

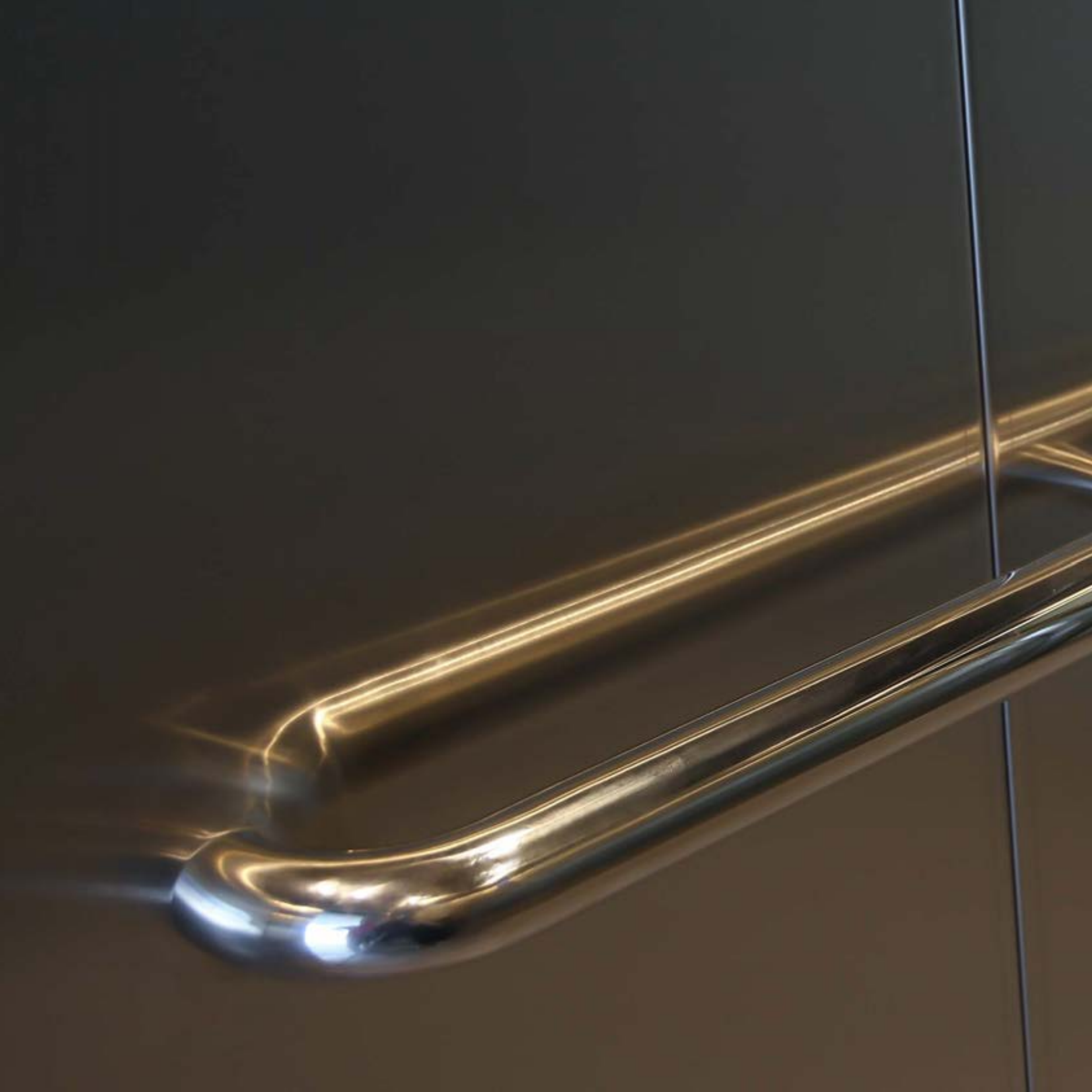


WITTUR

LIFT IS MORE

safety **in** *motion*™

Histories of elevators and architects in a vertical world





A building designed in the **21st century** must take different needs into account. Aesthetic appeal has to be balanced with functionality, safety and budget needs.

LIFT IS MORE

Sometimes the design of **elevator** systems is treated like a commodity and not as a further possibility to give a building its distinctive style.

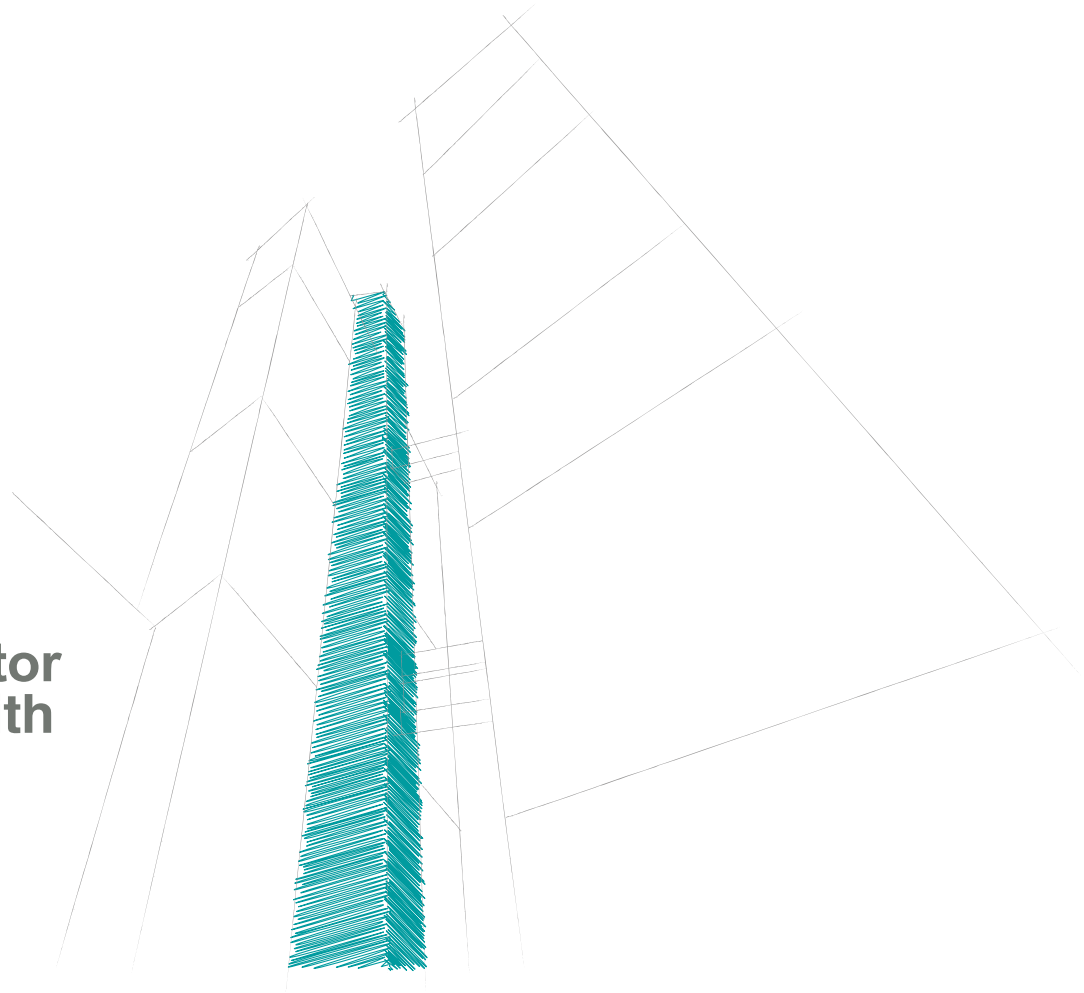
This book aims at introducing some architectural **project** where the elevator design was considered not only for its usefulness, but also as an element of style: an additional space where the pen of the designer can incorporate the overall building concept.



Liftis



Together with the design team and the elevator installer, to provide elevator components which fits with the original **vision** of the architect.



Some elements of the building design, such as the elevator systems, must first and foremost provide a safe and reliable transportation solution for the people living and working there. This is why many building designs, although impressive, sometimes fail to innovate as far as elevator systems are concerned: they treat elevators as a commodity which needs to be provided, and not an element of design in itself.

Wittur has been developing special elevator solutions for more than 40 years. We do not install nor service elevators; we work as partners in special projects, together with the design team and the elevator installer, to provide elevator components which fits with the original vision of the architect.

More

Wittur has helped developing an **original concept** encompassing the elevator system and making it part of the building structure

We cooperate to make this vision come true, and at the same time we provide industrialised components with the same lifecycle and the same safety level of standard elevator components. The technological development of the elevator component industry has taken away most structural limitations with which architects of the past had to deal. The elevator system of the 21st century can thus become one of the landmarks of a peculiar building design and contribute to the embodiment of the original vision. In this book you will have a chance for inspiration, coming from a selection of project in which Wittur has helped developing an original concept encompassing the elevator system and making it part of the building structure. We look forward to work with you as a partner to push the boundary of elevator design one step forward.

ELEVATOR TECHNOLOGY TIMELINE

236 BC ROMAN ARCHITECT VITRUVIUS REPORTS THAT ARCHIMEDES BUILT HIS FIRST ELEVATOR

1405 KONRAD KYESER DESCRIBES AN ELEVATOR LIFTED BY PULLING ROPES IN HIS BOOK "DE REBUS BELLICIS"

1743 FLYING CHAIR IN THE CHATEAU DE VERSAILLES, FRANCE

1793 IVAN KULIBIN BUILDS THE FIRST SCREW BASED ELEVATOR AND INSTALLS IT IN THE WINTER PALACE IN SAINT PETERSBURG, RUSSIA

1823 BURTON AND HORMER BUILD AN "ASCENDING ROOM" TO A 37 METER HIGH PLATFORM FOR UP TO 20 PAYING VISITORS TO ENJOY THE VIEW OVER LONDON

1845 ARCHITECT GAETANO GENEVOESE BUILDS THE "FLYING CHAIR" IN THE ROYAL PALACE OF CASERTA NEAR NAPLES, ITALY

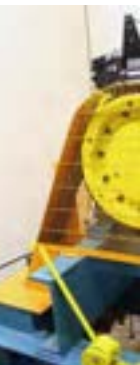
1853 ELISHA GRAVES OTIS DEMONSTRATED HIS ELEVATOR SAFETY BRAKE AT THE NEW YORK EXPOSITION AT CRYSTAL PALACE. HE IS LIFTED ON AN ELEVATOR AND CUTS THE ROPE WITH AN AXE

1853 FROST AND STUTT COMPANY SUCCESSFULLY DEVELOPS A COUNTERBALANCE-TYPE, TRACTION-METHOD ELEVATOR CALLED THE "TEAGLE" IN UK

safety in motion™



Modernisation



A major drive for the modernization of existing elevators is to update the system to new safety requirements.



The safety level of elevators has been continuously improved over the years. The elevator is the unchallenged champion of safe travel, being by far the safest transportation device ever conceived by the human mind. Having said that, new challenges always arise in our society. Family accessibility is becoming imperative in western countries; a relaxed user experience when using elevators can be achieved by deploying new components engineered for travel comfort, such as roller guide shoes instead of sliding guide shoes. The availability of a new generation of panoramic doors and cars was also instrumental in changing the attitude of the general public towards the use of elevator systems. Energy efficiency of buildings has recently become an important feature. By using the latest energy-efficient lift machines combined with state-of-the-art control systems the total use of energy per elevator run can be reduced dramatically. Last but not least, special elevator components can be used to achieve a specific mood for a project. An elevator then becomes a place where people come into contact and share the experience of a smooth ride.



The **elevator** systems can be seen as the **blood vessels** of the building, a **metaphor of life pulsating into metal** and an **icon of movement and vitality**.

A panoramic elevator can thrill the passengers by providing them with fresh architectural perspectives: riding in an elevator becomes then the preferred way to understand the original vision of the architect. Many architects have explored the new possibilities and have developed this concept in their works. Among the diversity of design approaches, three main trends appear:

- **Simulate a traditional design** with specially developed modern components. In this case, the outcome is an elevator that looks like an old elevator, but which features state-of-the-art riding comfort and safety. This is a possible solution when modernizing an old elevator in an ancient building, or when introducing a new elevator in a theatre or in a public building where elevators were not part of the project.
- **Let a modern design enter a traditional setting** and capitalise on the clash between old style and modern design. This is another way to insert an elevator, and results can be very effective
- **Create a peculiar design for the elevator** which is in line with the vision of the whole new building. This is the way towards the creation of an added value elevator, which is going to offer a peculiar experience to passengers moving inside a newly designed building.



ELEVATOR TECHNOLOGY TIMELINE

- 1857** FIRST PASSENGER ELEVATOR INSTALLED IN BROADWAY, NEW YORK
- 1867** HYDRAULIC ELEVATOR EXHIBITED AT THE PARIS EXPOSITION BY LEON EDOUX
- 1870** EQUITABLE LIFE BUILDING IN NEW YORK IS THE FIRST OFFICE BUILDING TO HAVE PASSENGER ELEVATORS
- 1874** SCHINDLER FOUNDED IN LUCERNE, SWITZERLAND, BY ROBERT SCHINDLER
- 1880** WERNER VON SIEMENS EXHIBITS AN ELECTRIC POWER ELEVATOR AT THE MANNHEIM EXPOSITION
- 1887** ALEXANDER MILES OF DULUTH, MINNESOTA (USA) PATENTS AN ELEVATOR WITH AUTOMATIC DOORS TO CLOSE OFF THE ELEVATOR SHAFT
- 1895** FRANK SPRAGUE DEVELOPS FLOOR CONTROL, ACCELERATION CONTROL AND SAFETIES AND INSTALLS 584 ELECTRICAL ELEVATORS BEFORE SELLING HIS COMPANY TO OTIS ELEVATOR COMPANY
- 1898** AUGUSTO STIGLER INSTALLS HIS FIRST ELECTRIC ELEVATOR IN MILAN, ITALY

safety **in** **motion**™

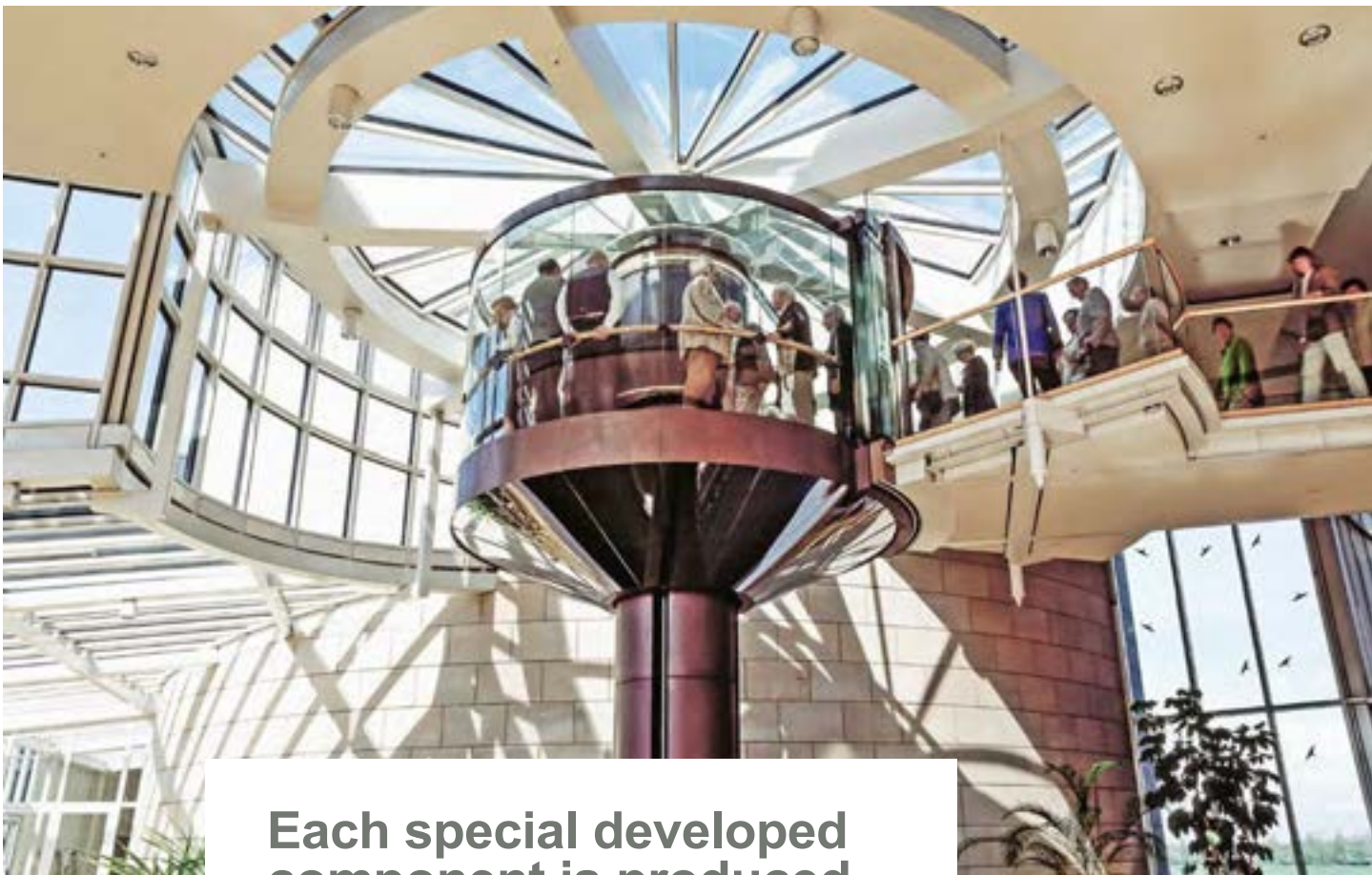
Reliability



A special elevator performs like a very good standard elevator, and its **working cycle is measured in decades**, exactly like any other elevator system manufactured using Wittur components.

Elevator systems can have a peculiar design or not, but they cannot but fulfil all safety norms and standards. This is true also when lifecycle of a special elevator is taken into account. Wittur has an industrial approach to all its component design. Our expertise in designing and manufacturing all kind of elevator components, from drives to doors, from cars to safety gears, from complete elevators modules to single high performance devices is evident in the management of special elevator design. In a nutshell: a special elevator performs like a very good standard elevator, and its working cycle is measured in decades, exactly like any other elevator system manufactured using Wittur components.

special developments
 designed for **long operating life**
 [with full compliance to safety norms and codes]



Each special developed component is produced with **industrial production criteria** in mind.

LANDTAG (STATE PARLIAMENT) OF NORTH RHINE-WESTPHALIA VISITOR'S LIFT, OFFICIALLY OPENED ON 2 OCTOBER 1988 IN DÜSSELDORF.

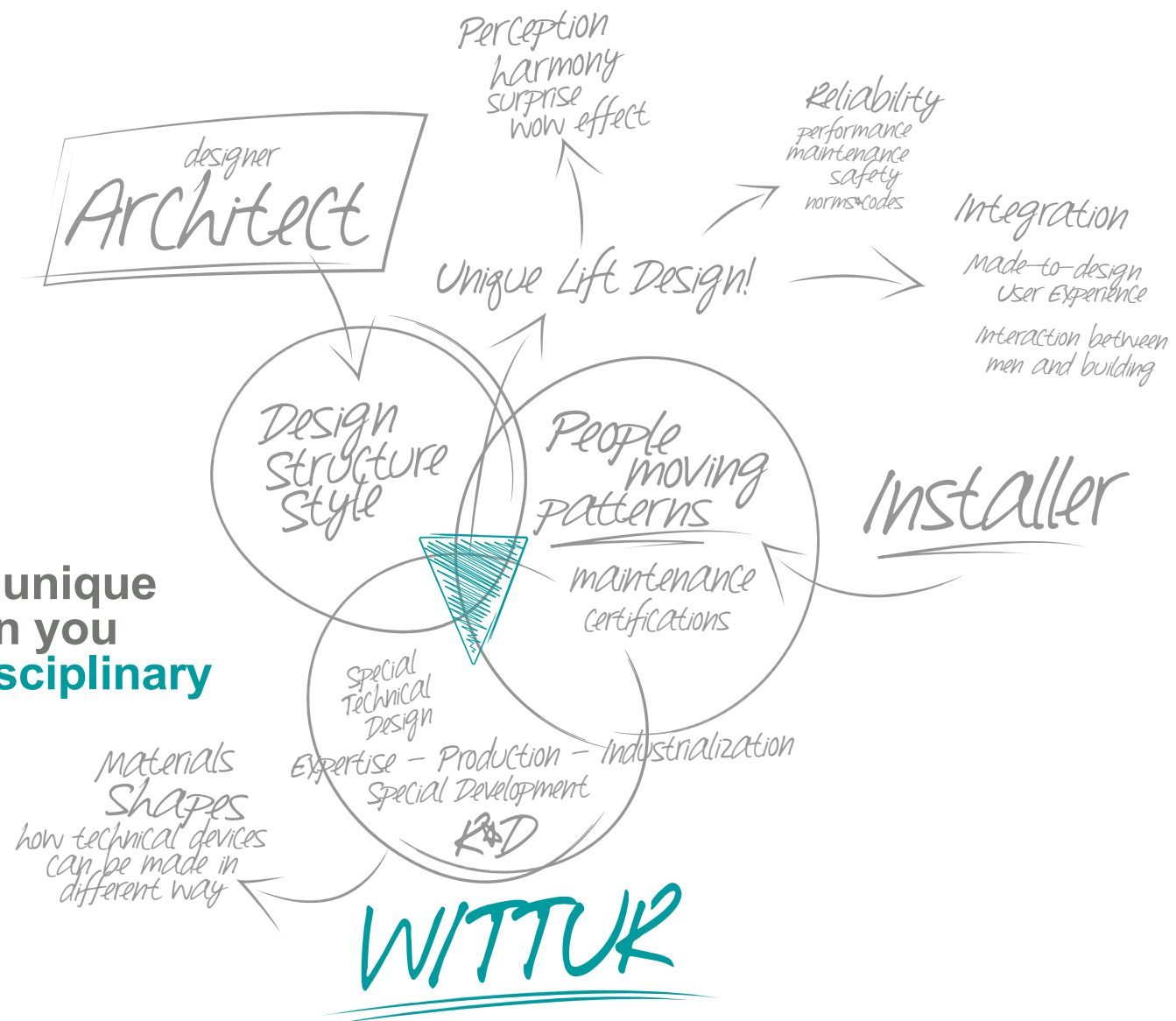
We pride ourselves when we are able to provide special solutions for a special project, and the more so when the project successfully passes the test of time and provides years of smooth rides and a comfortable user experience. Each special developed component is produced with industrial production criteria in mind; most special components are available with compliance to global fire rating norms, and all of them comply to lift norms and codes without any compromise due to design, in line with Wittur's commitment to "Safety in motion"

safety in motion™

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Co-thinking



To develop an unique elevator design you need a **multidisciplinary** approach.



A design team including the Architect, the elevator install and service company, the project consultants and the elevator components supplier is where an unique elevator design can be developed.

Each member of the team brings a **peculiar expertise to the mix**, so that each aspect can become part of the final design. This is not only true when dealing with large special new builds, where multinational elevator installation companies and global architecture firms are involved, but also when smaller modernisation projects dealing with peculiar building of the past.

Sometimes making a **design** statement is as easy as choosing the right cladding material.



Sometimes you don't need to develop a completely new elevator component to affirm your architectural vision. Many design stages are possible.

- Wittur has a wide range of door types, dimensions and finishes complemented by a wide range of car finishes and accessories. A perfect coordination of materials and finishes can sometimes be achieved just by checking what is available and selecting the best fitting materials
- The use of **panoramic cars and doors** can result in a light elevator design which naturally blends with the building environment, without imposing itself.
- The use of **special industrialised door designs**, such as round or underdriven door designs, can take you a further step into a tailored elevator design; technical components can be hidden from view so that design lines are not hidden by technical features
- **Special components can be designed to perfectly fit your project.** In this case, the elevator can become a design statement in itself, and offer a pivotal point for the environment perception.



ELEVATOR TECHNOLOGY TIMELINE

1973 THYSSEN ENTERS THE ELEVATOR BUSINESS. IT WILL ALTER FORM THYSSENKRUPP ELEVATOR

1996 SCHINDLER INTRODUCES MICONIC 10 THE FIRST EXAMPLE OF "HALL CALL" DESTINATION SYSTEM.

1996 KONE INTRODUCES MACHINE ROOMLESS ELEVATOR DESIGN WITH THE MONOSPACE®

2000 OTIS INTRODUCES GEN2™ MACHINE ROOMLESS ELEVATOR DESIGN



safety in motion™

Accessibility



Accessibility has always been a **keyword** when installing an elevator.

After all, skyscrapers exist only because elevators were invented. In the western world, the emergence of radically new city tower designs combines with an aging population and a raising perception of the advantages of barrier free designs to drive the introduction of fully accessible building for everybody, or, in other words, family accessible buildings. Wittur can provide components in total compliance with worldwide norms and codes, so that all accessibility needs are fully taken into account when designing a special elevator.



CENTRE GEORGES
POMPIDOU, PARIS,
FRANCE

Designing family accessible buildings is both a **technical challenge** and an **ethic commitment** for the 21st century architects.

ELEVATOR TECHNOLOGY TIMELINE

2004 TOSHIBA INSTALLS THE THEN WORLD'S FASTEST ELEVATOR (1010 M/S) AT TAIPEI 101

2007 HYUNDAI ELEVATOR RELEASES THE WORLD'S FIRST POWER REGENERATING ELEVATOR INVERTER (LOWATT)

2050? POSSIBLE FIRST INSTALLATION OF THE "SPACE ELEVATOR" CONCEPT USING A TETHER BETWEEN EARTH SURFACE AND A STATION IN GEOSTATIONARY ORBIT TO MOVE MATERIAL TO SPACE

safety **in** *motion*™



summary

twentyeight projects

A SELECTION OF PROJECTS
WHERE WITTUR PROVIDED
KEY COMPONENTS FOR THE
ELEVATOR SYSTEMS



Project #

Project

City

Country

Page nr

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aesthetic solutions

large scale projects

bespoke technology projects

1

APPLE STORE NEW YORK U.S.A.

BOHLIN CYWINSKI JACKSON

RETAIL STORE FOR COMPUTERS AND CONSUMER

ELECTRONICS

OPENED IN 2006

ACCESS ON-LINE
INFORMATION FOR THIS
PROJECT WITH YOUR
SMART-PHONE OR
TABLET



http://www.wittur.com/special/applestore_nyc

THE ROUND GLASS ELEVATOR
IS IN THE CENTER OF THE CUBIC
GLASS STRUCTURE ON FIFTH
AVENUE

A glass design concept
complemented by
a glass elevator
construction.

The midtown Manhattan Apple Store located on Fifth Avenue became an iconic architectural design thanks to its external glass cube designed by Bohlin Cywinski Jackson. The shop itself is located downstairs, and a glass staircase, which has also become a landmark of many other Apple stores worldwide, leads visitors to the retail space. To maintain full accessibility of the shop, a dazzling round glass elevator was installed in the centre of the glass staircase. Wittur provided its LUNA full glass round doors with underdriven mechanism. They are a perfect complement of the outer shop design, which is totally made of glass.





2

CENTRE POMPIDOU

PARIS FRANCE

RENZO PIANO, RICHARD ROGERS, GIANFRANCO FRANCHINI,
OVE ARUP&PARTNERS
MULTICULTURAL COMPLEX BUILDING
COMPLETED IN 1977

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<http://www.wittur.com/special/centrepompidou>

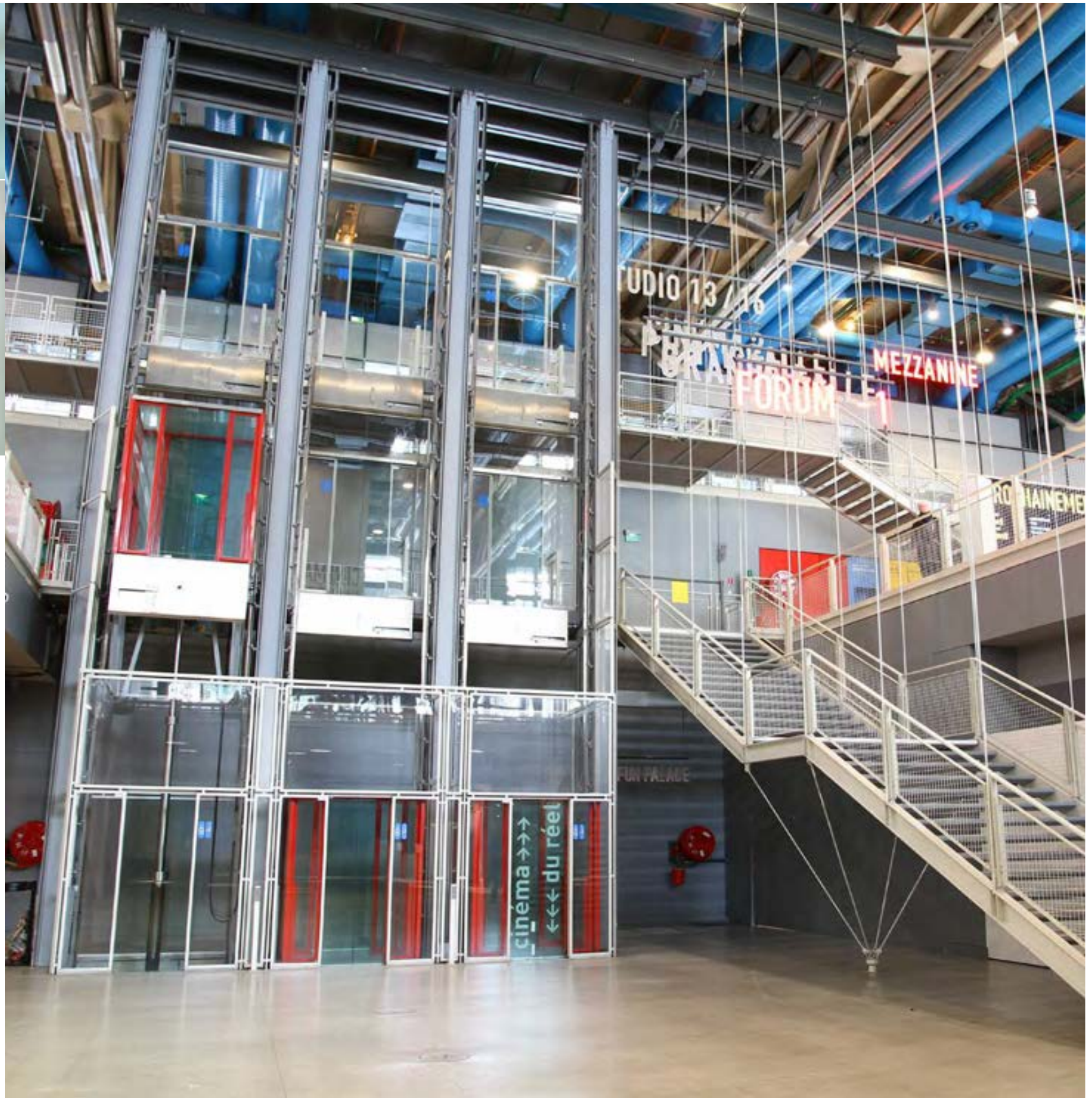


WITTUR COMPONENTS
ARE USED IN ITS
PASSENGER ELEVATOR
AND IN ITS HEAVY WEIGHT
LIFTERS

The central panoramic
elevators in the
lobby feature Wittur
NETTUNO glass framed
underdriven Wittur
doors.

Centre Georges Pompidou is a multicultural complex building designed by Italian architect Renzo Piano, British architect Richard Rogers and Italian architect Gianfranco Franchini, assisted by Ove Arup & Partners. The centre was completed in 1977. It became very popular, albeit some criticism arose about its very distinctive high-tech style standing in the middle of Paris centre traditional houses. In 2007 the jury of Pritzker Architectural Prize, while awarding Richard Rogers career, stated that Centre Georges Pompidou "revolutionized museums, transforming what had once been elite monuments into popular places of social and cultural exchange, woven into the heart of the city". Wittur components are used in its passenger elevator and in its heavy weight lifters. Notably, the central panoramic elevators in the lobby feature Wittur NETTUNO glass framed underdriven Wittur doors.





3

PALAIS GARNIER

PARIS FRANCE

CHARLES GARNIER

THEATRE FOR BALLET AND OPERA

COMPLETED 1875

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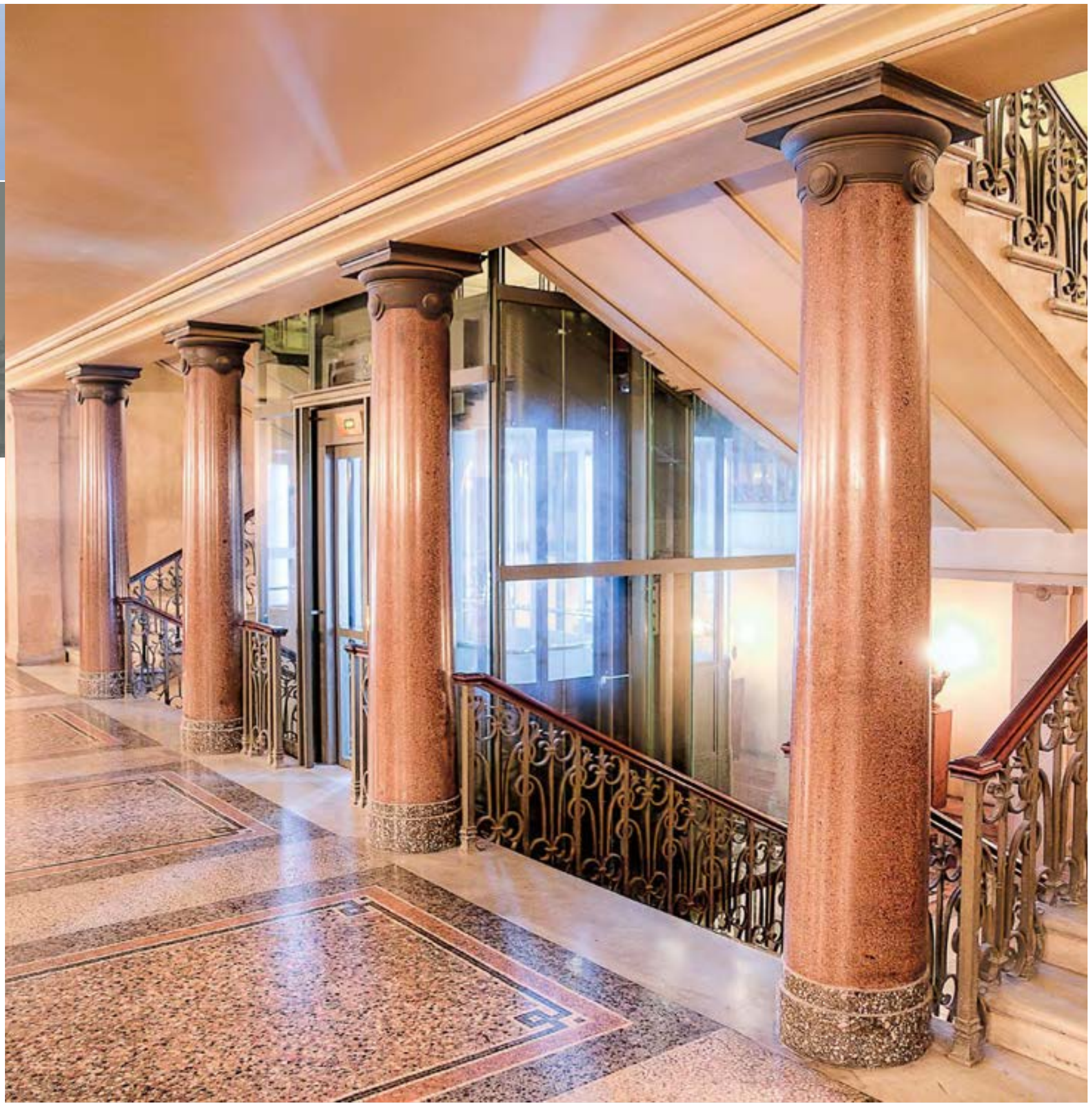
<http://www.wittur.com/special/palaisgarnier>



Wittur was challenged to provide a new car with state-of-the-art safety but looking like it was built in 19th century

The Palais Garnier is a 1,979-seat opera house, which was built from 1861 to 1875 for the Paris Opera. It soon became known as the Palais Garnier in recognition of its architect, Charles Garnier. The theatre is also often referred to as the Opéra Garnier. When a total renovation of an historical wooden elevator was called for, Wittur was asked to provide a new car that, while offering the safety and performance of a modern elevator, would be able to retain the beaux-art style which characterizes the elaborate ornamentation of the interior of Palais Garnier.

To achieve this, the car was designed with 3D cad software. Its metal structure has no visible edges, as all surfaces have a rounded junction. Accessories follow the style of the Palais; moreover, special glass framed panes were designed for its landing doors. They have a glazed design in their lower part which provides a visual continuity with the balustrade.





We wanted to insert
the new lift system as
seamless as possible
in the 19th century
interior design of
Palais Garnier





THE CAR WAS DESIGNED
WITH 3D CAD SOFTWARE
WITH ROUNDED EDGES.

VIEW OF THE GLASS
SHAFT OF THE ELEVATOR



4

HOTEL PUERTA AMERICA

MADRID
SPAIN

FELIPE SAEZ DE GORDOA (SGA ESTUDIO) HOTEL STRUCTURE
 NORMAN FOSTER, JEAN NOUVEL, ZAHA HADID ET AL. INTERIOR DESIGN
 HOTEL BUILDING
 COMPLETED 2007

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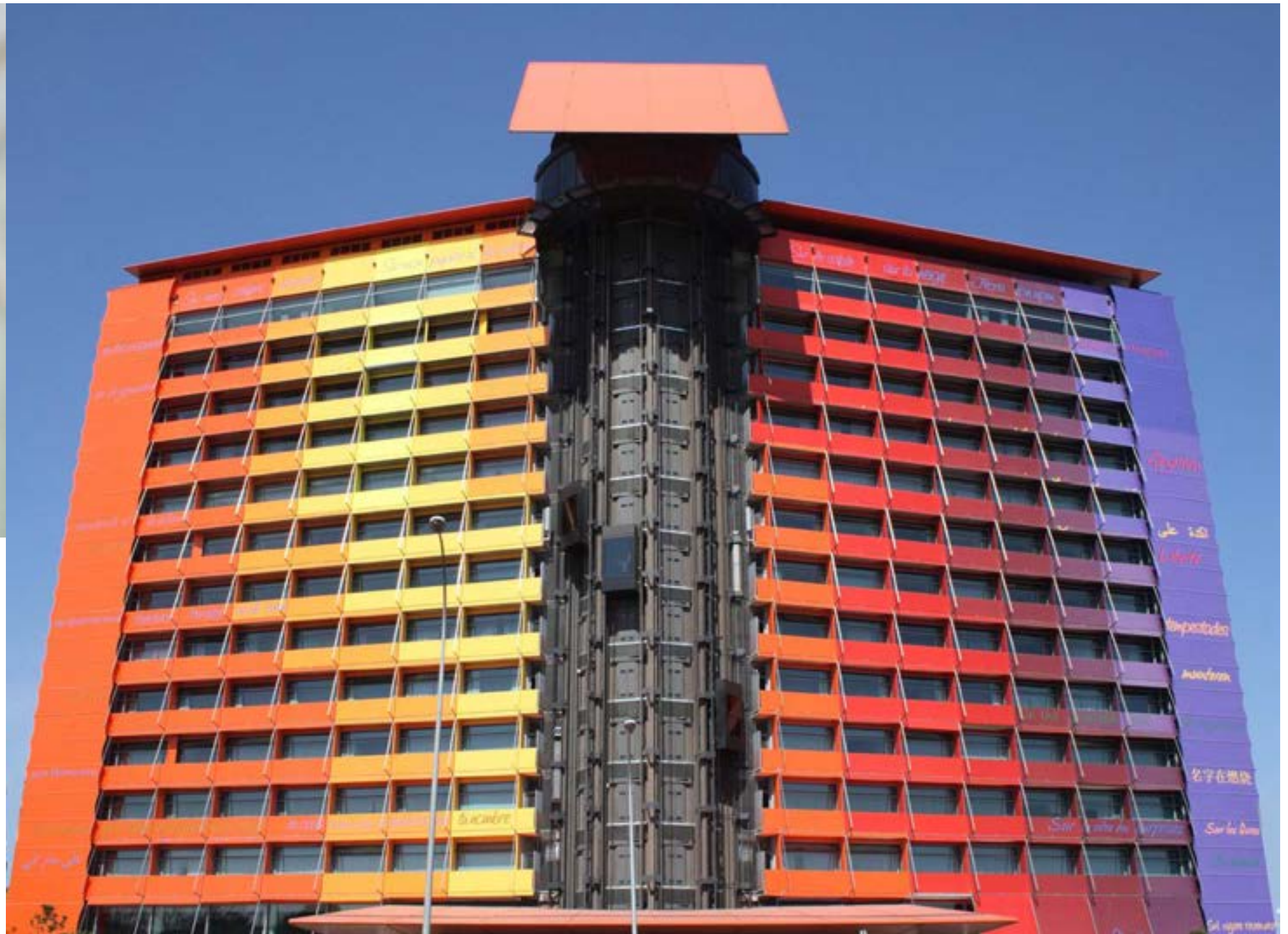
<http://www.wittur.com/special/hotelpuertaamerica>

The Hotel Puerta America was started as a project of Hoteles Silken to promote the creation of a most peculiar and unconventional Hotel. Nineteen Architectural companies were involved in the project to design the interiors of this hotel with the freedom to create spaces that could reflect the unique vision of each architect. Details, materials, shapes, have been used by each creative mind to develop this vision and offer a memorable experience to the hotel guests. The hotel structure was designed by Felipe Sáez de Gordo (SGA Estudio); the architects involved in the project were: Arata Isozaki & Associates; Arnold Chan of Isometrix Lighting and Design; Ateliers Jean Nouvel; Christian Liaigre; David Chipperfield; Fernando Salas; Foster + Partners; Jonathan Bell; Harriet Bourne; Jason Bruges; Javier Mariscal; John Pawson; Kathryn Findlay; Marc Newson Ltd; Oscar Niemeyer; Plasma Studio (Eva Castro and Holger Kehne); Richard Gluckman; Ron Arad; Teresa Sapey Estudio; Victorio & Lucchino; Zaha Hadid Architects. The Hotel extends for more than 34,000 sqm of



Wittur central opening Hydra doors with two glass windows per panel are used in the external elevator system

interior space divided into twelve floors. All floors feature a central lobby served by the elevator system, which is prominently featured in the middle of the hotel Façade, being an external elevator design. Wittur central opening Hydra doors with glass framed panels are used in the elevator system.

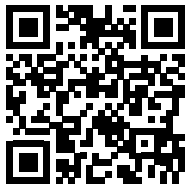


5

MOROCCO MALL CASABLANCA MOROCCO

ARCHITECT DAVIDE PADOA OF DESIGN INTERNATIONAL
OPENED SINCE 1ST DECEMBER 2011

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<http://www.wittur.com/special/moroccomall>



VIEW OF THE GLASS
SHAFT OF THE ELEVATOR

Visitors have the opportunity to take a ride through the centre of the cylinder-shaped aquarium by using a round panoramic lift fitted with Wittur Luna doors



Morocco Mall is the largest shopping centre in Africa with 250 000 sqm of floor space in Casablanca. The mall was designed by Architect Davide Padoa of Design International, London, and opened on December 1st, 2011. The mall features a massive 1,000,000 litre aquarium that contains over 40 different species of fish. Visitors have the opportunity to take a ride through the centre of the cylinder-shaped aquarium by using a round panoramic lift fitted with Wittur Luna doors. Moreover, Wittur also developed a unique closing system for its Luna round doors in a second panoramic elevator system which is installed in the shopping area. The bespoke closing system is used to adapt the panoramic round doors to the oval-shaped glass elevator shaft.





It is like riding in the Nautilus, Capt. Nemo's submarine in Jules Verne's "20,000 leagues under the sea"





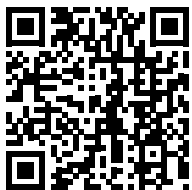
TWO LEVELS OF
TRANSPARENCY: THE
GLASS ELEVATOR AND
THE ROUND-SHAPED
AQUARIUM



6

APPLE STORE COVENT GARDEN

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LONDON UNITED KINGDOM

BOHLIN CWINSKI JACKSON
MARK PINNEY ASSOCIATES
COMPLETED 2010

http://www.wittur.com/special/applestore_coventgarden

One of the world's biggest Apple stores opened in 2010 in Covent Garden, London, in the Bedford Chambers building originally built by William Cubitt in 1876. The shop design by Architects Bohlin Cywinski Jackson and executive Architect Mark Pinney Associates combines the old exposed brickwork of the original building with stone floors and oak tables where products are on display. Visitors enter into a wide open atrium covered by a glass skylight, from which they can access separate rooms dedicated to specific products and other services placed on different floors. The elevator system is in an open shaft and it is fully panoramic. A special requirement of this project was to leave the very high arches of the original building as untouched as possible. To achieve this, Wittur supplied special Nettuno full glass doors with underdriven door drive; the outstanding landing door glass panels dimensions (3340 mm height and 1120 mm width) account for a pleasing aesthetic attractiveness of the lift system, as the glass door cover the full surface of the arches without visually interrupting them, thanks to the underdriven door mechanism and sill design with components in stainless steel.



THE MECHANISM OF
WITTUR NETTUNO DOOR
IS COMPLETELY HIDDEN
FROM VIEW.

The elevator is a
33-passengers, 4-stop
system with a rated load
of 2500 kg and a rated
speed of 1,0 m/s.



7

ORIENTAL PEARL TOWER

SHANGHAI CHINA

JIANG HUAN CHEN, LIN BENLIN, ZHANG XIULIN
COMPLETED 1994

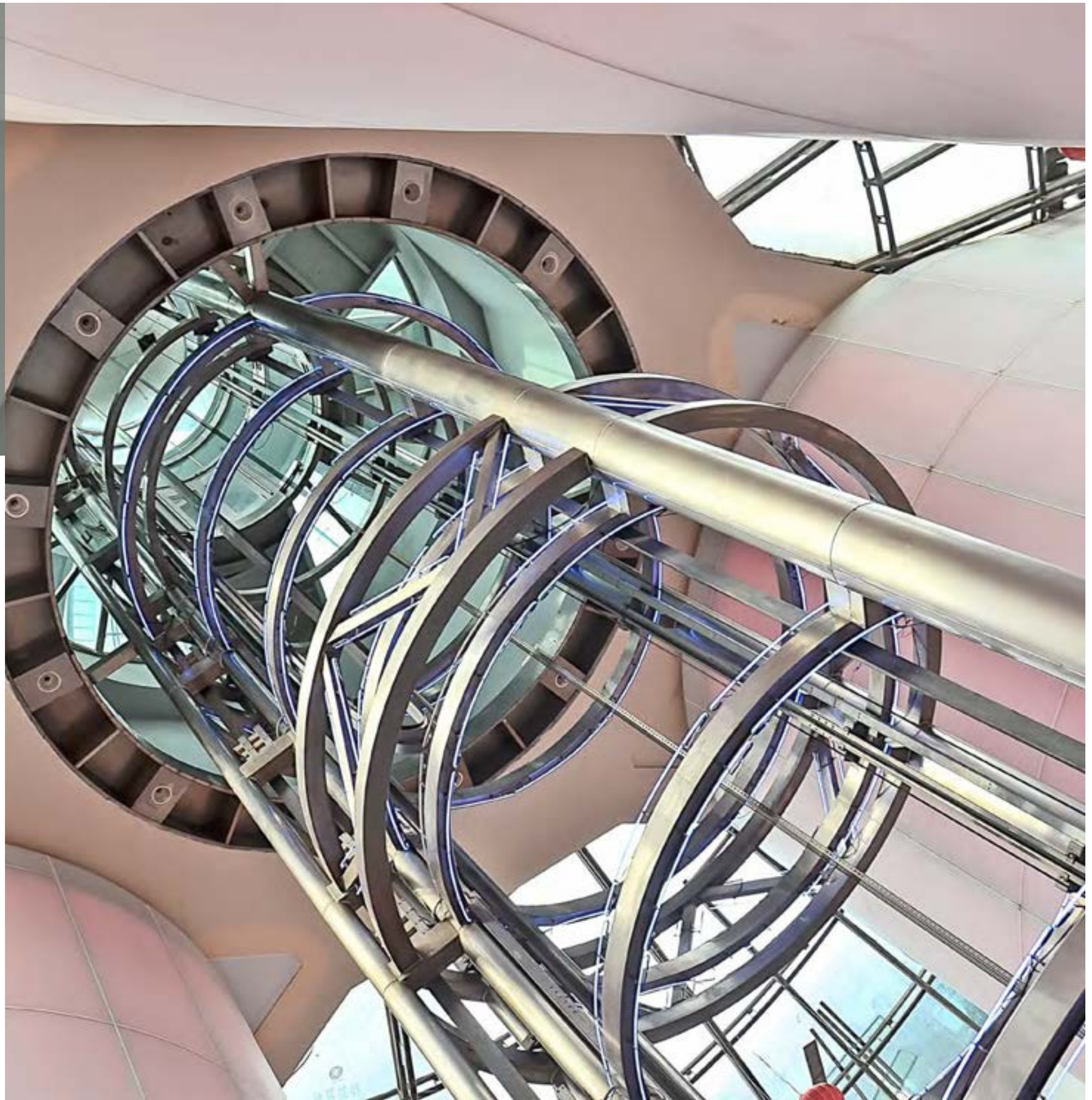
A round glass elevator design complements the design of the tower, based on pearl spheres.



The Oriental Pearl TV Tower in Shanghai, China, was the tallest structure in China from 1994 to 2007 with a total height of 468 m. Its principal designers were Jiang Huan Chen, Lin Benlin and Zhang Xiulin. Construction began in 1991, and the tower was completed in 1994. Its distinctive design features 11 spheres of different sizes. The building contains exhibition facilities, restaurants and a shopping mall. There is also a 20-room hotel called the Space Hotel between the two large spheres. Wittur supplied LUNA round glass framed doors for its panoramic lift system (80 m. rise), as well as Hydra doors for the 7.0 m/s lift systems rising at 264 m. and 320 m.

THE HIGHEST
OBSERVATORY LEVEL,
(KNOWN AS THE SPACE
MODULE) IS AT 350 M.





ORIENTAL PEARL TOWER

SHANGHAI
CHINA

THE IMPOSING VIEW
OF THE PANORAMIC
ELEVATOR SHAFT



A TOUCH OF COLOUR
INSIDE THE MAIN
ENTRANCE HALL



INTERNAL VIEW OF THE
LIFT SHAFT



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<http://www.wittur.com/special/orientalpearltower>

THE TALLEST
STRUCTURE IN CHINA
FROM 1994 TO 2007



**Mixing traditional red
lights with modern
elevator design**

∞

ARC DE TRIOMPHE

PARIS

FRANCE

JEAN CHALGRIN

COMPLETED 1806

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<http://www.wittur.com/special/arcdetriomphe>

The Arc de Triomphe de l'Étoile is one of the most famous monuments in Paris. It honours those who fought and died for France in the French Revolutionary and the Napoleonic Wars, with the names of all French victories and generals inscribed on its inner and outer surfaces. The monument was designed by Jean Chalgrin in 1806 in a Neoclassical style based on ancient Roman architecture, in particular by the Roman Arch of Titus. The monument stands 50 metres in height, 45 m in width and 22 m in depth. A new lift was installed in 1997 to provide access to the monument also for people with reduced mobility. Due to the restraints of the historical monument, a peculiar semi-circular shaft was obtained in the right pillar. Wittur supplied single panel type 71 Luna round doors with underdriven mechanism for the elevator located inside the right pillar, as the door opening was on the round side. The elevator has a total travel height of 54 meters, a rated load of 14 people / 1050 kg and a travel speed of 3.15 m/s.



This imposing 50-metre structure is based on ancient Roman architecture; nevertheless, modern lifts have been installed to facilitate ascension to the top.





9

CASTELO DE S. JORGE LISBOA PORTUGAL

JOAO PEDRO FALCAO DE CAMPOS
COMPLETED 2010

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<http://www.wittur.com/special/castelodesjorge>



THE UPPER ELEVATOR
STOP WITH GLASS WALLS
TO LET NATURAL LIGHT
ILLUMINATE THE SHAFT.

**It's a circuit through
two buildings and their
courtyards. It is an
innovative and cheaper
solution, much more
respectful of the pre-
existing architectures.**

The project target was to establish an assisted pedestrian access between downtown Lisbon and the hill of the Castle of São Jorge, to push adoption of public transportation means in the city centre and to revitalize the surrounding urban area with a series of strategic interventions. The core of this project was the restoration of an old building façade in Figueiras Street, which gives access to a transparent glass box which acts as an elevator shaft and at the same time provides light to the ground floor. Inside the glass shaft, Wittur provided a triplex elevator package, 1000 kg, 7 stops, with a speed of 1 meter per second. The architect of this project, which won the BIAU (Bienal Iberoamericana de Arquitectura y Urbanismo), is João Pedro Falcão de Campos.





VIEW OF THE OPEN AIR
ELEVATOR SHAFT



CASTELO DE S. JORGE

LISBOA
PORTUGAL

ACCESS ON-LINE
INFORMATION FOR THIS
PROJECT WITH YOUR
SMART-PHONE OR TABLET



<http://www.wittur.com/special/castelodesjorge>



THE PROGRAM OF THIS PROJECT IS WORTHY OF APPLAUSE,
HAVING TAKEN INTO CONSIDERATION THE TECHNICAL
POSSIBILITIES, THE PRE-EXISTING SITUATION AND THE
AVAILABLE RESOURCES.



The jury awarded not only the quality of the design, but also highlighted the importance of social intervention to improve the quality of life by making the castle hill more accessible from the city center also to families and people with reduced mobility.

WITTUR MARINE ELEVATOR

COMPONENTS



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INFORMATION FOR THIS
PROJECT WITH YOUR
SMART-PHONE OR
TABLET



<http://www.wittur.com/special/witturmarine>

Wittur has been supplying components for marine applications for more than 30 years.

Wittur products are installed not only in passengers and cargo ships and off-shore platforms in their explosion-proof execution, but also on some of the most prestigious cruise ships, such as Carnival Freedom, Costa Serena, Emerald Princess, Noordam, Queen Victoria, Quantum of the Seas, where they offer their combined high traffic capability and refined aesthetics. Marine execution doors and operators have been designed and tested to work in extreme environments such as pitch and roll of the ship and to respond to the request for limited maintenance interventions (once per year). All the components for Marine applications are compliant with Marine Equipment Directive (MED) and International Marine Organization (IMO) standards.





MARINE PROJECTS TIMELINE

2000	SILVER SHADOW	2003	QUEEN MARY 2	2008	AZURA
2000	SILVER WHISPER	2002	CAVOUR	2008	NIEUW AMSTERDAM
1999	AMSTERDAM	2005	LIBERTY	2008	FORZA
2001	GOLDEN PRINCESS	2005	BERLIOZ	2008	LE BOREAL
2002	STAR PRINCESS	2006	COSTA CONCORDIA	2008	L'AUSTRAL
2003	CARNIVAL CONQUEST	2005	CROWN PRINCESS	2008	MARINA
2002	CARIBBEAN PRINCESS	2005	CARNIVAL FREEDOM	2008	QUEEN ELIZABETH
2001	PRIDE OF ROTTERDAM	2005	EMERALD PRINCESS	2008	LISCO MAXIMA
2001	PRIDE OF HULL	2006	COSTA SERENA	2008	SUPERFAST II
2001	STENA FOR WARDER	2006	QUEEN VICTORIA	2008	FORZA
2001	CARTOUR	2006	CORAGGIO	2008	ENERGIA
2001	LA SUPERBA	2007	AUDACIA	2009	COSTA FAVOLOSA
2003	CARNIVAL GLORY	2006	CARNIVAL SPLENDOR	2009	COSTA FASCINOSA
2002	ZUIDERDAM	2006	VENTURA	2009	CARNIVAL MAGIC
2003	OOSTERDAM	2006	EURODAM	2009	SOVEREIGN
2004	WESTERDAM	2007	RUBY PRINCESS	2010	SEABOURN QUEST
2005	ARCADIA	2007	COSTA PACIFICA	2010	CARNIVAL BREEZE
2005	NOORDAM	2007	TENACIA	2010	VITRUVIUS EXPLORER
2004	VALOR	2007	COSTA LUMINOSA	2010	COTUNAV FERRIES TANIT
2002	PARTENOPE	2007	SERENA	2011	EUROPA 2
2001	SEVEN SEAS VOYAGER	2008	CARNIVAL DREAM	2012	SUPER COSTA
2003	COSTA FORTUNA	2008	SEABOURN ODYSSEY	2012	QUANTUM OF THE SEAS
2004	COSTA MAGICA	2008	SEABOURN SOJURN		
2002	LA SUPREMA	2008	COSTA DELIZIOSA		



MARINE ELEVATORS ARE AMONG THE MOST INTENSIVELY USED INSTALLATIONS: THEY ARE USED BY PASSENGERS DURING THE DAY AND TO MOVE GOODS AMONG THE DIFFERENT FLOORS DURING NIGHTTIME.

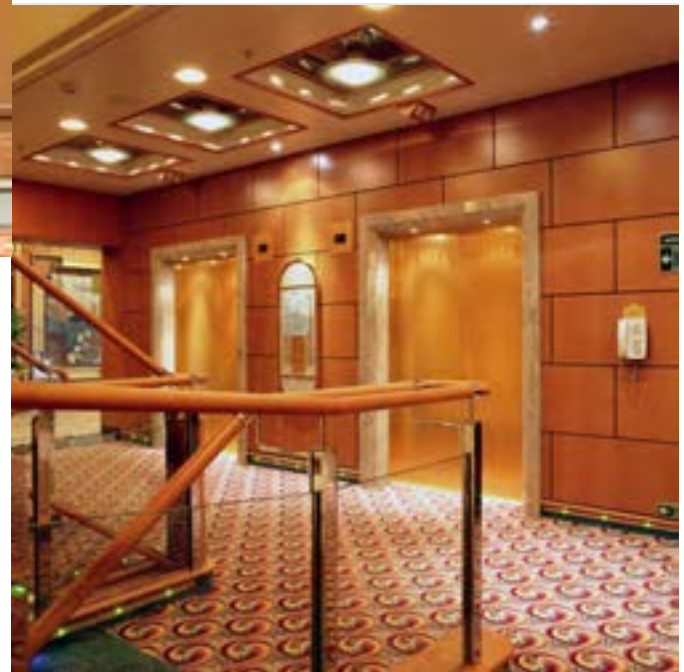


COLOURS, LIGHT AND EASY MOBILITY



ORNAMENTAL ELEVATOR DOOR PANELS ARE SURE TO SET THE MOOD OF PASSENGERS DURING THEIR CRUISE

SPECIAL CLADDINGS WITH
ILLUSTRATIONS AND
PHOTOS



ACCESS ON-LINE
INFORMATION FOR THIS
PROJECT WITH YOUR
SMART-PHONE OR
TABLET



<http://www.wittur.com/special/witturmarine>

Marine elevators combine unique looks and reliable technology. Maintenance intervals are longer as most ships are active for months in a row. Therefore, they need to deliver their performance over extended periods of time. Combining technology, components certified according to marine standards and flexible decorations is the key for a successful marine project.





Making the elevators part of the interior design is crucial for marine applications, as each ship features a unique mood



TOWER 42 LONDON UNITED KINGDOM

ACCESS ON-LINE
INFORMATION FOR THIS
PROJECT WITH YOUR
SMART-PHONE OR
TABLET



<http://www.wittur.com/special/tower42>



Tower 42 is currently the second tallest in the City of London, and was the tallest in the UK between 1980-1990 standing at 183 Metres. The tower, designed by Richard Seifert and engineered by Pell Frischmann, was built by John Mowlem & Co between 1971 and 1980, first occupied in 1980, and formally opened on June 11th, 1981 by HM Queen Elizabeth II. The Tower has recently undergone a complete refurbishment of its twenty 18-person high speed passenger lifts, which include the UK's first double deck lifts that provide an express service between the ground/mezzanine level and the sky lobbies at levels 23 and 24.





Wittur has supplied here bespoke lift door solutions from its Selcom Pegasus range as well as safety components and WSG-19 and WSG29 gearless electric machines.





Just stand and wait next to the elevators: you will soon notice how city towers are dependent from them.

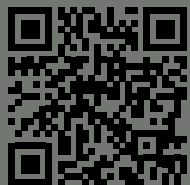


GEARLESS DRIVES
POWER TODAY'S HIGH
SPEED ELEVATOR
SYSTEMS. FREQUENTLY,
ENERGY REGENERATION
DEVICES ARE INSTALLED
TO RECOVER ENERGY
PRODUCED DURING
LIFT DECELERATION
AND REUSE IT. THIS
HELPS REDUCING THE
TOTAL ENERGY DEMAND
OF A BUILDING QUITE
CONSIDERABLY.



AIRPORT TERMINAL 2&3 DUBAI

ACCESS ON-LINE
INFORMATION FOR THIS
PROJECT WITH YOUR SMART-
PHONE OR TABLET



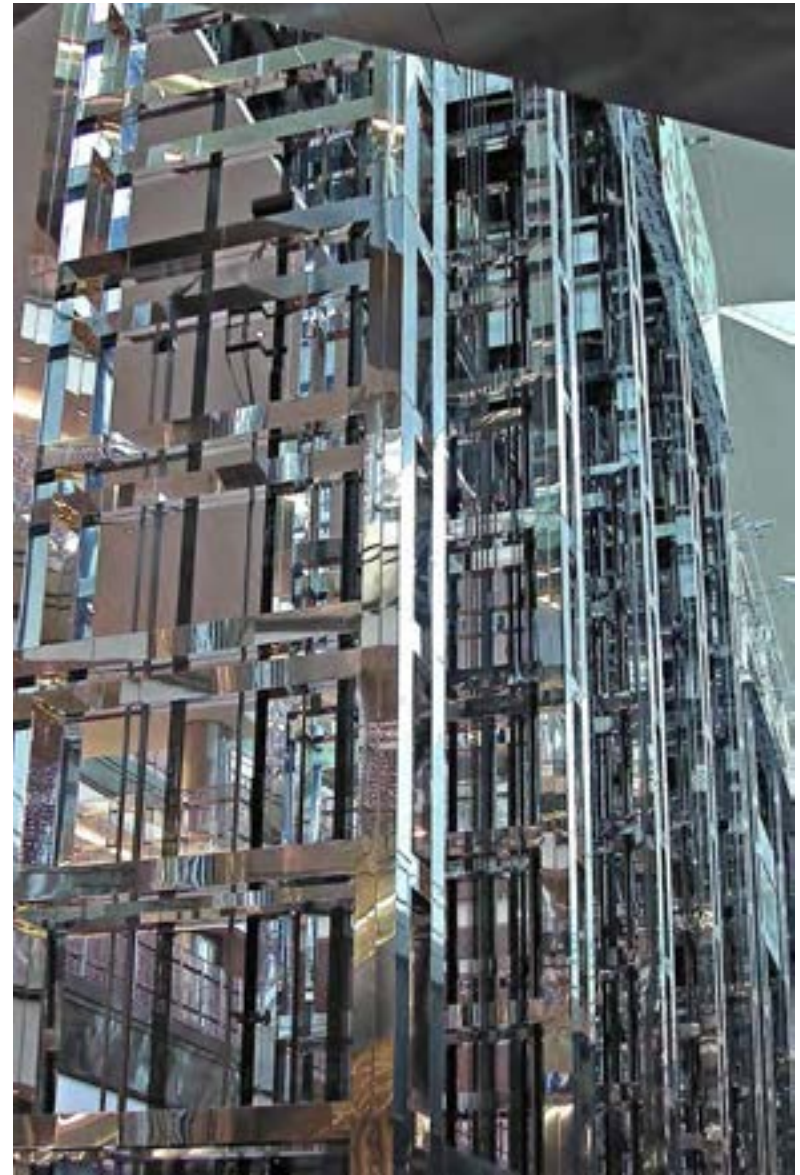
<http://www.wittur.com/special/dubaiairport>



Dubai International Airport is a major airline hub in the Middle East, and is the main airport of Dubai. The airport consists of three terminals and has a total capacity of 80 million passengers annually. Terminal

1 opened in 1960. Terminal 2 opened in 1998. Construction of Terminal 3 began in 2004 and became operational on October 14th, 2008. When completed and opened on 14 October 2008, it was the largest building in the world Terminal 3 by floor space and it is currently the largest airport terminal in the world. Wittur supplied components for Concourse 2 and Concourse 3, both connected to Terminal 3.





THE IMPRESSIVE
ELEVATOR STRUCTURES
AT CONCOURSE 2

**The large-scale supply by Wittur at
Concourse 2 includes:**

- 100 panoramic passenger elevators
- 61 stainless steel service elevators
- 8 trolley-lifts
- 94 fire-rated glass landing doors
- 163 standard glass fire-rated landing doors
- 169 stainless steel landing doors
- 172 glass framed car doors
- 87 stainless steel car doors

**As regards Concourse 3, the supply
includes:**

- 142 panoramic elevators
- 49 service elevators
- 88 fire-rated glass framed landing doors
- 412 standard glass framed landing doors
- 160 stainless steel landing doors
- 240 glass framed car doors
- 88 stainless steel car doors



METRO LINE 4 BUDAPEST HUNGARY

ACCESS ON-LINE
INFORMATION FOR THIS
PROJECT WITH YOUR SMART-
PHONE OR TABLET



<http://www.wittur.com/special/metro4budapest>



The Budapest Metro is the oldest electrified underground railway system on the European continent, and the second-oldest in the world, predated only by the 1890 London Underground. In fact, the Budapest Metro Line 1 was completed in 1896 and was declared a World Heritage Site in 2002. Budapest Metro currently features 4 lines: Line 4 runs southwest to northeast from the transit hub of Budapest Kelenföld railway station in the city's most populous district of Újbuda across the inner city district of Józsefváros

to Keleti railway terminal. Construction works for this section of line 4, with a length of 7.4 kilometres (4.6 mi), started in March 2007 and were completed in March 2014. This is one of the biggest construction projects of the country in recent decades. The project was realized through joint government and municipal financing and EU cofinancing. The total cost of the investment is 452.5 billion forints, of which 180 billion forints are from EU funds.





PROJECT TIMELINE

AROUND 1970	FIRST PLANS FOR THE CONSTRUCTION OF METRO LINE 4
27 MARCH 2006	THE FOUNDATION STONE FOR THIS METRO LINE WAS LAID
15 MAY 2006	THE BUILDING OF SZENT GELLÉRT TÉR STATION BEGAN
17 JULY 2006	THE BUILDING OF BOCSKAI ÚT STATION BEGAN
21 MARCH 2007	THE BUILDING OF NÉPSZÍNHÁZ UTCA STATION BEGAN
3 APRIL 2007	THE BUILDING OF THE TUNNELS BEGAN
5 APRIL 2007	THE BUILDING OF KÁLVIN TÉR STATION BEGAN
28 MARCH 2014	OFFICIAL OPENING CEREMONY: PRIME MINISTER VIKTOR ORBÁN AND BUDAPEST MAYOR ISTVÁN TARLÓS HAND OVER THE METRO LINE 4



Improvements and better experience for passengers

Metro Line M4 has introduced many technical innovations compared to the other Metro Budapest lines, including the internal design of spaces, improved ventilation systems, state-of-the-art passenger information displays, full accessibility on the entire line and the automatic train control and monitoring. The train control, power supply and communications systems of the new line enable the M4 trains to run in fully automatic, driverless mode.



Improved safety

The track areas by the platforms are continually scanned by a radar protection system with 30-cm sensing sections. The passenger protection radar system clearly increases safety by minimizing intervention time. In order to be prepared for fires, modern-day fire-extinguishing and evacuation equipment was installed; air pollution at the stations is monitored by special equipment, which automatically turns on the main ventilation systems.



Design highlights

The architectural design of Metro Line M4 had the target to use sunlight for the illumination of the platform areas wherever it was technically possible. For Example, at Rákóczi tér, natural light reaches to the landing of the escalators at platform level through a special light conveying equipment, which is programmed to follow the movement of the Sun and reflect light with movable mirrors. For the artificial lighting of the stations, modern-day LED-based lamp fixtures are used. The Szent Gellért tér and F vám tér stations of Budapest's new metro line won the main prize of the architectural website Architizer.com in the Bus & Train Stations category.



A PROJECT TO ACHIEVE FULL ACCESSIBILITY

METRO LINE 4

BUDAPEST
HUNGARY

GLASS FRAMED E130
DOORS ARE INSTALLED
IN MOST ELEVATORS OF
METRO BUDAPEST LINE 4



INTERNAL VIEW OF
ONE OF THE VANDAL
RESISTANT CAT 2 EN81-
71 CARS DEVELOPED BY
WITTUR FOR THIS PROJECT

ACCESS ON-LINE
INFORMATION FOR THIS
PROJECT WITH YOUR
SMART-PHONE OR
TABLET



<http://www.wittur.com/special/metro4budapest>

PANORAMIC CARS LET THE
DAYLIGHT IN AT ÚJBUDA-
KÖZPONT



For blind and sight-impaired passengers, so-called ATS equipment was installed into the sides of the escalators, which lets them know whether the escalator is moving up or down. Stations with one exit have four flights of escalators, while those with two exits have three flights each. All stations of Metro Line M4 are accessible due to the lifts installed in each station. A total of 32 complete elevators were installed in the ten stations, either machine roomless or with machine room at the bottom. The Wittur project team designed all of them with 3D CAD systems to solve all issues related to the position of each system component very early in the process. All lift cars and all door claddings are Cat. (or Category) 2 vandal-resistant according to EN81-71. Panoramic executions were extensively used for greater passenger comfort and security, while special care was taken to obtain energy efficient systems using Wittur gearless drives, door drives and energy efficient components. The Szent Gellért tér and F vám tér stations of Budapest's new metro line won the main prize of the architectural website Architizer.com in the Bus & Train Stations category.

ELEVATORS
INSTALLED AT
BIKÁS PARK
STATION



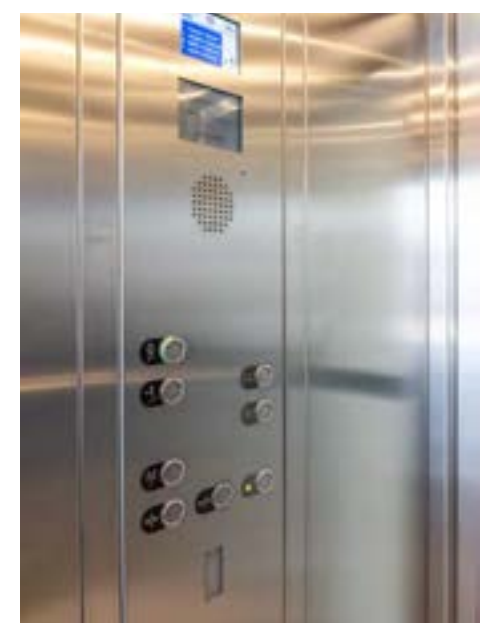




STREET LEVEL ELEVATOR
ENTRANCE AT KÁLVIN TÉR
STATION

VANDAL RESISTANT
LANDING OPERATING
PANEL

VANDAL RESISTANT CAR
OPERATING PANEL



CUATRO TORRES BUSINESS AREA MADRID, SPAIN

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PROJECT WITH YOUR SMART-
PHONE OR TABLET



<http://www.wittur.com/special/cuatrotorres>



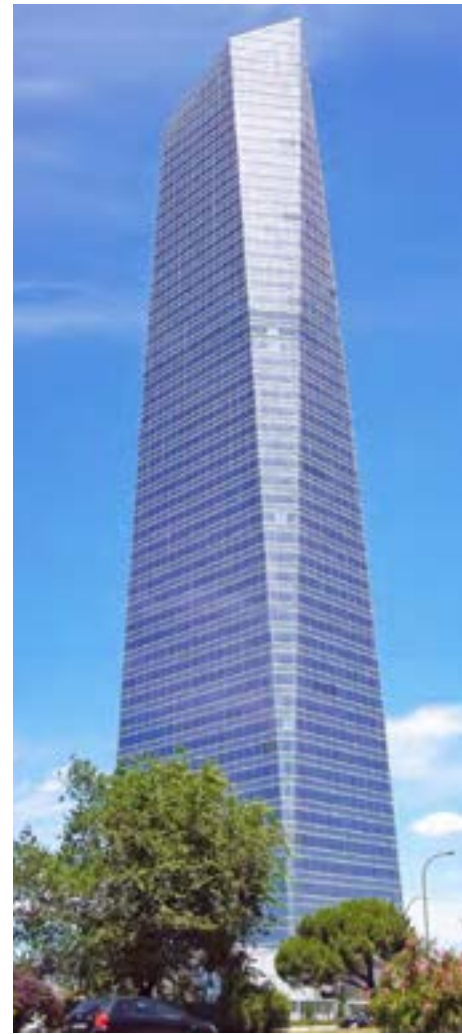
Four Towers Business Area

NÓS SOMOS O SEU
FORNECEDOR E A SUA
SOLUÇÃO GLOBAL NO
MUNDO DO ELEVADOR

NÓS SOMOS O SEU
FORNECEDOR E A SUA
SOLUÇÃO GLOBAL NO
MUNDO DO ELEVADOR

The "Four Towers Business Area" is a business district located in the Paseo de la Castellana in Madrid, on the former "Ciudad Deportiva" of Real Madrid. The area contains the tallest skyscrapers in Madrid and Spain (Torre Espacio, Torre de Cristal, Torre PwC and Torre Bankia). The construction of the buildings finished in 2008.





Torre Espacio

Designed by Henry N. Cobb and built by Obrascón Huarte Lain, the 57-storey Torre Espacio (Spanish for Space Tower) is 224.5 metres tall. In November 2006, its height surpassed that of the Gran Hotel Bali, thus making it the tallest building in Spain, although it retained that title only for a short time. The structure was topped out on March 19, 2007. Wittur has supplied Hydra doors in Fire rated EN81-58 execution, as well as Pegasus heavy duty doors.

Torre Bankia

Designed by Lord Foster, and built by a joint venture of Dragados and Fomento de Construcciones y Contratas, the 45-storey Torre Bankia (Spanish for Bankia Tower), with a height of 250 m, is the tallest of the four buildings in the complex, 89 cm higher than Torre de Cristal. Wittur has supplied high performance Pegasus doors with a total height of 2800 mm in glass framed fire rated execution for its 5.0 and 7.0 m/s lift systems.

Torre de Cristal

Designed by Cesar Pelli and built by Dragados, Torre de Cristal (Spanish for Crystal Tower), with a height of 249.5 meters, ranks as the second tallest building in the country after Torre Caja Madrid. In April 2007, its structure surpassed the height of Torre Espacio, for a while becoming the tallest building and structure in Spain. Wittur has supplied cars and Hdyra doors for its lift systems.

Torre PwC

Designed by Carlos Rubio Carvajal and Enrique Álvarez-Sala Walter and built by Sacyr Sau, the 52-storey skyscraper, formerly known as Torre Sacyr Vallehermoso, is 236 meters tall. Wittur has supplied Luna round glass doors for its round panoramic lifts.

INCHEON AIRPORT SEOUL SOUTH KOREA

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INFORMATION FOR THIS
PROJECT WITH YOUR SMART-
PHONE OR TABLET



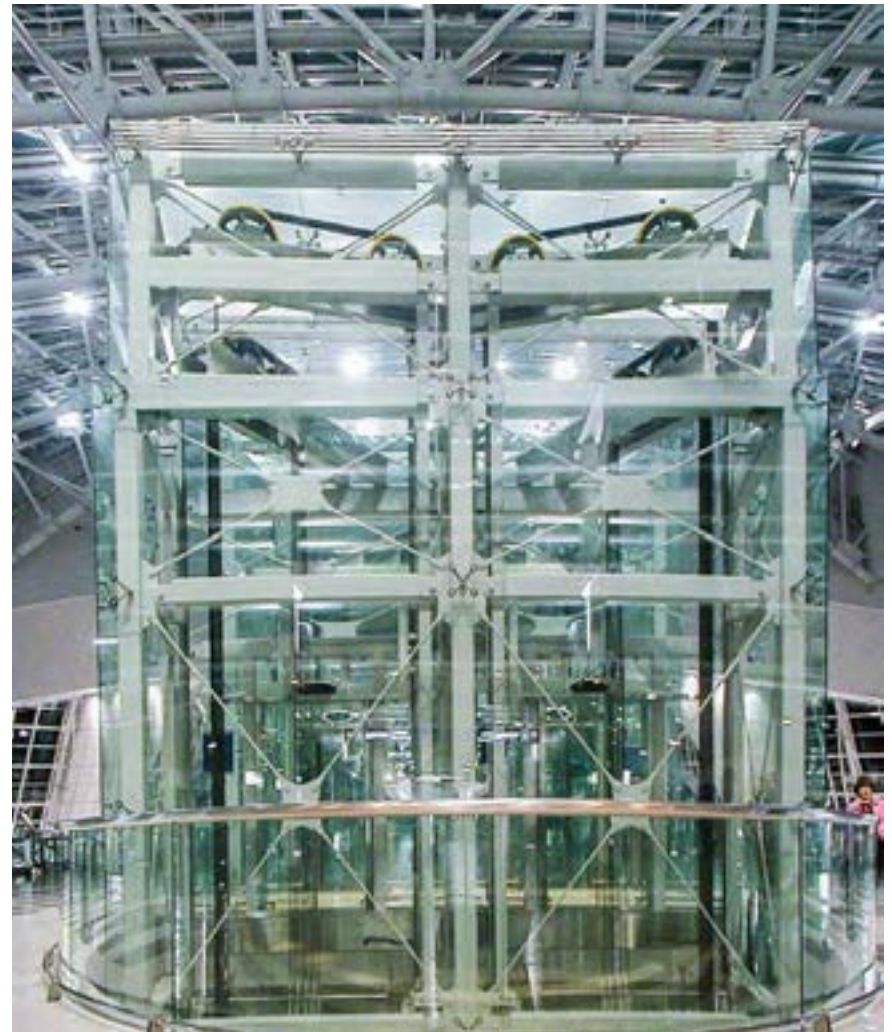
<http://www.wittur.com/special/incheonairport>



Incheon International Airport is the largest airport in South Korea, the primary airport serving the Seoul Capital Area, and one of the largest and busiest airports in the world. The airport was officially opened in March 2001, and for nine years in a row since 2005 it was rated the best airport worldwide by Airports Council

International, also thanks to its elevators operation ratio, hitting 99.97%. Wittur has supplied Nettuno underdriven doors for this airport. Due to their fresh design and the absence of visible mechanical components, these doors are an ideal solution to develop lift solution based on a linear, fresh design.





Since its opening in 2001, Incheon International Airport has made outstanding development in all sectors, recognized as the airport offering best quality service and its international passenger and cargo numbers exceeding expectation at all times.



AIRPORT TERMINAL 3

BEIJING
CHINA

At its opening, Terminal 3 was the largest man-made structure in the world in terms of covered area

ACCESS ON-LINE
INFORMATION FOR THIS
PROJECT WITH YOUR SMART-
PHONE OR TABLET



<http://www.wittur.com/special/beijingairport>



Beijing Capital International Airport is the main international airport serving Beijing. It is located 32 km (20 mi) northeast of Beijing's city center. Beijing Capital has rapidly ascended in rankings of the world's busiest airports in the past decade; as of March 1 2014 it was the busiest airport in the world in 2014. To accommodate the growing traffic volume, Beijing Capital added the enormous Terminal 3 in 2008 in time for the Olympic Games, the

second largest airport terminal in the world after Dubai International Airport's Terminal 3, and the sixth largest building in the world by area. Beijing Capital International Airport covers 1,480 hectares (3,700 acres) of land.

Wittur doors and safety gears are used/installed extensively in the lift systems at this airport.

BEIJING CAPITAL HAS RAPIDLY
ASCENDED IN RANKINGS OF THE
WORLD'S BUSIEST AIRPORTS IN
THE PAST DECADE



PROJECT TIMELINE

1958	BEIJING AIRPORT OFFICIAL OPENING WITH TWO RUNWAYS
1980	NEW LARGER BUILDING, CALLED TERMINAL 1 OPENED WITH DOCKS FOR 10 TO 12 AIRCRAFT.
1999	NEW TERMINAL 2 OPENED
2007	THIRD RUNWAY OPENED
2008	OPENING OF TERMINAL 3; AT ITS OPENING, IT WAS THE LARGEST MAN-MADE STRUCTURE IN THE WORLD IN TERMS OF COVERED AREA

TERMINAL 3 HAS 243 ELEVATORS, ESCALATORS OR MOVING WALKWAYS.



MASS TRANSIT RAILWAY

HONG KONG

CHINA



ACCESS ON-LINE
INFORMATION FOR THIS
PROJECT WITH YOUR SMART-
PHONE OR TABLET



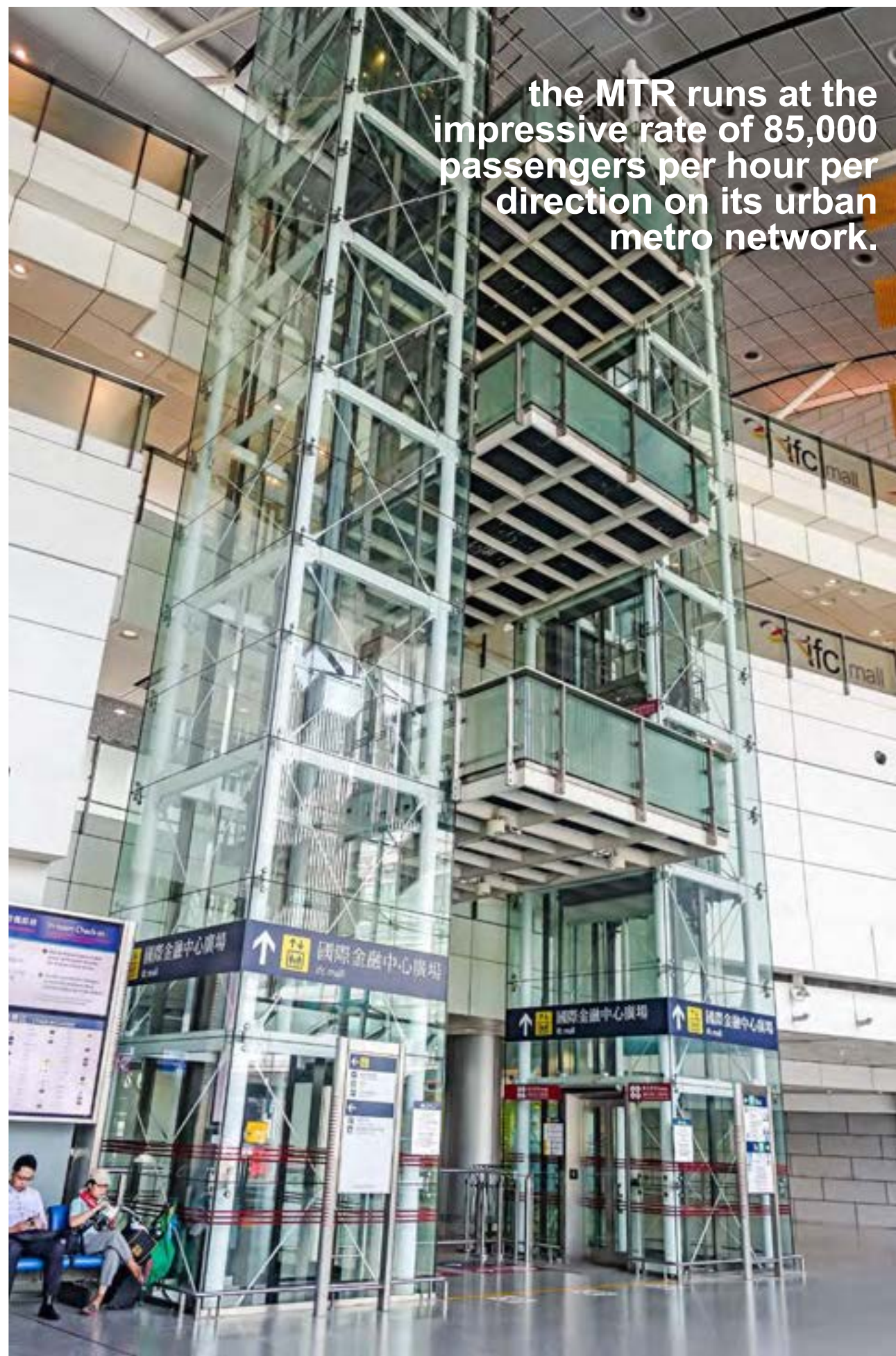
<http://www.wittur.com/special/hongkongrailway>



The Mass Transit Railway (MTR) is the rapid transit railway system in Hong Kong. Opened in 1979, the system now includes 218.2 km (135.6 mi) of rail with 152 stations, including 84 railway stations and 68 light rail stops. The MTR system is a common mode of public transport in Hong Kong, with over five million trips made in an average weekday. It consistently achieves a 99.9% on-time rate on its train journeys. The MTR has undergone many extensions since its opening, and Wittur has supplied glass framed doors for many lift systems in a number of stations..



WITH THE HIGH LEVEL OF DAILY PASSENGER TRAFFIC, FACILITIES OF THE MTR STATIONS ARE BUILT WITH DURABILITY AND ACCESSIBILITY IN MIND



the MTR runs at the impressive rate of 85,000 passengers per hour per direction on its urban metro network.

CONCERT HALL ASTANA KAZAKHSTAN

ACCESS ON-LINE
INFORMATION FOR THIS
PROJECT WITH YOUR SMART-
PHONE OR TABLET



<http://www.wittur.com/special/astanaconcerthall>



When in mid 1990's the capital city of Kazakhstan was moved from Almaty in the South to Astana, in the center of the country, the new capital city became in a short time the economic, political and cultural centre of the nation. New pieces of architecture designed by famous architects have radically changed the city landscape; one of the new landmarks of Astana is a 3500 seats concert hall, designed by Nicoletti Associati from Italy. Its structure with slanted side walls makes it look like a sailing vessel or a rose. Wittur has supplied a total of 34 complete lift packages for this prestigious concert hall.



A DISTINCTIVE SAILING VESSEL OR ROSE SHAPE IS GIVEN TO THE BUILDING BY THE SLANTED SIDE WALLS.



The internal piazza-foyer, with a total area of 2970 square meters, hosts three round panoramic lifts with hydraulic drives, with a rated speed of 0.63 m/s and a rated load of 630 kg. They are equipped with Osaka round panoramic cars and Luna Plus round glass doors. Moreover, 31 complete Machine roomless lift packages Wittur MRL W line with rated loads from 400 up to 1,600 kg have been supplied by Wittur to complete the logistic facilities of the building and give access to shops, balconies, restaurants, exhibition halls and two cinemas besides the concert hall. All the supplied lift packages run at a rated speed of 1,0 m/s with travels ranging from 10 to 21 metres. They feature either Wittur S1 or Wittur S2 permanent magnet energy-efficient gearless drives.



HALL OF JUSTICE TOWERS

NAPLES

ITALY



ACCESS ON-LINE
INFORMATION FOR THIS
PROJECT WITH YOUR SMART-
PHONE OR TABLET



<http://www.wittur.com/special/naples>

The Centro Direzionale is a service center mainly devoted to business in Naples, Italy.

The idea of building a Service center in Naples dates back to 1964. The current project was designed in 1982 by Japanese architect Kenzo Tange and most of the construction was completed by 1995. The Centro Direzionale is more than one square kilometer wide and is situated in the Poggioreale section of the city, near the central train station. The layout includes 18 blocks of buildings, with high-rises up to 100 meters. There are office buildings as well as residential flats. The Center is meant to accommodate most, if not all, of the administrative offices of the city of Naples, such as the new Hall of Justice, designed by Michele Capobianco, Corrado Beguinot, Massimo Pica Ciamarra, Antonio Capobianco and Daniele Zagaria.





Wittur supplied an additional 13 people / 1200 kg lift that runs on a panoramic shaft for a total travel of 72 meters.

The design of the Hall of Justice is based on three connected towers (called A, B and C). Tower A, the highest one, is 110 meters tall and features 29 floors. It was completed in 1991. Wittur supplied a complete exterior lift with a panoramic shaft. The total travel is 72 meters and the lift can carry 13 people or 1200 kg. The lift is powered by a Wittur WSG 19.2 gearless drive.

THE TOTAL TRAVEL IS 72 METERS AND THE ELEVATOR CAN CARRY 13 PEOPLE OR 1200 KG.



HIGHLIGHT TOWERS MUNICH GERMANY

MURPHY/JAHN OF CHICAGO
COMPLETED 2004

An iconic, architectural
milestone of Munich's
cityscape



Highlight Towers is a twin tower office skyscraper complex completed in 2004 in Munich, Germany. The towers are joined by two bridges made of glass and steel. They were designed by architects Murphy/Jahn of Chicago. Tower I is 126 m high with 33 floors, and Tower II is 113 m high with 28 floors, which make them among the highest buildings in the city. The panoramic elevators of the two towers are installed on the internal side of each tower and are enclosed in a glass structure in groups of four and three and not in individual shafts. They are illuminated at night with a complete LED contour light system to emphasize their movement, a sort of circulatory system for the two towers. Wittur supplied special glass framed landing and car doors with full stainless steel operators and mechanism for 10 panoramic lift systems to serve the two towers. The mechanism support plate has been eliminated and a stainless steel bar has been used instead to integrate the elevator door structure with the overall structure of the buildings.



THE TOWER'S PANORAMIC
ELEVATORS OFFER A
SPECTACULAR VIEW OF
ALLIANZ ARENA AND OF
THE NORTHERN SIDE OF
MUNICH



THE ELEVATOR DOORS MECHANISMS
WITHOUT SUPPORT PLATE WERE
SPECIFICALLY DESIGNED TO FIT INTO THE
TOWERS' ARCHITECTURAL DESIGN



ACCESS ON-LINE
INFORMATION FOR THIS
PROJECT WITH YOUR
SMART-PHONE OR
TABLET



<http://www.wittur.com/special/highlighttowers>

FACTS AND FIGURES

126 / 113 m height, 32 / 27 floors and gallery, office and retail space

INNSIDE Premium Hotel, 5 / 7 floors,
160 studios and suites, conference
rooms, restaurant, spa area

HighLight Forum

5 floors, office and business center

Rentable area

approx. 82,590 sqm

Underground parking spaces:

approx. 750, access via Walter-Gropius-Straße

Initiated, operated and administered by the KanAm Group, which is based in Munich, Frankfurt am Main and Atlanta



The LED contour lighting along the corners of both towers light up the Towers' quiet presence far into the night.



MILTON GATE LONDON UNITED KINGDOM

SIR DENYS LOUIS LASDUN

COMPLETED IN 1991

REFURBISHED IN 2007 BY SQUIRE & PARTNERS

Each lift door mechanism uses the same basic construction material as the building itself

ACCESS ON-LINE
INFORMATION FOR THIS
PROJECT WITH YOUR
SMART-PHONE OR
TABLET



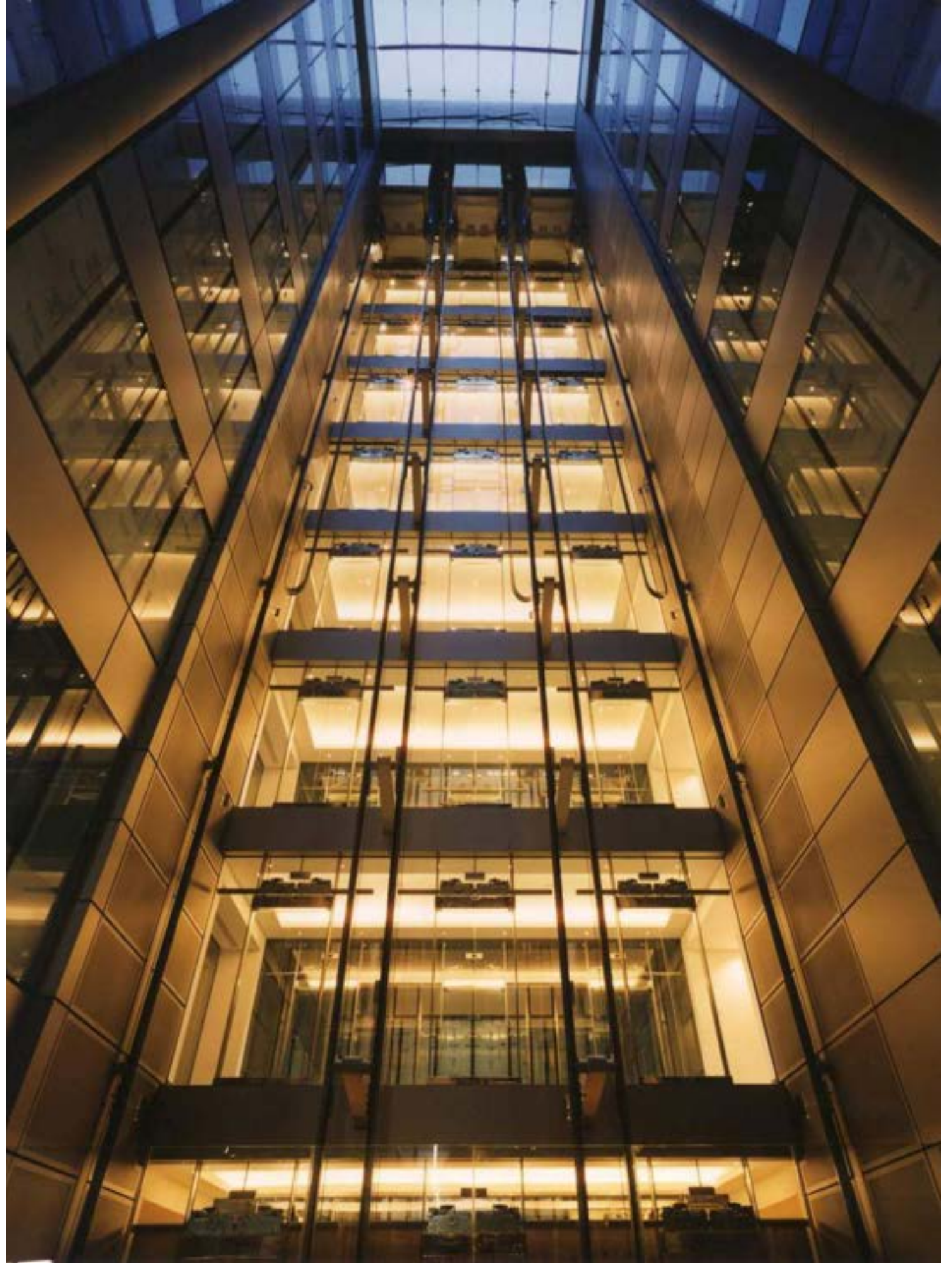
<http://www.wittur.com/special/herontower>

The last work produced by the firm Lasdun, Softley and Partners in London is an office block called Milton Gate at 60, Chiswell Street. The exterior is totally encased in planar glass and features corner towers; the use of green-tinted glazing represented a departure from Sir Denys Lasdun's familiar bare concrete style. The notable feature of its lift systems is the structure of the support plate. Due to the transparent structure of the lift shaft, the architect was looking for a solution avoiding big black support plates in full view for each lift system. Wittur suitably designed a bespoke support plate based on a stainless steel tube, so that each lift door uses the same basic construction material as the building itself. The "de-structured" door mechanisms are in plain view and are perfectly integrated in the general structure of the building.





VIEW OF THE
ELEVATOR SYSTEMS
WITH DE-STRUCTURED
DOOR MECHANISMS IN
PLAIN VIEW.



TORRE DE AGBAR BARCELONA SPAIN

JEAN NOUVEL IN ASSOCIATION WITH B720 FERMIN

VAZQUEZ ARQUITECTOS

COMPLETED 2005

Wittur has supplied 54 fire-rated glass framed Pegasus landing doors, 195 fire-rated stainless steel Pegasus landing doors, 2 glass framed Pegasus car doors and 6 stainless steel Pegasus car doors.


ACCESS ON-LINE
INFORMATION FOR THIS
PROJECT WITH YOUR
SMART-PHONE OR
TABLET



<http://www.wittur.com/special/torredeagbar>

The Torre Agbar is a 38-story skyscraper which marks the gateway to the new technological district of Barcelona, Catalonia, Spain. It was designed by French architect Jean Nouvel in association with the Spanish firm b720 Fermin Vazquez Arquitectos and built by Dragados. The tower was officially opened by King Juan Carlos I on 16 September 2005. According to Jean Nouvel, Torre Agbar is meant to recall the shape of a geyser rising into the air. Additionally, Nouvel was inspired by the distinctive pinnacles of the Montserrat mountain range near Barcelona. The Agbar Tower measures 144.4 m in height. One of the most distinguishing elements of the building is its nocturnal illumination. The tower has more than 4,500 luminous devices that can operate independently using LED technology and enables the generation of images on the outside of the tower.





The tower is made up of two concentric concrete oval cylinders which do not come in contact with each other. The outer cylinder, which completely encases the inner cylinder is covered by a dome of glass and steel which gives the tower its characteristic shape of a bullet. The lifts, stairs and facilities are located inside the inner cylinder. For the tower's 6 panoramic passenger lifts installed near the outer wall and the two passenger lifts installed in the internal part of the tower, Wittur has supplied 54 fire-rated glass framed Pegasus landing doors, 195 fire-rated stainless steel Pegasus landing doors, 2 glass framed Pegasus car doors and 6 stainless steel Pegasus car doors. The lift systems reach a speed of 4 m/s.

MANCHESTER ONE MANCHESTER UNITED KINGDOM

NÓS SOMOS O SEU FORNECEDOR E A SUA SOLUÇÃO
GLOBAL NO MUNDO DO ELEVADOR. A NOSSA
EXPERIÊNCIA REMONTA Á MAIS DE 45 ANOS EM QUE NOS
TORNAMOS NO FORNECEDOR VALORIZADO POR MAIS DE 500

One of the first of the
high-rise buildings
built in the 1960's
and 1970s across the
United Kingdom in the
brutalist style.

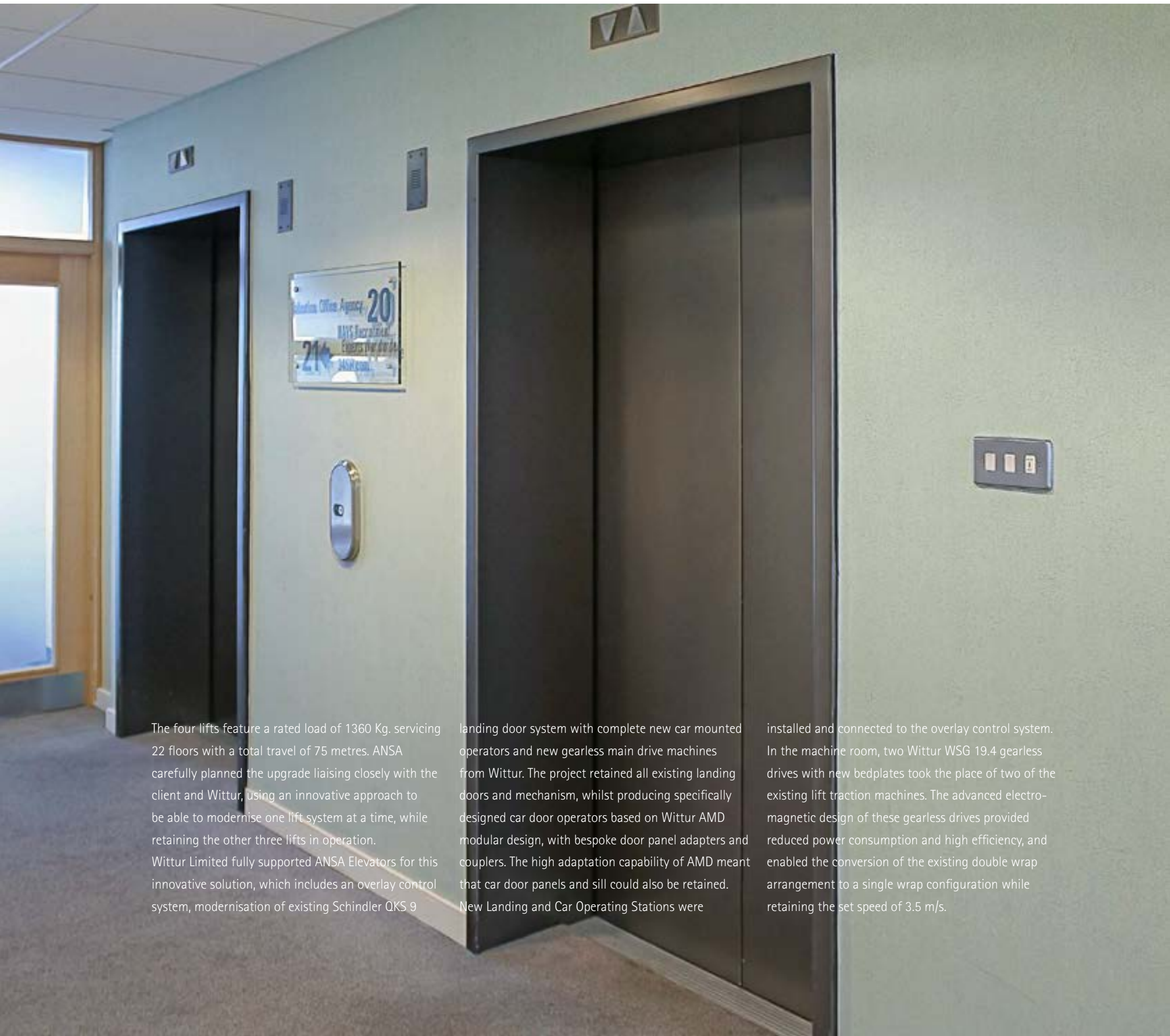
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INFORMATION FOR THIS
PROJECT WITH YOUR
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<http://www.wittur.com/special/manchesterone>

Manchester One, formerly known as Portland Tower and previously St. Andrew's House, is a high-rise building in Manchester, England and is one of the most prominent high rise commercial buildings in Manchester City centre, providing commercial office space to various institutions. The tower, finished in 1962, was one of the first of the high-rise buildings built in the 1960's and 1970s across the United Kingdom in the brutalist style, which often emphasizes concrete as a structural medium with repetitive angular geometries. Portland Tower has recently undergone a facelift in the context of the currently undergoing major re-generation of Manchester's City Centre. ANSA Elevators Ltd, a leading lift engineering and service company in the North of England, was awarded a contract for the modernisation of Portland tower four lift systems, and selected Wittur to provide most components for this major project.





The four lifts feature a rated load of 1360 Kg. servicing 22 floors with a total travel of 75 metres. ANSA carefully planned the upgrade liaising closely with the client and Wittur, using an innovative approach to be able to modernise one lift system at a time, while retaining the other three lifts in operation. Wittur Limited fully supported ANSA Elevators for this innovative solution, which includes an overlay control system, modernisation of existing Schindler QKS 9

landing door system with complete new car mounted operators and new gearless main drive machines from Wittur. The project retained all existing landing doors and mechanism, whilst producing specifically designed car door operators based on Wittur AMD modular design, with bespoke door panel adapters and couplers. The high adaptation capability of AMD meant that car door panels and sill could also be retained. New Landing and Car Operating Stations were

installed and connected to the overlay control system. In the machine room, two Wittur WSG 19.4 gearless drives with new bedplates took the place of two of the existing lift traction machines. The advanced electromagnetic design of these gearless drives provided reduced power consumption and high efficiency, and enabled the conversion of the existing double wrap arrangement to a single wrap configuration while retaining the set speed of 3.5 m/s.

ELEVATOR

MANCHESTER ONE

MANCHESTER
UNITED KINGDOM

MODERNIZATION FOR ENERGY EFFICIENCY

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<http://www.wittur.com/special/manchesterone>



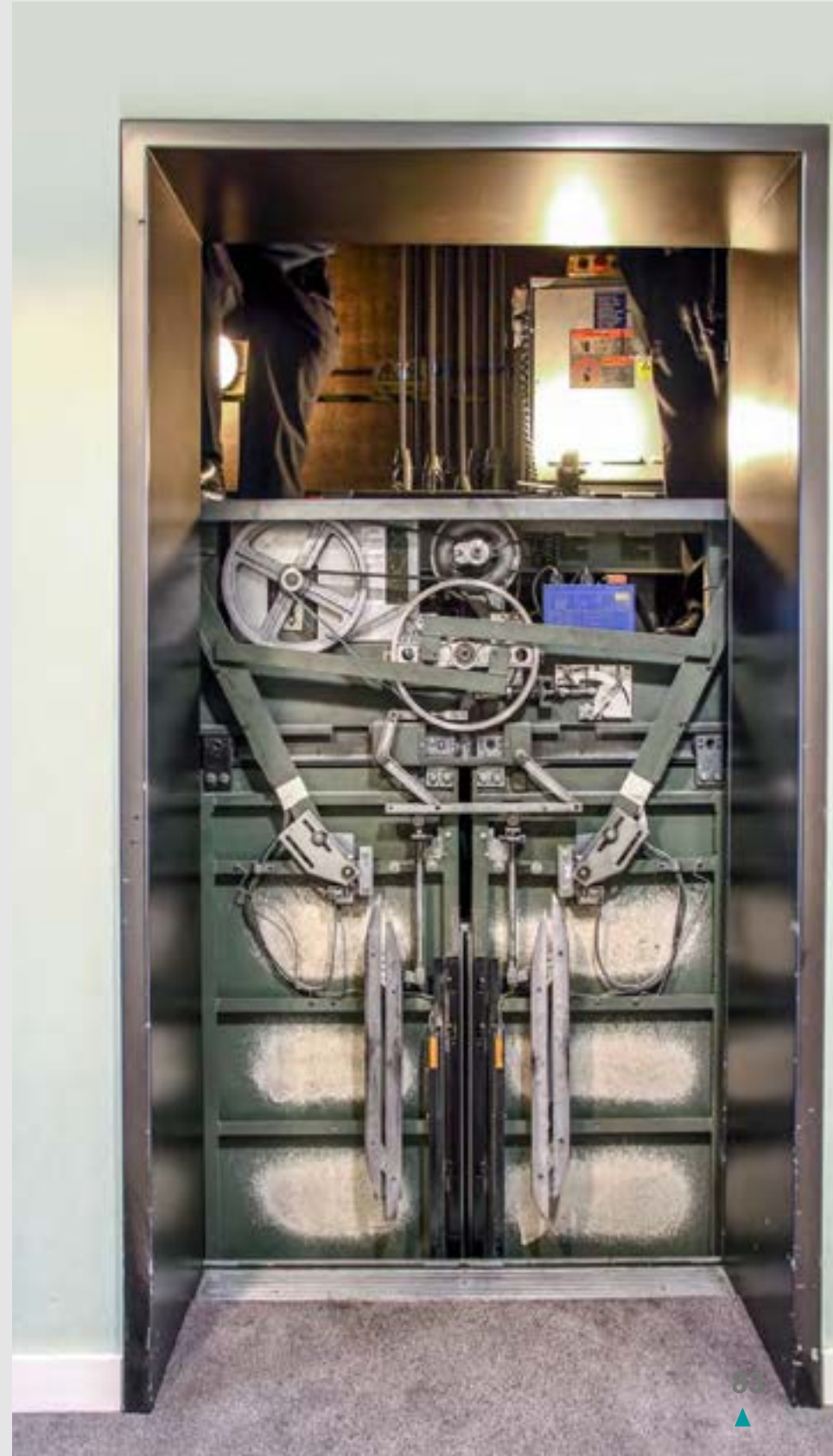
John Bentley, the Managing Director of ANSA Elevators Ltd, is pleased with the results:

"...The capability to provide comprehensive lift modernisation with minimal customer impact has resulted in a massive improvement in traffic movement in a building where lift service is crucial to the client. It is consistent with ANSA's commitment to providing customer-focused sustainable solutions"

"...The completion of Phase II will see a major transformation and will result in a top quality lift service. It is impressive to compare the size and complexity of the old machines with the new drive units and control system and realise that the new units offer a much improved performance and reliability at a fraction of the energy costs"

“The new units offer a much improved performance and reliability at a fraction of the energy costs.”

JOHN BENTLEY, THE
MANAGING DIRECTOR OF
ANSA ELEVATORS LTD



24

TEATRO PETRUZZELLI

BARI ITALY

ANGELO BARI CICCIOMESSERE

COMPLETED 1896

RECONSTRUCTED 2008

During the nights of
26 and 27 October
1991 the theatre was
completely destroyed by
fire.

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<http://www.wittur.com/special/petruzzelli>

The Teatro Petruzzelli is the largest theatre of the city of Bari and the fourth Italian theatre by size. The history of the Teatro Petruzzelli of Bari begins when Onofrio and Antonio Petruzzelli, traders and ship builders of Trieste, presented the designs for the theatre drawn up by their brother-in-law, the engineer Angelo Bari CiccioMessere (then Messeni) to the city of Bari. The proposal for building the Petruzzelli was accepted and, on 29 January 1896, a contract was signed between the family and the city administration. Two years later, in October 1898, work began and it ended in 1903. The theatre was officially opened on Saturday, February 14th, 1903. During the nights of 26 and 27 October 1991 the theatre was completely destroyed by fire.





The Theatre, reconstructed in 2008, officially reopened Sunday 4 October 2009, nearly 18 years after the fire. Its rebirth also involved a complete overhaul of its main lift systems. Wittur provided a special full glass car with underdriven glass doors which offer a striking, but at the same time pleasant contrast with the golden decorations of the foyer.



EMPIRE STATE BUILDING NEW YORK U.S.A.

WILLIAM F. LAMB (SHREVE, LAMB & HARMON)
COMPLETED IN 1931

In 2010, the Empire State Building underwent a global renovation to transform the building into a more energy efficient and eco-friendly structure.

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<http://www.wittur.com/special/empirestatebuilding>

The Empire State Building is a 103-story skyscraper located in Midtown Manhattan, New York City, at the intersection of Fifth Avenue and West 34th Street. It has a roof height of 380 m, and with its antenna spire included, it stands a total of 443 m high. It stood as the world's tallest building for nearly 40 years, from its completion in early 1931 until late 1970. The Empire State Building was the first building to have more than 100 floors. It has 6,500 windows and 73 elevators, and there are 1,860 steps from street level to the 102nd floor.

The Empire State Building is generally thought of as an American cultural icon. It is designed in the distinctive Art Deco style and has been named as one of the Seven Wonders of the Modern World by the American Society of Civil Engineers. The building is owned by the Empire State Realty Trust. Its original 64 elevators are located in a central core; today, the Empire State Building has 73 elevators in all, including service elevators.



Otis carried out the modernization of the Empire State Building elevator systems leading one of the most relevant projects ever realized in this field. Otis chose Wittur to supply 8 counterweight frames in a special design and execution with integrated safety gears WCWSG10 and additional 46 units of WCWSG04 and WCWSG10-Duplex counterweight safety gears.

**Eight new
high-efficiency
WSG-29
gearless drives
dramatically
reduce energy
consumption.**



Empire State Building is a trademarked design and used with permission by ESBC

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LEADENHALL TOWER LONDON UNITED KINGDOM

RICHARD ROGERS
COMPLETED 2014

Wittur has provided bespoke frames for this project, specially designed and brightly coloured in yellow and orange in the same style as the peculiar building structure.

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<http://www.wittur.com/special/leadenhalltower>

Designed by Richard Rogers and developed by British Land and Oxford Properties, the new Leadenhall Building is 225m tall, with 48 floors. With its distinctive wedge-shaped profile it has been nicknamed "the Cheesegrater" and was completed in 2014. The new tower features a tapered glass façade on one side which reveals steel bracings, along with a ladder frame to emphasize the vertical appearance of the building. It also appears to anchor the tower to the ground, giving a sense of strength. Unlike other tall buildings, which typically use a concrete core to provide stability, the steel megaframe, engineered by Arup, provides stability to the entire structure and is the world's tallest of its kind. 26 panoramic passenger lifts are housed in the building's northern core.





LEADENHALL TOWER

LONDON
UNITED KINGDOM

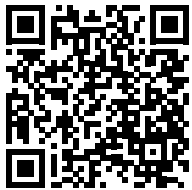
WITH 47 FLOORS TO
ASCEND, THE VIEWS
FROM THE TOP OF
THE LEADENHALL
BUILDING ARE RATHER
SPECTACULAR



THE LEADENHALL
BUILDING HAS BEEN
NICKNAMED THE
'CHEESEGRATER' FOR ITS
DISTINCTIVE SHAPE.

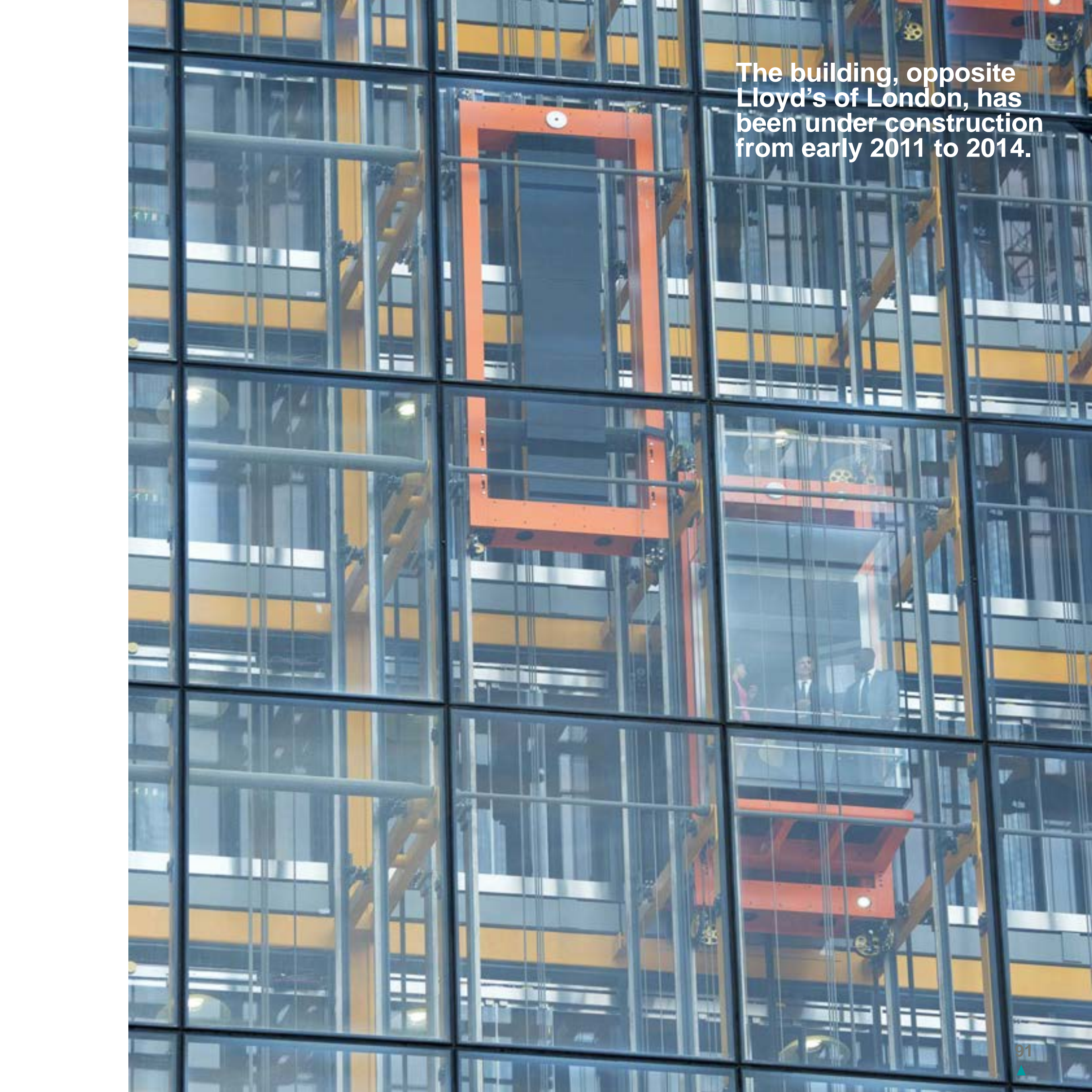


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<http://www.wittur.com/special/leadenhalltower>





The building, opposite Lloyd's of London, has been under construction from early 2011 to 2014.

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BAILONG CHINA

OFFICIAL OPENING IN 2002

18,000 PEOPLE MOVED DAILY

Wittur has supplied for this special project its largest and most powerful WSG29 gearless drives, which ensure a smooth and energy efficient ride.

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<http://www.wittur.com/special/bailong>

The Bailong Elevator, literally Hundred Dragons Elevator, is a glass elevator built onto the side of a huge cliff in the Wulingyuan area of Zhangjiajie, China that is 330m high.

It is claimed to be the highest and heaviest outdoor elevator in the world. Construction of the elevator began in October 1999, and it was opened to the public by 2002. The glass elevators run along a cliff face in the north of Zhangjiajie National Forest Park, which is best known for its unique geological formations. Designed and operated by Bailong Elevator Company, the structure consists of a 154-meter deep underground shaft and a 172-meter structure above the ground. Three double-story glass elevators run abreast up the side of the cliff to a plateau near Shuiraosimen, one of the key scenic spots in the park. It takes about two minutes to complete the journey from the base of the cliff to the top. Each elevator can carry 50 people per trip, with a total daily capacity of about 18,000 people.



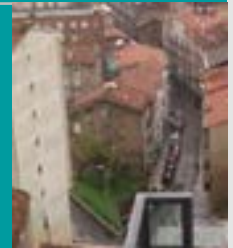


RIO DE LA PILA INCLINED LIFT SANTANDER SPAIN

OFFICIAL OPENING IN 2008

A TOTAL TRAVEL OF 72 METRES ON A STEEP SLOPE

Wittur provided Nettuno underdriven panoramic doors for this project, in a special execution with extra safety measures to prevent opening of the car door while travelling.



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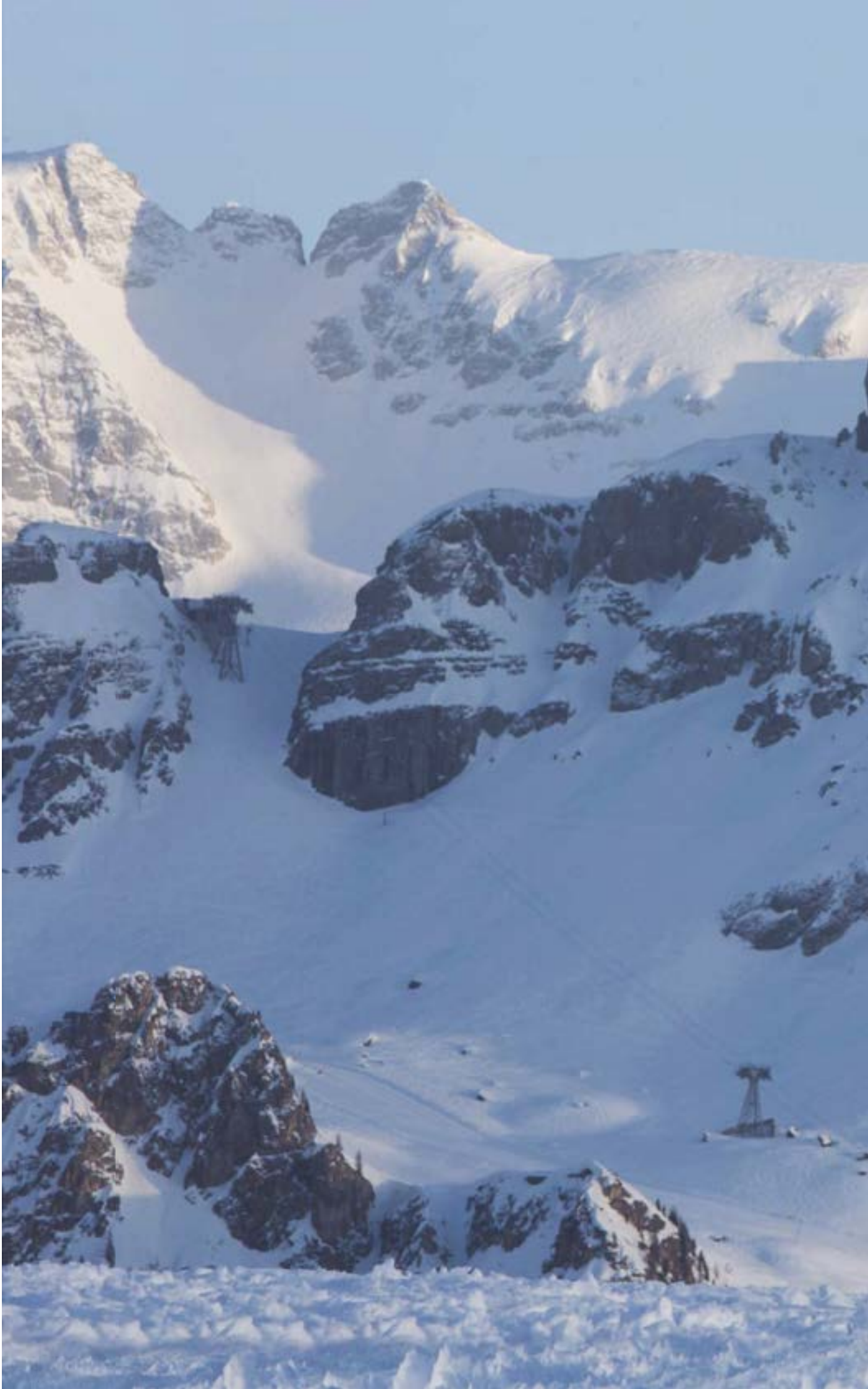


<http://www.wittur.com/special/riodelapila>

The "Funicular del Río de la Pila", located in Santander (Cantabria, Spain) links the Río de la Pila Street to Meadow Street San Roque, with a total travel of 72 metres on a steep slope. To accommodate the 38 meters distance between the starting station and the finish station the lift has an inclination of 32 degrees. The Funicular was officially opened to the public on July 11th, 2008 and its stainless steel panoramic car has a capacity to accommodate 20 people or 1500 kg. In 2009 this project was awarded a prize by the publication 'Elevator World' in the category for inclined elevators.









WITTUR OSAKA PANORAMIC
ROUND CAR AT PASSO
CAMPOLONGO, ITALY

ADVERTISING PHOTOGRAPH,
WINNER OF "ELEVATOR WORLD
PHOTO OF THE YEAR 2014"

FOR ADDITIONAL
CONTENTS AND
UPDATES

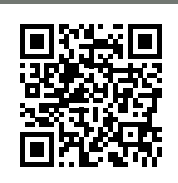


safety **in** *motion*™

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