



Movable sun protection solutions  
for sophisticated

# Architecture

Counter-pull systems | **k\_oax**

HORIZONTAL, VERTICAL OR AT AN ANGLE:  
COUNTER-PULL SYSTEMS AS RECTANGLES, TRAPEZOIDS  
OR TRIANGLES PROVIDE INTERNAL GLARE  
AND SUN PROTECTION FOR MODERN ARCHITECTURE.

Freedom of form

INTERNAL GLARE AND SUN PROTECTION IN EXTRAORDINARY FORMATS

Characteristic features of many modern buildings are large windows, angled glass surfaces and glass roof structures. While the buildings thus contribute to the passive generation of energy, they require protection in summer from excessive build-up of heat. Not all sun protection systems are able to cope with the required dimensions and installation situations in the commercial property sector.

*Shaping the future is the basis on which we develop our ideas and implement new solutions.*

The MHZ k\_oax counter-pull system, however, has been specifically developed to fulfil the requirements in this area. The mod-

ern coaxial system combines functionality and technical perfection and satisfies all efficiency demands made of a glare and sun protection system. Large dimensions plus flexible geometry and methods of installation are features of the k\_oax systems.

We are the people to talk to for full support in the planning and execution of your major projects. Profit from our tailor-made, functional solutions and many years of project experience.

Showcased on the following pages are selected reference properties in which the counter-pull systems are used in differing forms and functions.

*Co- (in German ko-) is the Latin prefix for 'together (with others)'.  
Axōn in Greek means 'axle, shaft'.  
Coaxial – together in one axle – is the design principle  
of our counter-pull systems.*







## Kameha Grand · Bonn

COUNTER-PULL SYSTEMS FOR GLARE PROTECTION,  
SUN PROTECTION AND ACOUSTICS

The Kameha Dome forms the centrepiece of the Kameha Grand Hotel in Bonn, built in 2008. The glazed hall, which reaches up to 21 metres in height, acts as a foyer, function room and concert hall in one. Covering 1,330 square metres, it provides a highly modern space for exhibitions and conferences.

The MHZ k\_oax coaxial counter-pull systems, with a total surface area of around 1,500 m<sup>2</sup>, not only provide shade for the hall, but also contribute significantly to improving the acoustics. The technically ultra-modern systems and aesthetic blinds merge perfectly into the spectacular architecture of the hotel building. They also complement the modern lifestyle that the innovative Kameha Grand draws together out of the combination of the lively atmosphere of a business hotel and the privacy and exclusivity of one that is truly grand.

### Systems

- 86 systems
- Volume: c. 1,500 m<sup>2</sup> (total area) of k\_oax counter-pull systems



|             |                                            |
|-------------|--------------------------------------------|
| Architect   | Architekturbüro Karl-Heinz Schommer · Bonn |
| Client      | BonnVisio-Gruppe                           |
| Realisation | 2008                                       |
| Use         | Hotel                                      |





# BV NVZ · Freiburg

SPECIAL SHAPE COUNTER-PULL SYSTEMS FOR OPTIMISING LIGHT

Built in 2017, the Freiburg Civic Administration Centre follows the principle of openness and transparency. Floor-to-ceiling glazed façade elements and large skylights ensure optimum use of daylight and simultaneously retain the visual link with the outside world. As part of the net energy-plus building concept, simple technical solutions were selected that excel through efficient operation. In line with this objective, in addition to the coaxial counter-pull systems other MHZ units also provide for ideal glare and sun protection.

**Special feature**  
The triangular sails had to be installed overlapping on each of two different levels in order to prevent streaks of light in the offices. Cuts in the fabric also had to be made at the edges of the systems in order to go around the fittings suspended from the ceiling for the lighting shaped like a star-filled sky.



**Systems**  
· 22 internal triangular systems fitted on different levels  
· Volume: c. 320 m² (total area) of k\_oax counter-pull systems

Architect ingenhoven architects · Düsseldorf  
Client City of Freiburg  
Realisation 2017  
Use Administrative centre





Architect      slapa oberholz pszczulny | architekten ·  
Düsseldorf

Client          DEG Kämmergasse Cologne

Realisation    2008

Use              German investment and development  
company

## DEG · Cologne

### COUNTER-PULL SYSTEMS FOR GLARE AND SUN PROTECTION

Since 2011, the DEG Campus has seen the headquarters of the KfW banking group added to by a five-storey new building that is filled with light and crowned almost playfully by a striking 'Skybox'. While it was already in use as offices, MHZ k\_oax systems, covering in total nearly 700 m<sup>2</sup>, were retrospectively fitted to the new building.

Running straight up against each other and each 3.8 metres wide with a projection of 18.2 metres, 20 internal counter-pull systems provide ideal glare and sun protection for the DEG Campus.

A particular challenge of the retrofit was the installation on the movable, fully opening roof construction.



#### Systems

- 10 systems running straight up against each other, installed in a movable roof construction
- Volume: c. 690 m<sup>2</sup> (total area) of k\_oax counter-pull systems





Architect Gehry Partners · Los Angeles  
 Client Novartis Pharma AG  
 Realisation 2007-2009  
 Use Biotechnology and pharmaceutical company

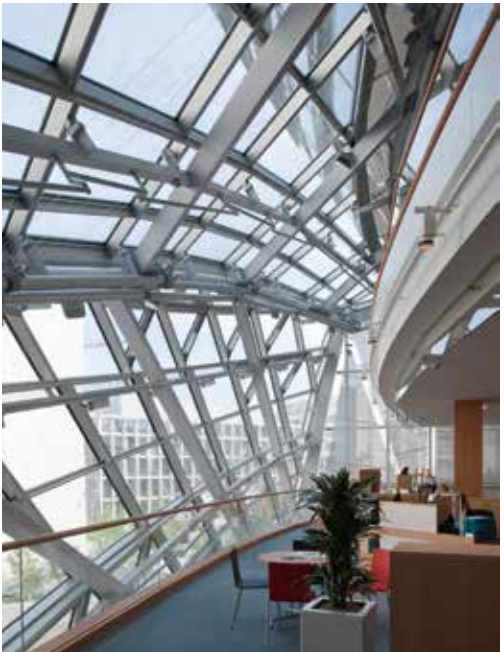


#### Special feature

The entire planning of the sun protection was done three dimensionally based on a 3D model of the building. All mounting brackets and the shape of all sun protection fabrics were individually adapted to the inner supporting structure.

#### Systems

- 417 systems
- Volume: c. 5,000 m<sup>2</sup> (total area) of k\_oax counter-pull systems



## Novartis · Basel

### COUNTER-PULL SYSTEMS IN SPECIAL SHAPES

The office building's appearance is like that of a large sculpture. A mix of façade surfaces with multiple folds, double bends and flat finishes form the impressive skin of the building in the shape of an origami-like structure.

It was the extraordinary geometry of the building that also presented the challenge in relation to the internal sun protection. Used over a total area of c. 5,000 m<sup>2</sup> are trapezoid, rectangular and triangular counter-pull systems, which are predominantly installed at an angle. The systems' dimensions are up to 6 metres in width and 12 metres in projection. They can be extended up as well as down. In order to optimise control of the climate in the building, the shades overlap each other and prevent airflow loss in the space between façade and sun protection system.



Special feature

The counter-pull systems are 3.2 metres wide and have an extended length of up to 19 metres. Practically invisible cross tubes made of Plexi-glas reduce fabric sag.

Systems

- 18 systems
- Volume: c. 1,100 m<sup>2</sup> (total area) of k\_oax counter-pull systems



# Congress Centre Nuremberg

COUNTER-PULL SYSTEMS FOR FLEXIBLE GLARE AND SUN PROTECTION



With around 36,000 m<sup>2</sup> of total usable space, the Nuremberg Congress Centre is a venue for trade fairs, conventions, conferences and product presentations. The conference rooms are connected to the restaurant, bar and VIP areas via open galleries. Glass roofs and a projecting slatted ceiling provide daylight

and transparency. The CCN provides a high level of spatial, technical and organisational flexibility, which is matched by the glare and sun protection that it uses. The MHZ counter-pull systems fit perfectly into the modern architectural style.

|             |                                                               |
|-------------|---------------------------------------------------------------|
| Architect   | S+P Heinz Seipel Gesellschaft von Architekten mbH · Nuremberg |
| Client      | NürnbergMesse Group                                           |
| Realisation | 2011                                                          |
| Use         | Convention and conference centre                              |



# Aquis Plaza · Aachen

COUNTER-PULL SYSTEMS FOR GLARE PROTECTION,  
SUN PROTECTION AND COLOUR DESIGN



## Special feature

The counter-pull systems, each around 2.5 metres wide and with a projection of 4.8 to 9.6 metres, were made for design reasons in different shades.

## Systems

- 31 systems
- Volume: c. 550 m<sup>2</sup> (total area) of k\_oax counter-pull systems

Built in 2015, the shopping centre and residential building orientates itself on the multi-layered façade structure of the surrounding existing development's make-up of small-scale plots. Large two-storey glass elements on the lower floors plus balconies and generously proportioned floor-to-ceiling window openings on the upper storeys open the building up to the shopping street and neighbourhood.

A total of 31 MHZ systems, installed as straight, horizontally rolled counter-pull systems covering a total area of 550 m<sup>2</sup>, provide optimum glare and sun protection.

|             |                                     |
|-------------|-------------------------------------|
| Architect   | Blauraum Architekten · Hamburg      |
| Client      | ECE-Gruppe & Strabag Real Estate    |
| Realisation | 2015                                |
| Use         | Residential and commercial building |





# DETAILS

## K\_OAX COUNTER-PULL SYSTEMS

| DESIGN                   | MIN. WIDTH       | MAX. WIDTH   | MAX. PROJECTION | MAX. AREA |
|--------------------------|------------------|--------------|-----------------|-----------|
| <b>k_oax 90</b>          |                  |              |                 |           |
| Cord guide or guide rail | 100 cm and above | up to 450 cm | up to 600 cm    | 25 m²     |
| <b>k_oax 132</b>         |                  |              |                 |           |
| Cord guide or guide rail | 100 cm and above | up to 600 cm | up to 1000 cm   | 50 m²     |
| <b>k_oax 180</b>         |                  |              |                 |           |
| Cord guide               | 125 cm and above | up to 600 cm | up to 1800 cm   | 70 m²     |

### Function

Internal protection from blinding light creates a pleasant, glare-free atmosphere. In addition, it reduces the level of heat getting into the building and lowers the need for power to cool it down.

### Shape

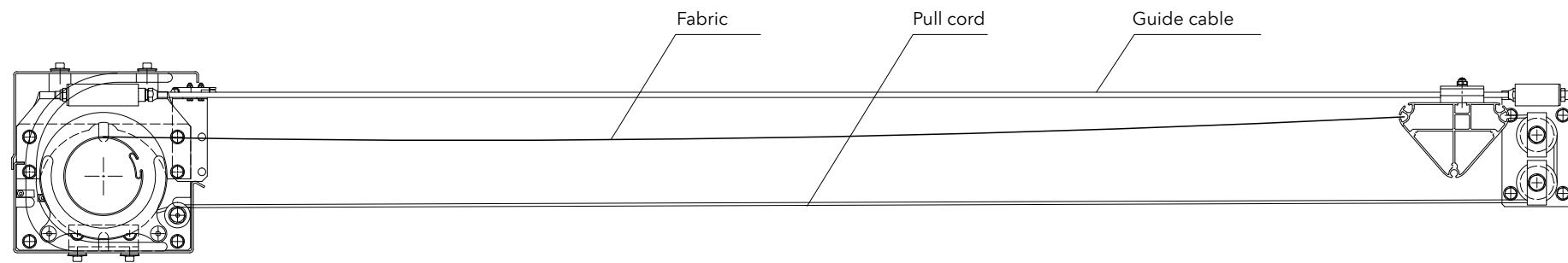
The counter-pull units' cable-tensioning system enables very varied protection from glare and sun. Almost any geometric shape can be shaded using a matching unit.

### Material

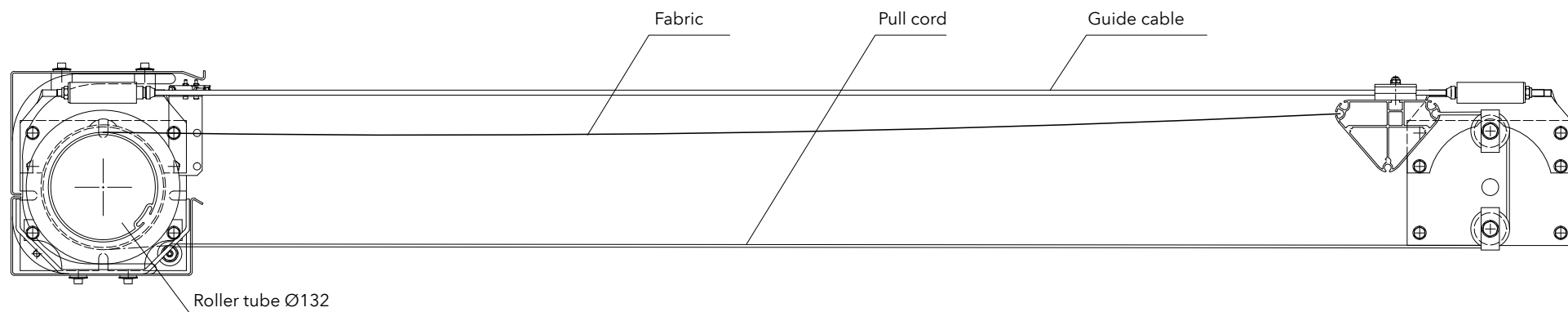
Various colours and textures make the glare and sun protection into a design element. A wide spectrum of materials are available for the fabric.

### Hardware

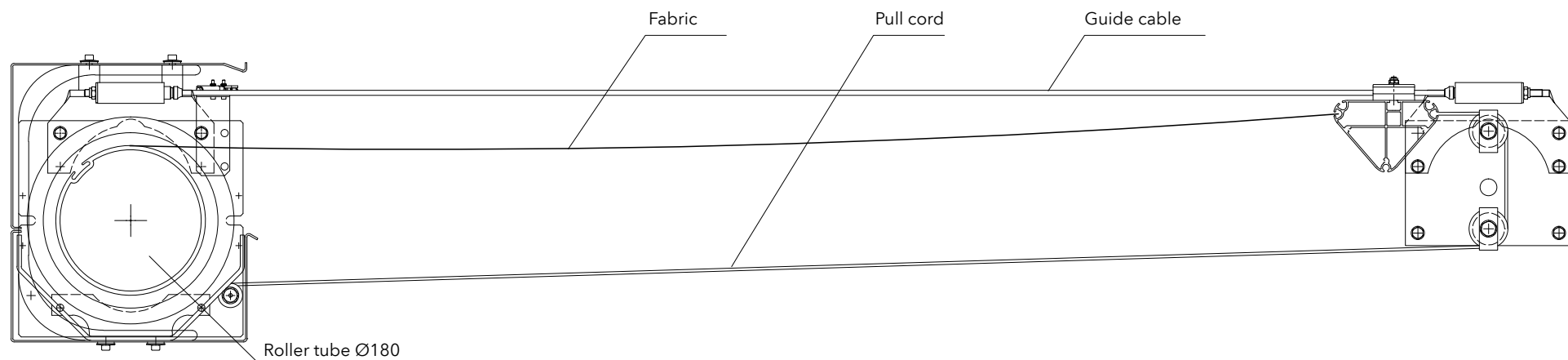
Thanks to the 'shaft in shaft' coaxial construction the fabric tension remains constant as it is rolled out. The result: taut, practically straight glare and sun protection.



k\_oax 90



k\_oax 132



k\_oax 180

# PRODUCT BENEFITS

## K\_OAX COUNTER-PULL SYSTEMS

- Made to measure to your specification
- Shaft in shaft system (coaxial) with counter-pull for optimum fabric tension when extended
- Can be fitted horizontally, vertically or at an angle
- Efficient glare and sun protection for extraordinary glass architecture
- Almost any geometric shape possible (trapezoid and triangle included)



PERFECTION AND INDIVIDUALITY HAVE ALWAYS BEEN DISTINCTIVE FEATURES OF OUR WORK. THEREFORE ALL OF OUR SOLUTIONS SHOW UP A UNIQUE SIGNATURE.

# REFERENCES

WE HAVE REALISED THE FOLLOWING PROJECTS

BILDUNGSCAMPUS HEILBRONN · PEEK+CLOPPENBURG COLOGNE · BMW-WELT MUNICH · CITY POINT KASSEL · UNI-  
VERSITY CENTRAL LIBRARY FREISING · REICHSTAG BERLIN · KIT COLLEGIATE BUILDING KARLSRUHE · BISMARCKSCHULE  
STUTTGART·VOLKSWAGENDESIGNCENTERPOTSDAM·TWINTOWERVIENNA·DRESDENAIRPORT·REGIONALSAVINGSBANK  
LAATZEN · EURO-PARK SALZBURG · KAMEHA GRAND BONN · STATE EXHIBITION CENTRE STUTTGART · NEW ADMINISTRA-  
TION CENTRE FREIBURG · DEG COLOGNE · NOVARTIS BASEL · TRADE FAIR CONGRESS CENTRE NUREMBERG · AQUIS PLAZA  
AACHEN · MAZDA LEVERKUSEN · ST. MAURITIUS CLINIC MEERBUSCH · CASA ALTRA DÜSSELDORF · PINAKOTHEK MUNICH  
· BAYER COMMUNICATIONS CENTRE LEVERKUSEN · TRADE FAIR HALL 3A NUREMBERG · MERCEDES MUSEUM STUTTGART  
· GRAMMAR SCHOOL MUNICH-GRÜNWALD · ALTER WALL HAMBURG · SAVINGS BANK TUTTLINGEN · TESTO TITISEE ·

We are happy to provide further information on our reference jobs and projects on request.





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