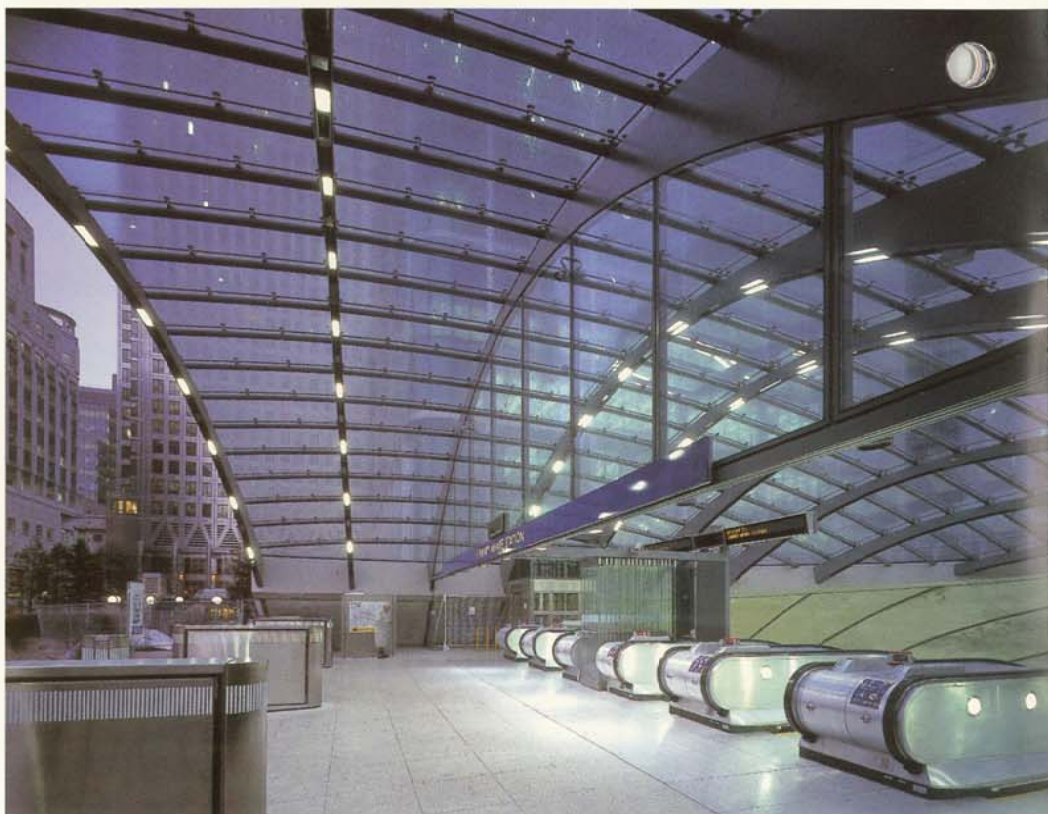


Underground Station Canary Wharf, London

As part of the work on the Jubilee Line Extension in London, three Underground stations in the new office district Canary Wharf had to be roofed in. In keeping with the surrounding high-class urban development, the structures are covered with glass panels curved around one axis, with dimensions up to 3.1 x 1.1 m, which are each point fixed with six rotules. The glass panels consist of laminated safety glass (2 x 12 mm partially pre-stressed glass [TVG]), with a sufficient safety margin against vandalism.

The general layout of the roof is elliptical in shape. This made the geometry of the connecting details a particularly tricky and daunting task.

Arch.: Foster & Partners, London/UK



Terraced Office Landscape under Glazed Roofs, dvg Hannover

The dvg Hannover
Datenverarbeitungsgesellschaft mbH,
a German company founded in 1970
for the coordination, planning and
execution of data processing tasks
has considerably expanded in reaction
to a rapidly increasing volume of
business transacted.

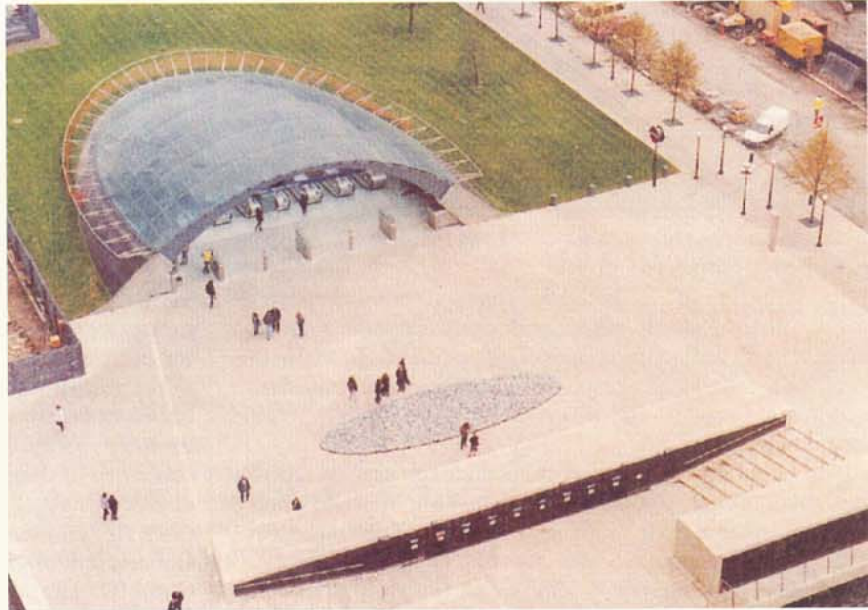
The new dvg headquarters in Hanover-Bemerode extend over a length of 380 m. In future, a staff of 2,000 will work in the great, climate-controlled glass halls. The office building proper is topped by three 'floating' closed glass roofs constituting a climate buffer between the inside and the surrounding world. Spacious atriums bathed in light, planted with olive and mulberry trees, evoke the atmosphere of Mediterranean landscapes. The play of light and shadow under the glazed roof creates ever-changing, captivating ripples of shades and colors. Overheating of the office spaces in summer is prevented by the optional opening of large areas of the roof glazing. To ensure perfect airflow within these huge spaces and to optimize the spaceframe structures superimposed on them, extensive wind channel tests were performed at the ETH Institute in Zurich, Switzerland.

*Arch.: Hascher + Jehle
Heinle, Wischer und Partner,
Berlin/Germany*





Changi Airport, Singapore



Canary Wharf, London/UK



Tan Tock Seng Hospital, Singapore



TUAS Checkpoint, Singapore



3D-Cinema, Glasgow Science Centre,
Glasgow/UK

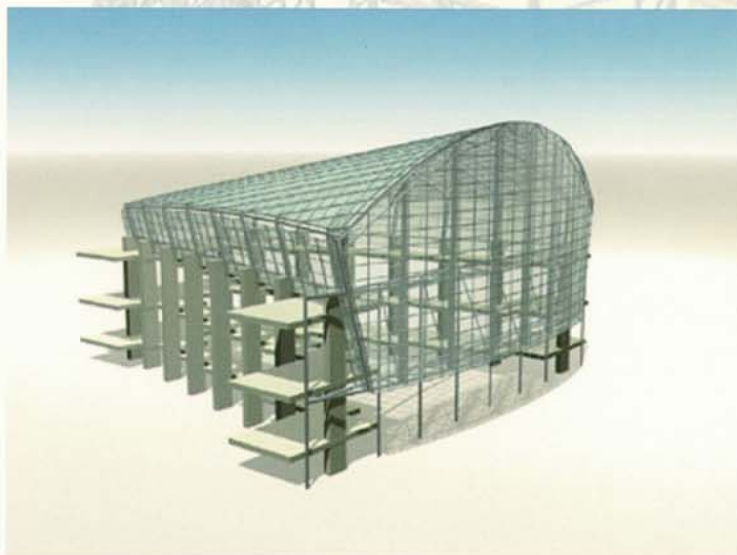
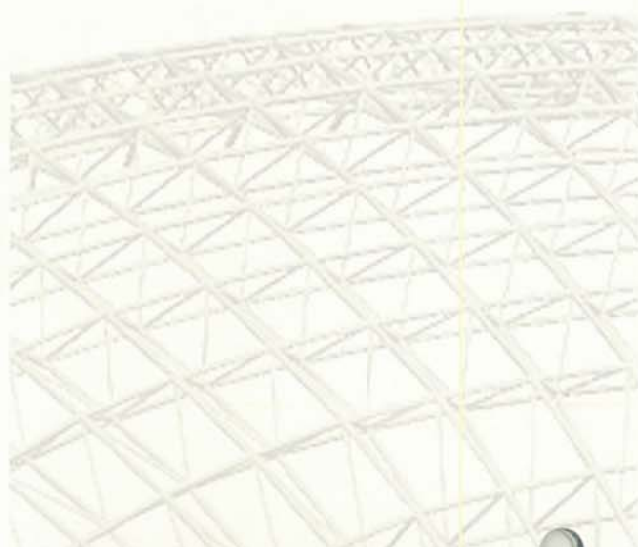


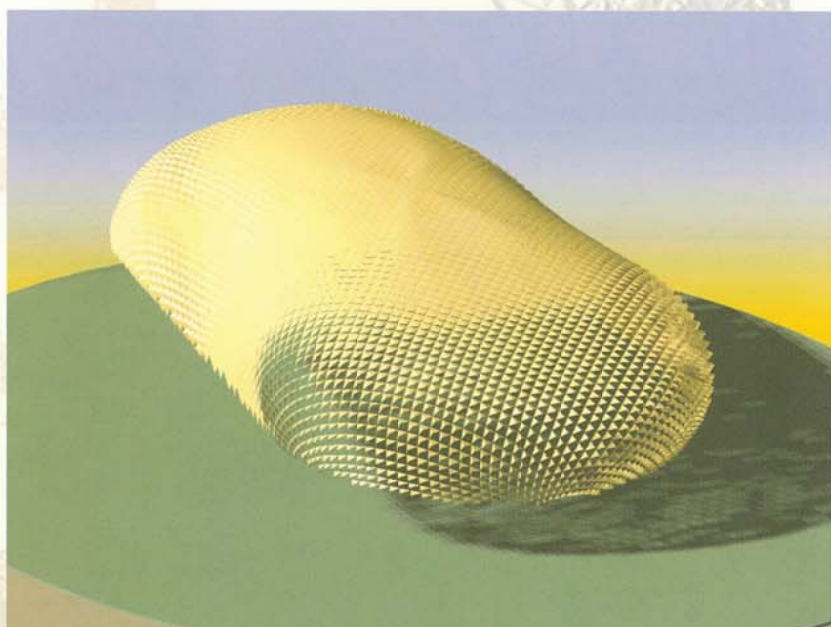
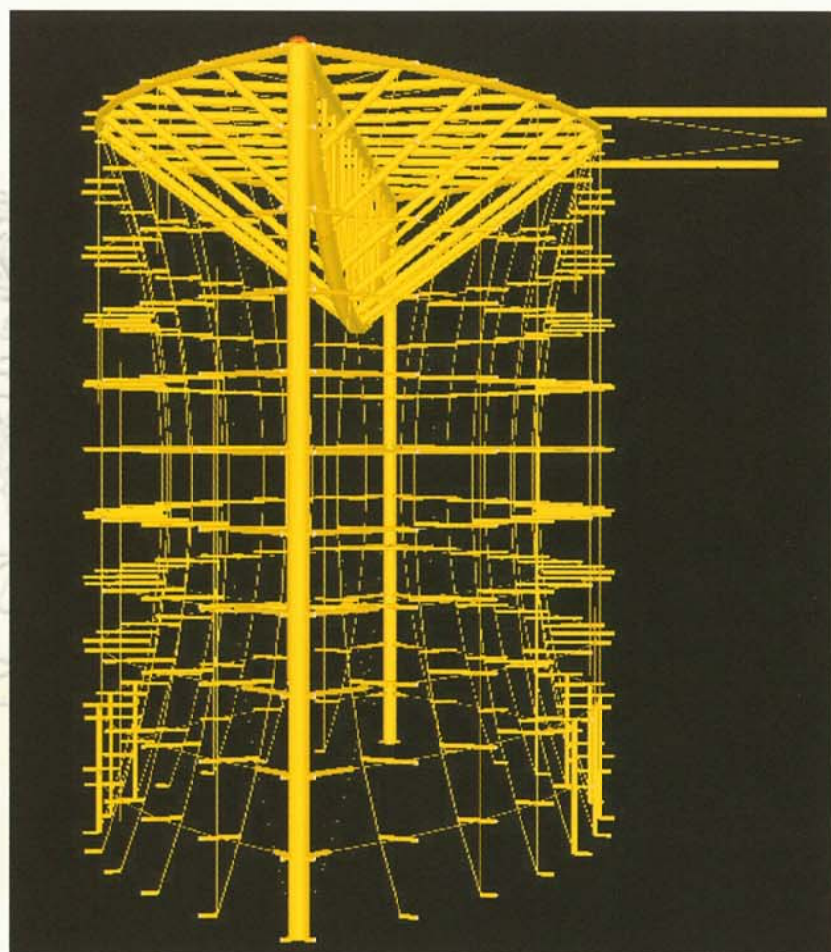
General Motors Headquarters, Detroit

A circular pedestrian walkway of glass with a diameter of approx. 61 m serves as gallery and connection to four separate office buildings. For this project, MERO supplied a package solution of steel and glass, consisting, among other things, of a triple layer etched glass floor, curved handrails of glass and wood and a stainless steel grid system. Hidden mechanical fasteners enabled precision fit tolerances and eliminated costly field welding.

Arch.: Skidmore, Owings & Merrill,
Chicago/USA

CAD Animations





During the tender and design stages, CAD animation facilitates planning. It allows the simulation of even the most extravagant shapes and highly sophisticated constructions. The CAD models shown above will all become reality in the near future or have already been executed.

An Idea is Making Waves

Near the Old Opera House in Frankfurt/Main an architecturally unique building has been taking shape since November 1997.

A 13-story building contoured like a wave is extending diagonally across the site.

The "Frankfurter Welle" with its lively individual architecture stands out from the typical skyline, but at the same time becomes harmoniously integrated into the already existing surroundings. The main objective in the design of buildings, shopping arcades and communal areas was the creation of an open and transparent atmosphere.

An area of almost 100,000 sqm flexibly created for offices, shops, apartments and recreational facilities will offer an innovative meeting point in the city with the aim of combining the world of business with the world of pleasure. Various types of MERO



access and hollow floors will contribute in reaching this goal.

Approx. 5,000 sqm hollow floor and 64,000 sqm access floor type 4 will be installed at the "Frankfurter Welle".

Arch.: J.S.K., Frankfurt/Main

Air Traffic Control on MERO Access Floor Type 4



The air traffic control at the new airport tower in Nuremberg is carried out on a MERO access floor type 4. All necessary supply and waste lines as well as air conditioning are installed underneath the access floor.





Emirates Tower, Dubai

41,000 sqm access floor type 4 were installed at the Emirates Tower.

Arch.: Norr Group Consultant, Dubai

Kendah House, Dubai

The Kendah House, Dubai, was equipped with 19,000 sqm access floor type 5.

Arch.: Holford Associates and Partners, Dubai

Both projects were delivered and installed by our partner Mideast Data Systems, Dubai, Mr. Robert El-Najjar and team.



Modular System at all Levels

MERO's dock family is now complete Widebody Overhaul Dock in Cairo finished

Parallel girder docking system Egypt Air, Cairo/Egypt



With the completion of the widebody overhaul docks for Egypt Air in Cairo, maintenance and overhaul works can now be carried out on five different types of aircraft by having a number of adaption possibilities in one single docking system.



Scissor-type docking system SAS
Oslo-Gardermoen/Norway



Modular docking system Lufthansa, Hamburg/Germany



Suspended docking system Al Salam Aircraft Industries, Riyadh/Saudi Arabia

MERO Airport-Technik has now completed its dock family and can offer a number of docking concepts depending on the individual requirements as well as local conditions of the client.

- Modular docking systems
- Scissor-type docking systems
- Parallel girder docking systems
- Roof-suspended docking systems

No matter what type of MERO docking system is chosen – they all have in common the highest functionality, ergonomics and longevity as well as their easy handling in daily practice.

Decades of experience in dock installations as a single source provider of engineering, manufacturing and erection guarantee the excellent quality of MERO's products.



Engine-No. 2 Stand, Israel Aircraft Industries, Tel Aviv/Israel





*Design: Loth & Partner, Duesseldorf
Realization: Schnaitt Internationaler
Messbau, Bergheim/Germany*

Make Your Visions Come True!

With its Meroform modular systems, MERO Exhibit Systems offers ingenious solutions, which perfectly meet their customer's need for conventional design and high variability.

At this year's EuroShop, the MERO stand was a real eye-catcher. At a height of 5 m and a total length of 15 m, what seemed to be a conventionally-built curved wall was, in reality, made of MERO's latest development – the Advantec wall system. Advantec meets all requirements in user-friendliness, speedy

assembly and sturdy, economic design.

The versatility of Meroform can be utilized for trade fair construction as well as for interior design. The 4D System, for instance, offers stable structural solutions with a clean design appearance. Combined with visually distinctive accessories like the fixture M/S, which completely covers the supporting structure with conventional cladding materials of the customers choice, a perfect solution with an individual appearance is easily achievable.

MERO Exhibit Systems has also successfully established itself as provider of almost indestructible pop-up displays. This year the Merolite

program range was completed with further high-quality display systems, which are now introduced in a new extensive catalogue.

Just in time for the beginning of the new millennium, the first internet shop of MERO was opened. From now on every user of MERO Exhibit Systems products can directly purchase Advantec system parts under www.meroshop.de or www.mero.de/mes. Further product lines will be available soon.

*Ferrucci
Design and Realization:
Apro Sãopaulo, Brazil*

Design and Realization:
Creaworld Exhibition AG,
Bellach/Switzerland



Design and Realization:
Sparks Europe B. V.,
Alphen aan den Rijn/NL



Divisions:

Construction Systems

- Space Frames
- Glazed Structures
- Aircraft Maintenance Docks

Floor Systems

- Access Floors
- Hollow Floors
- Services

Exhibit Systems

- Meroform
Modular Construction Systems
- Merolite
Display Systems

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Glazed Structure,
New Railway Station at
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Arch.: Bothe, Richter, Teherani,
Hamburg/Germany

Back Cover:

Underground Station
Canary Wharf, London/UK
Arch.: Foster & Partners, London/UK

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