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SPECIAL LIFTS



The challenge: to design lifts which take your breath away

Renzo Piano's architecture studio, the property owner and the construction company have made clear from the outset their desire to provide the building with:

- Strikingly original made-to-measure lifts with a very high load capacity and uniquely dimensioned so as to dazzle visitors to the centre and handle the transportation of works of art, large and small.
- Exceptional and exclusive finishes for the lift cars, hand-picked by the architect's studio and approved by the project commissioner.
- All the lift components designed and made to measure.
- Specific safety measures to guarantee the well-being of passengers and works of art travelling within each and every lift car.
- Special temperature-control and air-conditioning specifications to optimise equipment performance and other job-specific operations.

Our engineers have dedicated many hundreds of hours' work to the achievement of the highly detailed and particular specifications required to match the necessarily high standards of this emblematic project.

The main lift system

The main lift, whose fundamental task will be to transport passengers and artworks, will be installed in the central vertical axis of the new building.

- It will be a machine-roomless lift with a 6500Kg/86-passenger load capacity, which will serve four floors with a travel distance of 20.3 metres at a speed of 1 metre/second.
- The glass lift car will have a height of 5 metres and the car and landing doors will be of stainless steel and centre-opening with four panels of 3600x4000mm (width x height). Given their unusual size, both the car and the car doors must be made to measure. Other component parts of the doors and door entrances, such as the stainless steel door sills, will also have to be specially manufactured for the project.
- The lift car roof will be built to reflect the design of the roof of the arts centre, incorporating a fabric specifically created for the job. The car flooring will be the same as the wooden floor finish throughout the building, and built to handle the heavy loads which the lift is designed to transport.

- The lift shaft is designed to include venting to the exterior in order to control and maintain a temperature difference between the shaft and the building interior as required. The landing doors will be completely smoke-proof and, when closed, will completely prevent air movement between the shaft and the building interior. The car will be equipped with thermal glass and its own air-conditioning system.

- The shaft pit has one particularly unusual feature: it will be located below sea level. In case of any water leakage, it will be fitted with a water detection device which can activate pumps to remove the water while the lift car is held between floors.

- The lift will be fitted with the very latest safety measures available, such as a special automatic relevelevelling system in the lift car and a control system designed to keep the car floor level to the landing during loading. The doors will have electronic safety barriers to their full height to ensure the damage-free loading and unloading of particularly large works of art.

Secondary lift systems

- The centre will also be provided with a secondary lift system, our machine-roomless Silens-Pro Mega model, capable of carrying loads of up to 2000Kg at a speed of 1 metre/second, and equipped with a lift car which, like the 6500Kg lift, will of course be specially created to suit the overall design of the building by Renzo Piano. The doors of this second lift will be thoroughly weather-proofed, given that they lead directly to the building exterior.

- A special lift for people with disabilities will also be installed so as to ensure their free movement around the centre.

- Finally, to round things off, two dumb waiters will be fitted to serve the centre's restaurant. These lifts will be built with special overhead clearance characteristics so as to ensure that they do not interfere with the overall visual impact of the building.

1

LIFT SOLUTIONS FOR EXISTING AND LISTED BUILDINGS

Manufacturing lifts for existing buildings to fit shaft spaces which are irregular or complex is one of our very best specialties.

REDUCED DIMENSIONS EN81-21 REGULATION

Over decades, we have designed and produced thousands of non-standard lifts for all kind of jobs and conditions. Manufacturing lifts for existing buildings to fit shaft spaces which are irregular or complex.

We offer a wide range of solutions for adapting our lifts to shaft spaces with reduced shallow headroom, pit or unusual dimensions following the EN81-21 regulation.

MRL gearless lifts for reduced dimensions:
The Silens-Pro Compact®

The Silens-Pro Compact® is the ideal solution for existing buildings with limited space available for lift installation. This product is available in a wide range of load capacities and is perfectly suited to handling traffic conditions in the vast majority of existing buildings.

It can also be installed in spaces with very limited available pit depth (350mm minimum, in full compliance with the EN 81-21 standard) and headroom clearance space (a minimum of 2650mm in accordance with EN 81-21).

All the advantages of a state-of-the-art MRL gearless lift comfortably fitted into a highly compact product.



NEED A BESPOKE SOLUTION?

Our lifts are always designed to suit the particular project in hand: hydraulic, electric with a machine room sited above, below or on the side of the shaft, drum driven systems, whatever is the most appropriate.

Our engineering department undertakes exhaustive study of each project within an existing lift shaft so as to provide our clients with an accurate and straightforward guide to the best available lift replacement options.

STRUCTURES AND STEEL TOWERS

Our lifts can be supplied with structure or we can adapt them to the customer's shaft or steel towers. Our free-standing modular structures can be provided with a wide range of finishes and can be clad with metal sheeting or laminated glass panels.

Each structure is certificated for its compression resistance capacity to both the dead weight and the variable loads exerted by the lift car and the structure. The resistance capacity of the cladding panels is certificated according to section 5.3.1 of the EN81-1 and EN81-2 (European Standards).



Bespoke lift in St. James's Street, London

St James's Street is one of the best-known and most distinguished streets in the central London district of St James's, running down from Piccadilly to St James's Palace and Pall Mall.

One of our best customers in the United Kingdom, a lift installation company with a well-founded reputation for excellence, recently entrusted us with the design and manufacture of a lift for a listed building in this emblematic London street. The project posed some interesting challenges:

- The installation of a passenger lift in a shaft of reduced dimensions, including limited pit depth and headroom clearance.
- The need to pay due respect to the particular architectural and structural characteristics of a very unique building
- The design of a lift car made to measure and finished with special materials chosen to blend harmoniously in with the building's architecture and design.

The lift design solution

After carrying out a highly detailed study of the technical specifications of the project and the various design solutions available, IMEM Lifts finally proposed the manufacture of a lift system which includes a machine room and uses a drum drive unit, where the car hoist rope is led around the drive sheave, removing the need for a counterweight inside the shaft and thereby increasing the space available for the lift car, supported on a centered sling.

The lift carries 4 passengers, has a 300Kg (661lbs) rated load capacity - the maximum available given the shaft dimensions - and serves 6 stops with an overall travel distance of 15.18 meters (49.8ft). The plan area of the car is 0.79m² (8.5ft²) in a shaft of 1065x1065mm (1.13m²/12.16ft²).

These unusually small dimensions meant that we had to design and manufacture in correspondingly reduced sizes all the mechanical elements which support the electrical control components in the shaft - such as the position sensors, limit switches and over speed governors, as well as the uppermost stanchion fixed to the shaft ceiling (incorporating a shock absorber, in compliance with EN 81-21:2009), in order to minimize their visual impact on this panoramic lift.



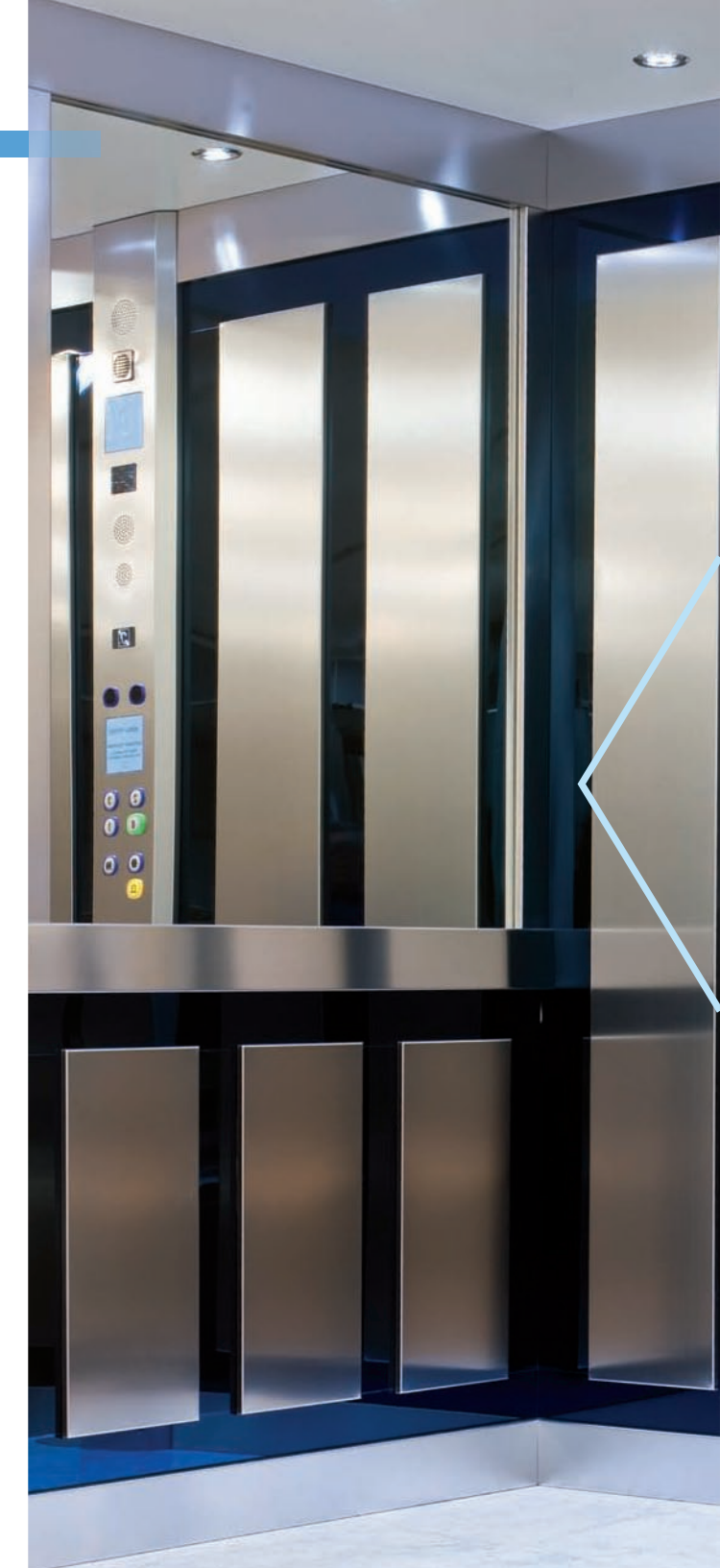
UNIQUE LIFT CAR DESIGN

Many of our customers order special and bespoke cars designed to satisfy their particular tastes and needs. When we design bespoke lift cars, the sky is the limit: we use whatever materials will best achieve the desired result, from the most straightforward high-quality laminates to the finest and most opulent finishes available.

For the St. James St. project the car base required the design of a panoramic lift car, glazed on three sides, to fit in well with the design and look of the building. Here, given the limited space available, we opted for a modular design where the car mountings were entirely invisible.

The car base was designed to slot seamlessly into the glazed wall paneling without using any intermediate component parts. The car operating panel, reinforced on its reverse side in accordance with our customer's specifications, was also a one-off design due to its positioning and exceptional slimness. The button panel was manufactured with a G-Tex Bronze Pallinato finish to match the finish on the landing doors. All these features combine to produce a highly sophisticated design and a unique and exclusive lift car.

Once the final design was approved, we manufactured the lift car to specification and, only weeks later, the complete lift system was installed to the full satisfaction of our customer. The listed building in question now houses a reliable, hard-wearing and efficient lift, which blends in perfectly with its surroundings and notably improves the quality of life of the building's owners and its all-round accessibility.



2

LIFT SOLUTIONS FOR PUBLIC FLOW IN NOWADAYS TOWNS



EN81-71 VANDAL RESISTANT LIFTS

The growing demand of protection of lifts in unguarded public areas against acts of vandalism has led us to follow the EN81-71 norm, which defines the testing methodology and the classification of lifts in terms of vandal resistance.

VANDAL RESISTANT LIFTS CAT. I.

Our vandal resistant lifts category I are equipped with the following equipment:

- **Vandal resistant car and landing doors:** Available in several panel executions including EN81-58, E120 and EW60 class fire rated panels. Re-enforced door panels with slanted tamper-preventing back profile at door closing side. Compliant with paragraphs 5.3.1.5 and 5.3.1.8 of EN81-71. Door panels successfully passed EN81-71 pendulum test for EN81-71 level II compliance. (Paragraphs 5.3.1.2 and 5.3.1.3). Flexible finishing possibilities include vandal-resistant heavy-duty stainless steel cladding patterns such as 5WL, leather or linen.
- **Heavy duty car with special design** with protective measures complying with The Anti-flammability Standard EN13501-1 Class C. Car roofs including Hatch are able to resist more than 150kg. Vandal resistant led lights are compulsory assuring 100 lux in car floor. Easy to clean car enclosures with vandal, fire and water-resistant finishes.
- **VR – Car operating panel with special release system.** Supplied with IP54 push buttons and vandal resistant Displays.
- **VR- Landing face plates and signalisation.**
- Car alarm according to regulation.

VANDAL RESISTANT LIFTS CAT. II

In addition to each item shown above we need to provide twice more efforts to control crushing, shearing, cutting, trapping, impact hazard, electrical and thermal hazard in our lifts. The car construction is not less than 21 mm thick, complying with EN13501-1 class A2, using VR leds. Pegasus doors are provided with the proper VR –Cat.II certificate.

Each set of electrical equipment includes a safety system according to EN81-71 including intrusion control, controller cabinet and main floor alarm with adjustable volume.



PUBLIC BUILDINGS, SHOPPING CENTERS, HOSPITALS, UNDERGROUND AND OVERGROUND RAILWAY STATIONS

IMEM designs, manufactures and updates lift systems, delivering effective solutions which meet all possible requirements for the vertical transport of passengers and goods in buildings of all kinds - safely, efficiently and comfortably.

Our lifts meet the needs posed by the whole range of building types:



• **Public buildings** (offices, hotels, museums, government buildings, listed buildings and so on). This is a very varied category which includes anything from corporate office buildings to commercial properties. What they all have in common is high levels of traffic. What we offer for this kind of building are electric lifts, with or without a machine room and with a choice of travel speeds. The advanced technology we deploy allows us to offer maximum performance and significantly smaller shaft spaces.

• **Shopping centres**
Lifts in larger-scale commercial sites can be electric MRL (machine-roomless) lifts or hydraulic lifts, depending on the particular needs and conditions of each project. An important distinction to be made is between lifts to be used for both goods and passengers and goods-only lifts. In both cases, the high levels of traffic require robust and hard-wearing equipment, designed and built to last.

• Hospitals

The lifts which we design and build for use in medical centres are bed lifts and stretcher lifts. Whether machine-roomless or hydraulic, our hospital lifts are specially designed to deliver straightforward, safe and comfortable transport for patients, staff and medical equipment. We also provide lift systems specifically designed for hospital passenger traffic. **IMEM** offers a wide range of lift car sizes, accessories and finishes to ensure the best possible conditions for patient transport, delivering a comfortable and noise-free ride and ease of use for visitors and medical professionals.

• Industrial sites

We offer a range of lift types suitable for industrial sites dedicated to manufacturing and/or assembly. Our large capacity lifts are much in demand, and are designed for the transportation of heavy goods up to several tons in weight, with or without accompanying personnel and are very robust and hard-wearing. These lifts are highly adaptable to specific environments and functions, and can be supplied corrosion-resistant, specially reinforced and so on, as required.

• Underground and over-ground railway stations

The high levels of daily passenger use characteristic of the mass transport railway systems common in large cities for inner-city travel and communication with their suburban areas demand very high-specification lift systems, which we at **IMEM** have a wealth of experience in designing and manufacturing over many years.

Independently of whether the lift systems are electric, with or without a machine room or hydraulic, we are well-versed in the design and manufacture of lifts for underground stations suitable for people with reduced mobility, vandal-resistant, fire-resistant, water-resistant - and many other specifications to suit the relevant standards and regulations.

• Other uses

The variations in possible building types and uses are almost endless, and the decision about which particular kind of lift system to install is not one to be taken lightly. At **IMEM**, we can carry out a lift traffic analysis which allows our customer to decide what solution can handle the anticipated traffic most effectively, how many individual lifts ideally need to be installed, what would be their optimum location, how to resolve the principal construction difficulties which might arise, and so on.



3

NEW LOOK TO THE FUTURE LIFT SOLUTIONS



BEYOND COMPLIANCE. EN 81-70

In addition to guaranteeing compliance with DDA requirements, **IMEM Lifts** offers a comprehensive range of features designed to improve accessibility for people with reduced mobility.

These include:

- Our lifts' well-known exceptional ride comfort.
- Our Direct Approach System - supplied as standard with all our MRL lift systems - ensures perfect leveling at every stop, above and beyond that specified by regulation.
- Audio signals: our lifts can be fitted with voice synthesizers programmed in English or other languages required, such as German, French etc..
- Visual signals and indicators can be adapted to suit particular customer requirements. Lift control and landing call panels can be supplied permanently engraved in a wide range of different languages, as required.
- Our lift cars are designed to be highly adaptable to specific requirements with a wide choice of indicators, control panels, lighting, emergency lighting, push-buttons and wall finishes. Displays are available in different sizes and technologies, push-buttons in a range of models and manufacturers depending on customer needs.
- Passenger information panels in a range of formats.
- Priority call options available for people with disabilities.
- In-car closed circuit TV passenger safety systems in both public and private installations.





FIRE REGULATIONS. WHAT ELSE?

Our international experience allow us to comply with the most demanding fire regulations throughout the world. European EN81-73, EVACUATION LIFT BS9999 from U.K, FIRE FIGHTING EN81-72, ASI735 Anex A (Australia), NFP 81-207 (France), Firemen function (Belgium), Spanish Public Buildings, GOST R 52382-2010 (Russia).



ENERGY EFFICIENCY AND ECO-FRIENDLY PRODUCTS

Two BREEAM credits are available for the installation of energy efficient lifts and **IMEM** demonstrates compliance through our engineering department and our silens range of products.





BREEAM CREDIT 1

- The final choice of passenger lift system best suited to the building will result from determining the particular type of lift the building requires and the number of lifts needed to efficiently transport the overall number of building users, while minimising passenger waiting times and ensuring that the system is equipped with all the features necessary to best resolve the specific vertical transport requirements of the building in question.
- The energy consumption must be estimated and the system with the lowest energy consumption specified.

BREEAM CREDIT 2

- The lifts operate in a stand-by mode during off-peak and idle periods. For example the power side of the controller and other auxiliary equipment such as lift car lighting and ventilation fan switch off when the lift is not in motion.
- Where lift motors use a drive controller capable of variable speed, variable voltage, variable frequency control of the drive motor.
- The lift has a regenerative unit so that energy generated by the lift (due to running up empty and down full) is returned back to the grid or used elsewhere on site. Eco-Saver.
- The lift car uses energy efficient lighting and display lighting (>60 Lumens/Watt or fit tings that consume less than 5W e.g. LEDs).



ALTAMIRA 2.0 CONTROLLER

The new Altamira 2® control system opens up a whole new world of possibilities in fulfilling the particular needs of each job and of each customer.

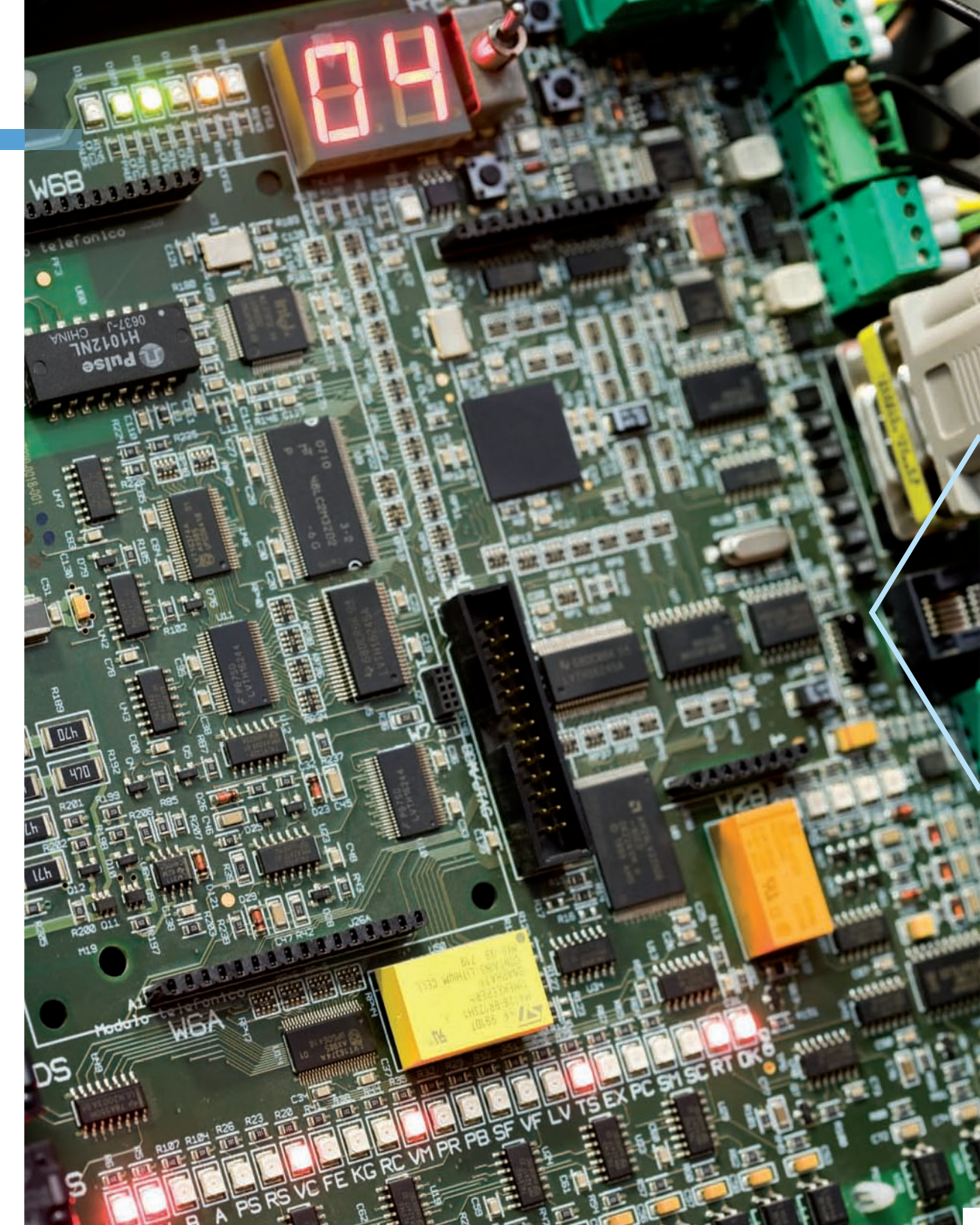
Open Protocol

We provide a complete “plug and play” CAN BUS controller as standard. All our wiring looms, trailing cables and shaft connections are pre-wired, numbered and labeled to save time and money during the installation process. To be maintained by any competent lift company.

Our in-house produced control panels can be easily monitored by the internet.

Direct Approach System

Our Altamira 2.0 control panel includes Direct Approach System which allows the optimum lift travel speed curve according to the distance remaining to the selected destination. This eliminates the delays of previous systems and represents a major step forward in passenger comfort and technical specification.



4

ARCHITECTS, LIFT ENGINEERS, CONSULTANTS AND END-USERS ARE THE PAST, PRESENT AND FUTURE OF IMEM LIFTS

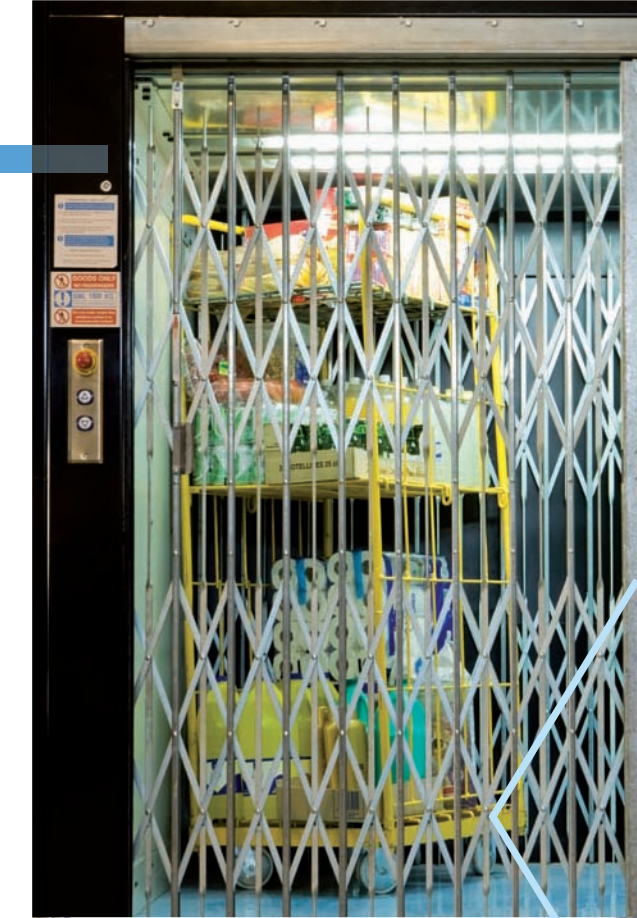


LOOKING FOR LIFT DOORS?

Experience shows that many of the problems and interruptions in service that occur during the life of a lift system are either directly or indirectly related to the operation of the lift doors. Keeping these incidents to an absolute minimum generates major savings in after-sales service delivery and increases per-unit profits.

We design and manufacture every single one of our lift systems, guaranteeing the provision of the appropriate doors, fit for purpose for each particular project. Furthermore, we manufacture our wide range of lift models so as to ensure their full compatibility with all existing types of car or landing door:

- **Automatic side and centre-opening lift car doors.** Suitable for the great majority of projects, such as residential buildings, hospitals, office buildings and so on, and available in a wide range of heights and widths, with a generous choice of finishes, including epoxy paint and stain less steel in a variety of textures, or glazed.
- **Semi-automatic hinged landing doors.** Particularly well-suited to lift replacement jobs or existing shafts where space is restricted.
- **Automatic folding car doors (bus type).** Perfect for lift cars of limited size in pre-existing lift shafts.
- **Manual concertina shutters & picket gates.** These are the sturdy and hardwearing doors which we fit to our heavy goods passenger lifts and to our goods lifts with or without a self-supporting structure.



ARE YOU LOOKING FOR A HIGH SPEC SOLUTION TO MEET THE DEMANDS OF ANY CONSULTANT AT AN AFFORDABLE PRICE?

We are dedicated to providing the best possible advice in order to arrive at the most effective solution for each project, in full compliance with all the relevant standards and regulations, and to ensuring that the lift system is delivered on-time, on-budget and fulfils the highest standards of safety, performance, appearance, efficiency and technical specification.





INCLINED LIFTS

- We specialize in the design and manufacture of inclined lifts and also hold the 0062-LDV-B-001-10/2007 lift certification.
- Inclined lifts make an interesting alternative to traditional escalators, which cannot be used by people with limited mobility. Our inclined lifts, including machine room-less solutions, have a capacity of up to 2,000 kg and reach a speed of 1.6 m/s.
- Inclined lifts are also the best solution for those areas with very pronounced slopes where isolated homes must be properly communicated.
- They can be supplied with front or side entry doors, with bottom or top mechanisms, and with single or double entrances.
- We offer both, indoors or outdoors installations. Our inclined lifts can be supplied with a huge range of optional extras to fulfill the most demanding expectations and requirements.



LIFT CARS FOR DEMANDING CUSTOMERS. SCENIC LIFTS

Architects and lifts installation companies often need to make important decisions on the style and design of elevator systems:

- To find lifts which suit the architectural design of the building.
- To fit panoramic and glazed lifts which comply with all applicable safety standards.
- To incorporate specific decorative features and components in the lift system, such as cars with ceilings, walls and flooring of special high-quality materials.
- Designed to further embellish already impressive and striking architecture, our panoramic lifts are beautifully shaped and built in top-quality materials, combining natural elegance with precision engineering, and are generally installed in high-prestige buildings.
- We offer a wide range of attractive looks, curved or rectangular, vaulted or domed, hexagonal or octagonal, to suit customer choice. The many detailing component options on our panoramic cars help to produce the effect required, from calm sophistication to daring innovation.

A GLASS LIFT - 6500Kg, MRL GEARLESS - WHICH TRAVELS DOWN INTO THE SEA ITSELF

One of IMEM Lift's most recent and exciting challenges is the design of a series of highly specialised lifts which we will be manufacturing and installing in the latest avant-garde project by the internationally-renowned architect Renzo Piano: the arts centre commissioned by the Marcelino Botín Foundation in the city of Santander, in northern Spain. His unique building is already under construction and will project out into the beautiful Bay of Santander. This international fine arts centre will house exhibition space, an auditorium, a restaurant and many other arts-related facilities.

