

Access to Innovation

THE BIGGER PICTURE

“Innovation is the ability to see change as an opportunity, not a threat.” At XSPlatforms, we wholeheartedly agree with Kapil Sibal, the author of this statement. In our view, innovation is a matter of perspective. In our case, that includes adopting the viewpoint of the people using our products, as well as project developers, architects and facility managers. It also means being sensitive to environmental concerns. Being the first to identify safety issues, and developing smart solutions.

This edition of Access to Innovation highlights some of the challenges we saw in the world of building and architecture, and demonstrates how such challenges can be translated into innovative solutions. After all, it is only by being fully aware of the bigger picture — the context in which our products are used — that we can hope to come up with genuinely useful innovations. Solutions that simplify working at heights while maintaining and even improving safety standards.

Geert Cox

Managing director, XSPlatforms



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THE FUTURE IS ALUMINUM

It's light, strong and durable, and already one of the most widely used metals in the world. But the popularity of aluminum looks set to increase further as manufacturers seek to reduce carbon emissions. "Aluminum represents a huge energy bank for future generations."



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SAFE 'N' STYLISH

First and foremost, facade access equipment must be safe. It should offer users maximum freedom of movement. However, that does not mean the equipment cannot at the same time be good to look at.

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THE ART OF BUILDING

An important requirement for facade access solutions is that they should have minimal impact on the building's architectural integrity. Meet some of the outstanding architectural feats for which XSPlatforms has provided solutions.



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PARTNERS IN SAFETY

Around the world, regulators are continually developing and refining strategies for improving the safety of people working at (great) heights. However, manufacturers also have their responsibility in this regard, and their role goes further than ticking off a checklist with minimum requirements. Together with internationally renowned certification body TÜV, XSPlatforms continually scrutinizes entire design and manufacturing processes to ensure the highest possible levels of safety.



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GREEN BUILDING GATHERS PACE

It is a matter of corporate responsibility, of course. But as more and more developers and architects realize, Green Building is also the best way of ensuring long-term profitability. The race for the greenest skyscraper is well and truly on.



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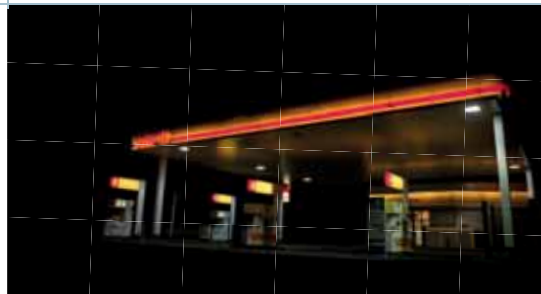
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CASE: 250 GAS STATIONS

Dutch-British oil giant Shell asked XSPlatforms to design a reliable solution for hundreds of gas stations in the Netherlands. The challenge: providing rock-solid fall protection which in case of a fall would not damage the light and fragile roof construction.



OTHER CASES:

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THE FUTURE IS ALUMINUM

It is already one of the most widely used metals in the world. But the popularity of aluminum looks set to increase further as manufacturers invest in sustainable product development and seek to reduce carbon emissions. XSPlatforms is among the growing number of manufacturers seeking new applications for this versatile material.

It may be the third most common element in the earth's crust – after oxygen and silicon – but for a long time aluminum products were extremely rare. It was not until the early 19th century that scientists first discovered how to extract the metal, and the

process was so complex and costly that for decades it remained a rare and precious commodity. It is said that at a banquet organized by French king Napoleon Bonaparte III, only the most honored guests were given aluminum knives and forks, their less favored fellow guests having to make do with golden cutlery.

World-conquering strengths

However, ever since Charles Martin Hall patented an innovative, inexpensive method for producing aluminum in 1887, aluminum has conquered the world. The material has an incredibly high strength-to-weight ratio, is impenetrable by air, light, water and micro-organisms, and a perfect conductor of heat and electricity. Aluminum is used to create the lightest possible airplanes and high-speed trains, as well as such diverse products as roof strips, kitchen foil and beer barrels. It's a vital element in many climate facades, regulating heat and sometimes even conducting electricity or water. XSPlatforms employs aluminum in virtually all its products, partly because aluminum is corrosion proof and durable, but also because lighter equipment reduces the environmental impact of transport and requires less structural support.

Perpetual recycling

In recent years, the case for aluminum has become even stronger. As the world has woken up to the need for more sustainable products, product developers including XSPlatforms are turning more and more towards aluminum because of its 'cradle-to-cradle' potential. Although the first-time production of aluminum from bauxite is energy-intensive, the material can from then on be recycled virtually indefinitely. Thanks to its low melting temperature, aluminum recycling takes only 13 kWh per kilogram, just 5% of the energy needed for its original production.

Urban mining

Crucially, aluminum does not lose any of its value in the process of recycling, which means it can be reused over and over again. It has

“Aluminum
can be
recycled
virtually
indefinitely”



been estimated that 75% of the aluminum ever produced is still in use. Research done at Yale University suggests that globally, the built environment alone nowadays contains around 400 million tons of aluminum, described as a 'huge urban mine, which can be extracted and reused by future generations time after time'. That this is already done – especially in the construction industry – was demonstrated by a Dutch study conducted in six European countries, which showed that 90% of aluminum in (residential and non-residential) buildings is reused, with some countries reporting figures up to 98%. As the study concluded: aluminum is not just a very good, versatile material, but the 'vast reserves of [aluminum], available for recycling, constitute a huge energy bank to serve the needs of future generations'.

“A vast energy bank for future generations”

EXTENDING THE POTENTIAL OF ALUMINUM EXTRUSION

ALUMINUM IS PERFECTLY SUITED to the extrusion process, in which material is pushed through a die of the required shape. Compared with other manufacturing processes, extrusion produces little or no waste and produces an excellent surface finish. XSPlatforms uses this technology to create aluminum sections for suspended platform systems and gantries.

THE EXTRUSION TECHNOLOGY used by XSPlatforms is a continuous process, which in theory means there is virtually no limit to the profile's length. However, the unusually high profile of the suspended platforms combined with large top and bottom sections, made it difficult to fill the die fully. It was a unique challenge: never before was such a high profile attempted. XSPlatforms succeeded in overcoming this challenge, resulting in very complex sections without any welds in critical places, setting a new standard in safety.



FROM PRECIOUS ORNAMENT TO HIGH-TECH FACADE



THE WASHINGTON MONUMENT'S aluminum tip, weighing 100 ounces/ 2.85 kilograms, looks modest by modern standards, but at the time of its construction, it was the largest single piece of aluminum ever cast. Its function was ornamental: in the late 19th century, aluminum was expensive and rare.



Nowadays, aluminum systems are a key element in intelligent climate facades, enabling architects to reduce the energy consumption of buildings by up to 50%. Aluminum solar collectors can be installed to reduce energy consumption for artificial lighting and heating in winter, while aluminum shading devices can be used to reduce the need for air conditioning in summer.



THE ART OF ALU MI NUM

Aluminum is not just a highly versatile and practical material, it has also provided inspiration to many artists. For example, aluminum is one of the main working materials for French sculptor Stéphane Cipre. His combinations of typographic shapes, cast in aluminum, both depict their subjects and spell them out. Whether it's a fish, a bench or, as in the sculpture depicted below, Art Sanglé ('strapped-up art').

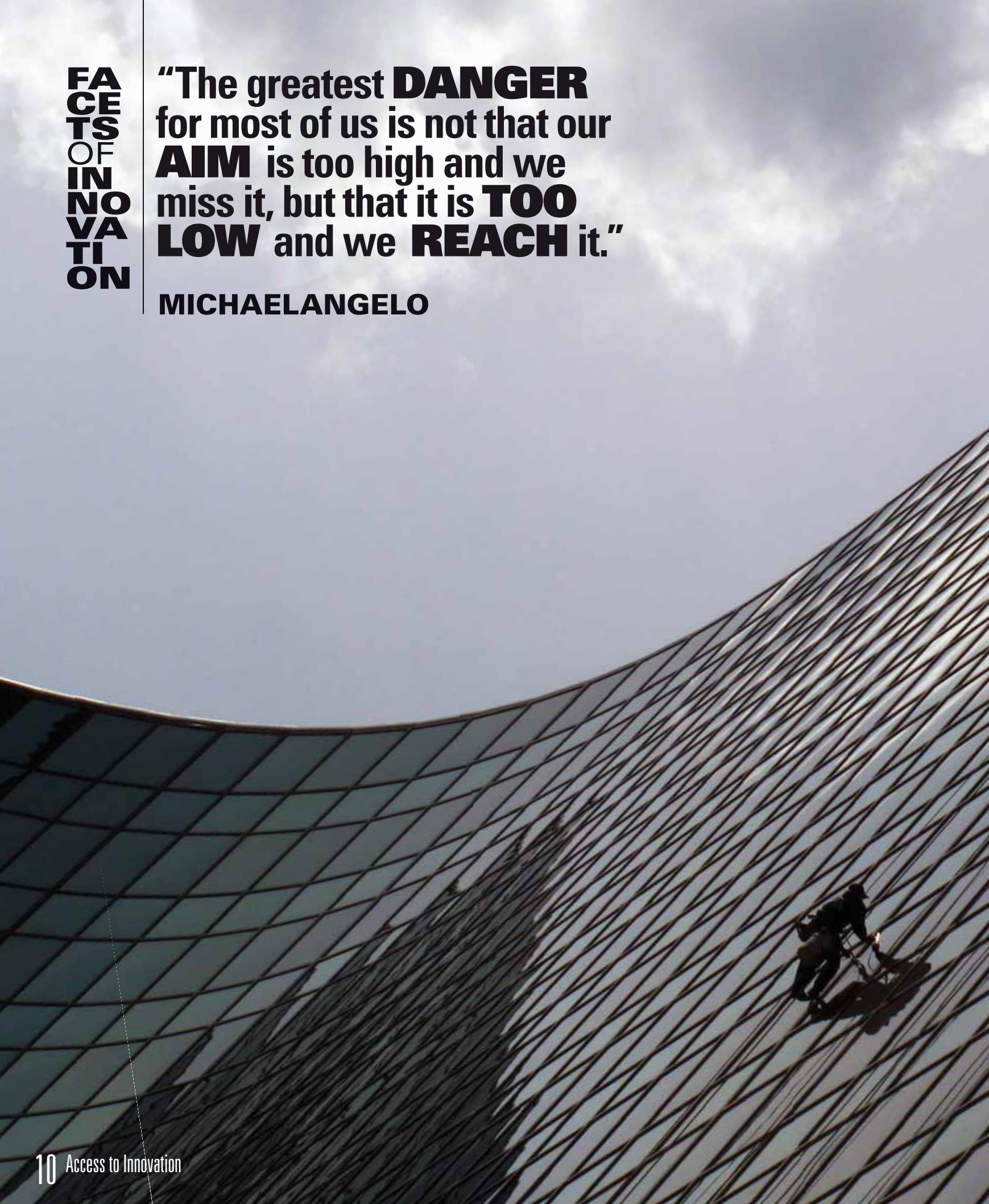


STEPHANE CIPRE PARIS 1968

Receives training as a designer stylist, working in the family's furrier's shop. Turns to sculpture, taking courses at the Villa Thiole arts academy in Nice. First exhibition in Nice, 1997. Exhibits work in galleries and museums throughout France and the Benelux countries, followed by exhibitions in Barcelona, New York, Geneva, Dubai, Delhi and Miami.

“The greatest **DANGER** for most of us is not that our **AIM** is too high and we miss it, but that it is **TOO LOW** and we **REACH** it.”

MICHAELANGELO

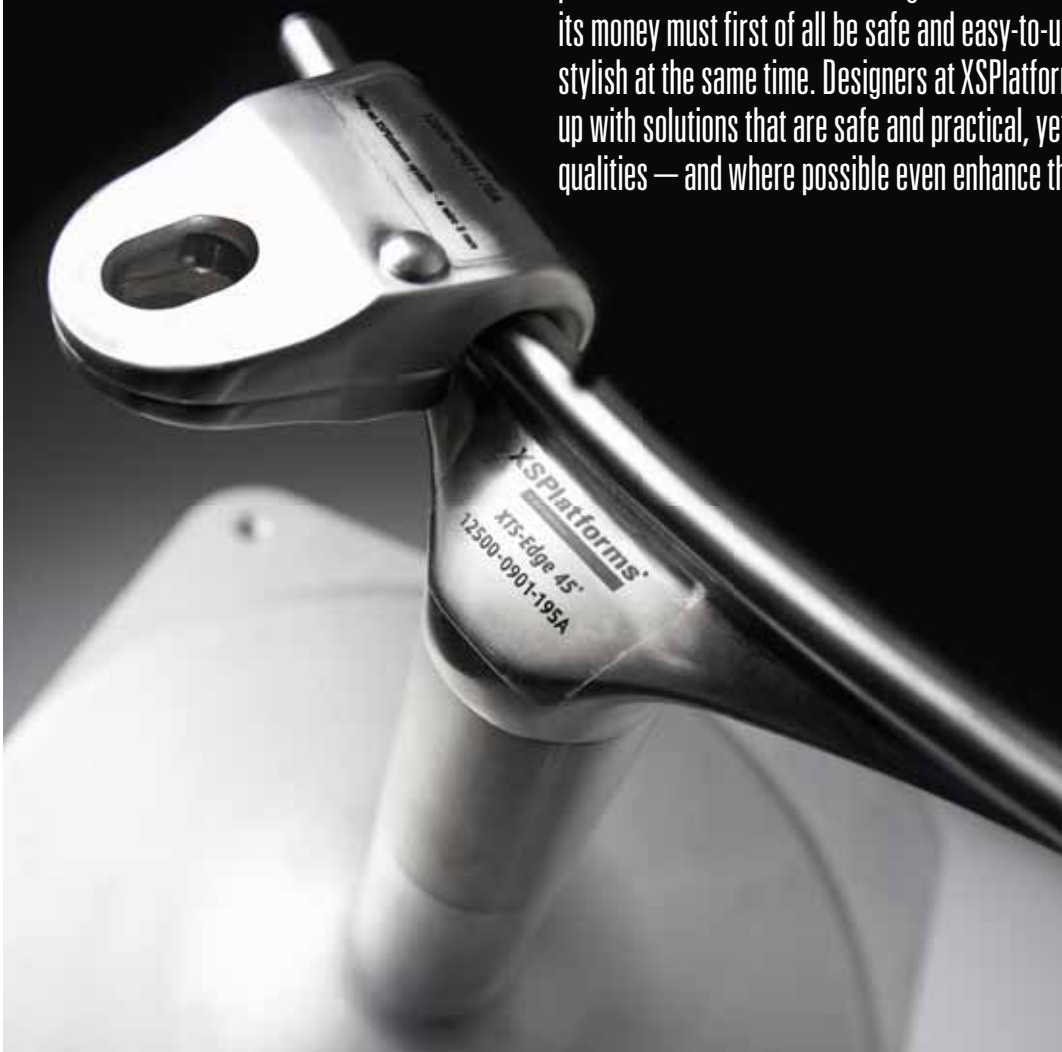




SAFE, PRACTICAL... AND STYLISH

Providing maximum safety while obstructing the user's freedom of movement as little as possible is the main criterion for good facade access equipment. Any equipment worth its money must first of all be safe and easy-to-use. But that does not mean it cannot be stylish at the same time. Designers at XSPlatforms are continually challenged to come up with solutions that are safe and practical, yet preserve a building's architectural qualities — and where possible even enhance them.

When using lifeline systems, workers' lives depend on the quality of the anchorage points to which the lifeline is attached. In traditional systems, the impact of a fall often damages the roof structure. XSPlatforms set out to design an anchor point that would protect the roof structure — without, of course, compromising the user's safety. The XTS-Impact anchorage point does just that. In case of a fall, the energy of the fall will be absorbed by the integrated shock absorber. The residual impact is so slight that even steel deck or wooden roofs are not damaged and remain fully waterproof.





GUARD RAILS are the most effective way of providing collective safety on roofs. However, they are usually not part of the architect's plans. XSPlatforms developed a guard rail system that does not distract attention from the building's architectural looks. It offers a choice between straight and curved guard rails, it features special solutions for roofs with raised parapets, and the possibility of simply folding down guard rails whenever they are not in use.

SCAFFOLDING SYSTEMS are rarely designed to look good. Yet, for weeks or even months they are the most visible aspect of a building's facade. Conventional scaffolding often looks untidy, because of ill-fitted netting, loose boards and improvised measures to keep out unauthorized visitors. XSPlatforms presents a scaffolding system that is different, thanks to integrated toe-boards, transparent plastic window panels, the possibility to fit netting in advance and fully integrated, lockable fences.





ING HOUSE

Head office of ING Group (banking and insurance)
Location: Amsterdam, the Netherlands
Architects: Meyer & Van Schooten, Amsterdam

This award-winning office building seems to float alongside a highway, thanks to a technique borrowed from bridge building. ING House is constructed like a table on sixteen steel legs, each of which stands freely on a pin in a large block of concrete in the ground. The streamlined shape, in anodized aluminum and glass, has earned the building its nickname 'The Shoe'.

ING House was designed to create an innovative, transparent and sustainable image. The facade makes the most of natural ventilation mechanisms

and the sun's heat, while an advanced climate management system continually monitors the sunlight's intensity, height and the angle at which sunlight hits the facade, adjusting the shading device accordingly.

Six inner gardens form an integral part of the building's design. Each of these gardens was landscaped to a different theme. Maintaining these gardens and the surrounding glass facades has been made possible by horizontal steel cable installations developed by XSPlatforms.

THE ART OF

Architecture, like any other art form, is constantly pushing boundaries. It seeks new challenges in scale and form. The architect's creativity interacts with a building's surroundings, with local history as well as a city's future.

Architects strive to combine functionality and esthetic appeal, expressing new, sometimes daring concepts which nevertheless fit in with — and contribute to — a city's urban landscape. Through the years, XSPlatforms has provided solutions for working at height for numerous buildings, many of them remarkable architectural feats.

BUILDING



SKY TOWER, ABU DHABI

310-meter skyscraper, housing offices and apartments

Location: Abu Dhabi, United Arab Emirates

Architects: Arquitectonica, A2so4 Architecture

The Sky Tower is the centerpiece for The Gate, a huge residential development in the new Al Reem Island district of Abu Dhabi. Al Reem Island is a prestigious urban project, covering 6.5 million square meters and involving investment exceeding US\$ 30 billion (EUR 21 billion).

In the words of the Florida-based architects Arquitectonica, “the urban significance of the site requires a corresponding architectural response”. This has been achieved by a combination of four residential towers, which form a visual gateway to the new district. The four towers are connected by bridges to form a podium roof. This space is used to create a park, and five elliptical swimming pools which will light up at night.

Towering over this monumental ‘portico’ stands the Sky Tower, an elliptical structure in which apartments are vertically stacked around a central core. The residential floors are served by lifts which travel at 8 meters (26 feet) per second. Certain rooms cantilever beyond the elliptical skin, creating giant bay windows that project into space. The building’s facade will be maintained using two XSPlatforms T104 roof cars with a heightened base.

UNIVERSITY LIBRARY LEUVEN

Location: Leuven, Belgium
Architect: Warren Whitney

During World War I, the library of Belgium’s oldest university (dating back to 1425) was razed to the ground. After the war, the future president Herbert Hoover commissioned New York architect Warren Whitney to rebuild the library in another location.

Whitney was a partner in the famous architectural firm Whitney & Wetmore, whose most important work is the Grand Central Terminal in New York City (1913). Whitney employed a Low Countries Renaissance



style for the reconstructed library, making liberal use of symbols referring to the war. After the library had again been largely destroyed during World War II, it was rebuilt according to Whitney’s original designs. During a large-scale renovation project, which ran from 1999 to 2003, XSPlatforms installed facade maintenance systems for what remains one of the largest and most impressive architectural monuments in Belgium.

The Venetian Macao Resort Hotel is a Renaissance-styled, Italian-themed resort, with replicas of all of Venice's famous landmarks, including the Rialto Bridge, St Mark's Square, the Doge's Palace and three (indoor) canals.

At 1 million square meters, the Venetian Macao is the largest single structure hotel building in Asia and the fourth-largest building in the world by area. Alongside the hotel and the world's biggest casino, the building features a show arena catering to 15,000 spectators, an exhibition and conference center, 350 shops and 30 restaurants.

The resort, which was built in just 36 months, rests on more than 14,000 precast concrete piles, each of which was driven 60 meters deep. This was necessary since the resort is located on land which was reclaimed from the sea. Its facade is maintained using three XSPlatforms T104 roof cars.

THE VENETIAN MACAO

Luxury hotel and casino resort
Location: Macau, China
Architects: HKS Hill Glazier Studio, in collaboration with Wilson & Associates



ONTARIO TOWER LONDON

Luxury residential development
Location: London, England
Architects: Skidmore, Owings & Merrill

The Ontario Tower is a 106-meter residential building on the north bank of the Thames, which collected the bronze medal in the 2007 Emporis Award, ahead of nearly 600 other new developments.

The building is characterized by an oval footprint and a roofline that slopes down towards the river. This design was inspired by the site's industrial heritage, and mirrors the factory chimneys that once lined this stretch of the Thames, as well as the smokestacks of Atlantic liners that once passed the site.

The oval, sloping roof, which features LED lights all along its rim, presented an extra challenge when XSPlatforms was asked to design a building maintenance system for the Ontario Tower. The installation features a rail track that follows the shape of the building, and a mechanism that ensures the gondola remains in horizontal position even where the rail track slopes down. When not in use, the installation can be stored out of sight, inside its parking place, ensuring that the building's architectural integrity is not compromised.

PERMANENT FALL PROTECTION

XTP-Guardrail

MAXIMUM SECURITY AND MINIMAL IMPACT ON A BUILDING'S ARCHITECTURAL DESIGN? XSPLATFORMS HAS THE SOLUTION: XTP-GUARDRAIL.

The XTP-Guardrail product range includes elegant, free-standing guardrail systems. Depending on the building's design, customers can choose between straight and curved uprights. A third option is to use collapsible uprights, which ensures the guardrails are only visible when actual work needs to be done. For roofs with raised parapets, XSPlatforms has developed inconspicuous, wall- or parapet-mounted guardrail systems.

The free-standing guardrail systems have been designed to prevent damage to the roof structure: they are not in direct contact with the roof covering, which reduces the risk of leakage or damp intrusion to an absolute minimum. The innovative design, in which the horizontal elements can be clicked into place (rather than having to be fed through a series of posts and without the need for tools), makes for quicker, easier and ultimately safer installation.



FREE AS A BIRD

Lifeline systems provide much-needed security, but ideally without restricting the user's freedom of movement. The XTS-Linked system allows easy horizontal movement with a minimum of anchorage points. The user is connected to the system by the XTS-Slider runner, which is easy to attach and operates very smoothly, passing brackets and corners easily.

XTS-Linked, also for walls and ceilings

In addition to anchorage points for roofs, XSPlatforms has introduced a horizontal lifeline system for wall and ceiling mounting. The XTS-Linked Wall anchorage points can be fixed to concrete or brick walls. The XTS-Linked Ceiling anchorage points can be fixed to the steel structure of the building.

XTS GLOBE

For even more freedom of movement when using mobile lifelines of up to 18.5 meters, XSPlatforms has introduced the XTS-Globe rotating anchorage point, which features a brand new innovation: a safety eye revolving through 360°. Like other XSPlatforms anchorage points, XTS-Globe is easy to install (without damaging roof covering) and can be inspected at any time without activating the anchor.





forms

XSP07B3198

XTS-IMPACT:
NEXT GENERATION
ANCHORAGE POINTS

MAXIMUM SAFETY, MINIMAL FUSS

USING LIFELINES only makes sense when those lifelines are attached to a secure, reliable anchorage points.

The new XTS-Impact anchorage points provide such security, while installation is surprisingly easy and quick.

The anchorage point can be mounted directly onto the existing roof covering - four to five times as fast as with conventional anchorage points. This makes the anchorage points perfectly suited to short activities, such as inspection, cleaning or small-scale repair work, especially since no structural adaptations are required and the existing roofing is not damaged. In case of a fall, the patented design of the XTS-Impact system flexes in the direction of the fall. The anchorage points come equipped with integrated shock absorbers, with residual impact so slight that even steel deck or wooden roofs are not damaged and remain fully waterproof.

XTS-Impact has been certified to EN 795 classes A1 and C, and is available through selected distributors worldwide. For more information, visit www.xsplatforms.com.

“INNOVATION
distinguishes
between a **LEADER**
and a follower”

STEVE JOBS
FOUNDER AND CHAIRMAN, APPLE





NOT ROCKET SCIENCE

New, innovative products may offer real benefits in terms of user-friendliness and efficiency, but the bottom line is: are they safe? Ultimately, that is for notified bodies to decide: organizations accredited to test a product's conformity to current safety standards.

How notified bodies enable product innovations without compromising safety

All of XSPlatforms' products carry the CE mark, which indicates that a product meets all European consumer safety, health and environmental requirements. The CE marking process is based on the principle of self-declaration: a manufacturer signs a declaration of conformity, after which (in the case of certain product groups including suspended access equipment, fall protection and facade maintenance systems) a notified body carries out inspections. Yet for XSPlatforms, cooperation with notified body TÜV starts much earlier: in the very first stages of the design process.

How important is a notified body like TÜV for a manufacturer like XSPlatforms?

Allert Gort (AG): "Absolutely essential. As a manufacturer, there is always the danger of developing tunnel vision. You need an independent third party, which objectively looks at your products and design process, and which is not afraid to ask troublesome questions."

What do you look for in a notified body?

AG: "In brief, expertise and international scope. When you invest in developing a new product, you want to know as early as possible whether your ideas are compatible with international safety standards. TÜV have the expertise and flexibility to assess ideas even in the early stages of product development, and to give valuable feedback. And they have a solid reputation around the globe, both for their expertise and independence."

Speaking of which, how does TÜV guarantee its independence?

Jos van Grootveld (JvG): "As a notified body, our independence is scrutinized each year by the national authorities and the Dutch Accreditation Council. On top of that, we carry out our own risk assessments to minimize the risk of a conflict of interests. In our case, that risk is already lower, because unlike many other notified bodies, we do not offer consultancy services. We restrict ourselves to quality assessments and certification."

How would you characterize your approach to the testing and certification process?

JvG: "Our philosophy is that you should examine the company's processes as well as its individual products. Testing an individual product does not tell the whole story."

Not even destructive tests?

JvG: "No. They have their use, but these tests contain so many variables that there is no guarantee they can be reproduced with the same result. A much more fundamental method is to extensively check and verify all the underlying calculations. Ideally, a manufacturer can prove that the entire process of development and production is watertight, down to the smallest detail."



Jos van Grootveld, Manager Inspections at notified body TÜV Netherlands (left), and Allert Gort (XSPlatforms) discuss the journey from idea to certified product.

Could you illustrate how the process of certification works for a new product?

AG: "Take our latest scaffolding system. As soon as we had a first design, we approached TÜV to discuss which components will need testing and in what way. Then we drew up test protocols, which again were presented for approval to TÜV. We also discussed the test set-up with them."

JvG: "In that process, we look beyond the product itself. Our final judgment relates to the entire package, including all documentation, like manuals."

AG: "Then it is up to us to document the entire production process, using international ISO standards. It should be possible to trace and reconstruct every step of the development and production process. That is essential, because it enables us to guarantee that every scaffolding system we sell has exactly the same characteristics as the tested prototype."

What is your view of the way XSPlatforms deals with safety standards?

JvG: "My general impression is that they invest a lot of energy in the preparatory stages of a product's development. That pays off at the testing stage. We sometimes compare our role to that of a filter. We identify safety issues that a manufacturer has overlooked. With some manufacturers, you can still find fairly fundamental issues. With other companies, including XSPlatforms, it is generally more a question of checking the finer details."

Are there ever any issues in which existing safety standards do not provide the definitive answer?

AG: "That does happen, especially in the case of product innovations. That is why it is important that a notified body looks beyond the current standards. A lot of regulations were drawn up years ago, and there has been many innovations since then. Take materials like fiber-reinforced plastics. They are not mentioned in the current safety standards, but that does not mean you cannot use them. If airplanes and minesweepers are made out of this material, then surely it should be possible to use it in facade maintenance equipment?"

JvG: "Once the market puts forward an innovative solution, a notified body should be willing to assess its safety. You cannot hold back an innovation until the next revision of the safety standards. It is up to us to ensure such innovations offer the same level of safety as more traditional products. That is a serious responsibility, but we are not afraid of shouldering it. Ultimately, everything can be reduced to universal principles of mechanical engineering."

AG: "Exactly. Meeting safety standards requires well-organized, well-documented processes, an open mind and especially good, meticulous preparation. But in the end, it is not rocket science."

WEATHERPROOF GONDOLA

It may look as if all gondolas are the same. But the latest gondola by XSPlatforms changes that. It is completely different from any other gondola in the market today. It provides a spacious working place at height and is easy to operate. What is more, it is the first gondola which has been designed to shield users from adverse weather

conditions, enabling them to work safely even under conditions that would otherwise have made work impossible. A practical solution, but also an opportunity to finally create a gondola which looks good, does not disfigure a building's looks and is even something that is worth looking at.



The electronics of gondolas and roof cars are traditionally connected by one control cable, enabling users to control the movement of the roof car. However, when working at heights of 60 meters and more, this calls for special conductor cables. These are expensive, and installation is labor-intensive. XSPlatforms therefore equipped the latest generation of gondolas with technology for wireless communication with the roof car. This saves costs. After all: there is no longer a control cable that needs to be serviced, maintained or replaced.

Innovation WIRELESS ROOF CARS

RC-XSlight

THE BEAUTY OF SIMPLICITY

More and more, service and maintenance of facades is carried out using building maintenance units (BMUs). Partly because legislation and safety protocols are imposing ever stricter safety standards, partly because BMUs offer users a great deal of flexibility.

However, a potential drawback is the size of installations. XSPlatforms set out to design a lightweight roof car which takes up minimal space: RC-XSlight. This roof car can use various rail tracks, either freely laid on the roof or anchored to the roof structure.

The RC-XSlight was designed with simplicity in mind. It is a relatively lightweight, competitively priced roof car, which comes complete with a self-hoisting gondola. It has a maximum reach of 3 meters and maximum installed height of 100 meters. A separate parking place for the gondola is no longer necessary, as it can be parked on the roof car's platform.



LINKING A BMU TO A BMS

PERFECT CONTROL

AS BUILDING MAINTENANCE units (BMUs) get larger and therefore heavier, the ability to control them perfectly is becoming ever more vital. Linking the installation to a Building Management System (BMS) is the answer.

For installations that require more accurate control and diagnostic possibilities, XSPlatforms uses HMI-PLC technology to link the building maintenance system to the building management system. An example is Dubai's Jewel Tower, for which XSPlatforms built the largest building maintenance unit in the United Arab Emirates. This telescopic installation can be extended by 33 meters horizontally and 4.3 meters vertically. Combined with a telescopic gondola, this makes it possible to reach every single corner, including receding facades.

All this makes the installation more flexible, but it also makes controlling the BMU extra challenging. Through the PLC technology, however, the building management system can continually track the installation's exact position, as well as the speed and direction of movement of both gondola and roof car. In addition, the PLC has diagnostic function and can check systems for faults. Another useful option is the possibility to inspect and service the installation with the help of XSPlatforms' headquarters in the Netherlands, over an Internet connection.

“A product is not **QUALITY because it is hard to make and costs a lot of money... Customers pay only for what is **OF USE** to them and gives them value.”**

PETER DRUCKER

WRITER AND MANAGEMENT CONSULTANT



XSPatforms

XTH-System

EASY IS SAFE?

Designing safe equipment is not easy, but equipment that is easy to use can significantly increase safety, as demonstrated by the XTH-System range of modular suspended platforms systems.

While these systems fully comply with safety standards like EN 1808, assembling them is so easy that there is no need for special tools. A complete, 12-meter suspended platform consists of only 13 parts, most of which can simply be clicked into place. The foldable modules integrate floor and side board in one component. 1- or 2-meter long modules can be attached using the Twist&Lock guardrail post, with which locking the system is literally a matter of a single flick of the wrist.

Modules can be easily connected to form standard configurations of up to sixteen meters, carrying a maximum payload of 1200 kilograms. The system's clever design not only speeds up assembly times, it also reduces the risk of mistakes during assembly to an absolute minimum. The system's safety is further enhanced by the fact that modules are made of single aluminum extrusions, without welds in critical places, and the use of high-quality, durable aluminum. In more than one way, XTH-System sets a new standard in safety.

Hoist units

HOISTS FOR ALL



To access facades using suspended platforms, users need reliable hoists. XSPlatforms offers a range of solutions for every possible situation, from high-end hoists which require minimal maintenance to hoists specially designed for the rental market.

The starting point for each hoist in the XSPlatforms catalogue is proven, rock-solid hoist technology, which has demonstrated its reliability over decades. This technology was once used only in self-hoisting gondolas, but is now also available as a separate hoist that is compatible with all makes of suspended platforms. The XSPlatforms hoist technology has earned a solid reputation for its quiet operation, durability, flat design, low maintenance costs and relatively low weight.

XSPlatforms has a range of hoists for every situation, including high-end solutions for minimal maintenance and maximum user-friendliness. The technology on which the hoists are based has demonstrated its reliability for decades. The hoists are compact, robust and require little maintenance. They consist of relatively few components, so

when periodic maintenance is needed, dismantling and reassembling the hoist takes a minimal amount of time.

The **hoist suspension** unit combines hoist and fall protection in a lockable box. This protects the electrical components against bad weather, thus ensuring a longer life and less maintenance. Its flat design and silent motor emphasize its high-end credentials. The hoist unit serves as a suspension frame that can be used both as end-stirrup and as walk-through stirrup. Mounting the unit is easy, reducing the risk of errors to an absolute minimum.

The **rental hoist** is easy to transport. It can be lifted or driven around by simply placing a scaffolding pole through the frame. Storage is also efficient: the rental hoist is stackable, with a frame size of 40 cm x 40 cm (15.75" x 15.75"). The suspension beam of the hoist unit is adjustable for different heights, which saves storage space and offers maximum working space in use. The unit is fitted with large wheels and a handle for easy moving in the warehouse and on-site.



CREATING SPACE

WITH THE XTH-SYSTEM SUSPENDED PLATFORM SYSTEMS, XSPLATFORMS HAS MANAGED TO CREATE A SOLUTION THAT GIVES USERS MUCH MORE WORKING SPACE, WHILE AT THE SAME TIME SIGNIFICANTLY REDUCING THE SPACE NEEDED TO STORE THE EQUIPMENT. THE MODULES HAVE AN INSIDE WIDTH OF 70 CM, 20% MORE THAN USUAL IN SUSPENDED PLATFORMS. WHEN FOLDED, HOWEVER, THE MODULES ARE REMARKABLY COMPACT. FOUR FOLDED MODULES FORM A STACK OF LESS THAN 50 CENTIMETERS.

CASE

250 SHELL GAS STATIONS, THE

HEIGHT: 4-5 meters
GROSS FLOOR AREA: approximately 225,000 square meters
COMMISSIONED BY: Shell Netherlands and Johnson Controls
PROJECT DESCRIPTION: installing fall protection equipment
PROJECT COST: approximately € 1,350,000
PROJECT DURATION: 2004-2008

Especially at relatively modest working height of 4 to 7 meters, reliable fall protection equipment is crucial. Most accidents occur when workers are lulled into a false sense of security: thinking the risks are minimal when they are not. That is why there are more accidents involving people falling from a height of 3 to 5 meters than from a height of 20 to 50 meters. This knowledge moved British/Dutch oil multinational Shell to commission fall protection for just over 250 gas stations throughout the Netherlands. An extra challenge was the lightweight, fragile nature of the roof structures. XSPlatforms used its XTS-Impact solution to install anchorage points directly on top of the roof covering. This method ensures the roof structure is not damaged and remains fully watertight. During installation, but also in case of a fall, because the anchorage points feature an integrated shock absorber which minimizes the fall's impact.



NETHERLANDS





Green building gathers pace

From an office tower doubling up as a solar power plant to 'vertical cities' incorporating parks and even farms — the future belongs to the green skyscraper. All over the world, architects and developers are exploring various ways of reducing the carbon footprint and increasing the sustainability of high-rise buildings.

Green building is not synonymous with small-scale building. On the contrary. Because they enable more intensive use of urban space, skyscrapers can play an important role in reducing urban sprawl and the environmental pressures associated with it. And skyscrapers offer architects plenty of scope to develop innovative, genuinely sustainable concepts, as illustrated by the latest generation of green skyscrapers.

Energy-efficiency

The built environment is responsible for around 40% of the world's energy consumption. Cutting back on the energy needed for heating, air conditioning and lighting is one of the most effective ways of reducing the world's carbon footprint. That calls for buildings that makes the most of natural light, heat and cooling mechanisms, as well as being water-efficient.

A prime example is New York City's Hearst Tower, the first office building in New York to be granted a Gold LEED certification. It makes the most of natural light by using Low-E coated glass for its facade, allowing natural light to enter the building without adding to the inside temperature. The building is also extremely water-efficient, through a combination of rainwater harvesting and a 14,000 gallon water reclamation tank.



Green building starts with the very first stages of the design process. The shape and orientation of the Sino-Italian Ecological and Energy-Efficient Building at Beijing's Tsinghua University, for example, were based on an extensive analysis of the site's location and the specific climatic conditions of Beijing. Computer simulations and tests helped to define the optimal shape, orientation and building envelope, which formed the starting point for architect Mario Cucinella's stunning design.

Water efficiency is also a key element of Las Vegas' Palazzo resort, which thanks to its LEED certification can lay claim to being the world's largest green building. Through a combination of innovative technologies, the Palazzo conserves enough water to provide each Nevada citizen with 266 eight-ounce glasses of water for a year, and saves enough energy to power a 100 watt power bulb for 12,100 years.

Renewable energy

The sheer size and surface area of skyscraper facades offers great opportunities to harness the potential of renewable energy sources. In 2008, Bahrain's World Trade Center became the first building in the world to integrate wind turbines into its design, producing roughly 15 per cent of the building's energy consumption. Barely two years on, a skyscraper is being constructed in Guangzhou, China, which is expected to be fully self-sufficient. Like the Bahrain WTC, the Pearl River Tower has a facade designed to make the most of the prevailing winds in the region. These are funneled through two main slots in the building, increasing the wind's speed by 2.5 times and generating up to 15 times more energy.

However, incorporating renewable energy production is not restricted to new buildings. England's largest solar power project is Manchester's Cooperative Insurance Tower, an office building dating back to 1962. As part of an extensive renovation project, its facade was covered with over 7,000 photovoltaic panels, producing on average 181,000 kWh of electricity a year.

Building automation

A crucial step in conserving energy is sophisticated monitoring systems, which use a wide range of sensors to determine whether rooms are being used, and which can adjust artificial light, air conditioning and heating accordingly. These systems also take weather conditions into account. For example, the Hearst Tower's building management system uses internal light sensors to determine the amount of natural light entering work spaces, reducing the required artificial light level to the bare minimum.

In Switzerland, this principle is taken a step further. A consortium of research institutes and technology companies are developing a concept in which the building management system uses



GREEN
FACADE
ACCESS

“Aluminum can be recycled virtually indefinitely”

advanced weather forecasts to anticipate cloudy or sunny days and high or low temperatures. Researchers have estimated that this technology could reduce energy consumption by as much as 35 per cent, especially in buildings using concrete core activation to regulate and store heat. The main drawback of such buildings is that they respond relatively slowly to fluctuations in the outside temperature, and often need to resort to supplementary heating. Anticipating weather forecasts may significantly reduce the need to do so.

Green cities

More than fifteen years after the LEED methodology was first proposed, green building is

increasingly becoming the norm throughout the world. Along with the increasing use of innovative but proven technologies, architects and developers are poised to put ideas into practice that only a few years ago would have been branded pure science fiction, and even now may raise a few eyebrows. In Dubai and Moscow, plans have been drawn up for skyscrapers with rotating floors. Using horizontal wind turbines and solar panels, the designers claim the building would generate more electricity than it needs, in effect powering the entire neighborhood.

Meanwhile, in South Korea, feasibility studies are underway for the Gwanggyong Power Centre, designed by the internationally renowned Dutch architects MVRDV. This project could house around 77,000 residents in a high-density development surrounded by parks and lakes. The design consists of a series of overgrown hill-shaped buildings which are a natural extension of the surrounding landscape. The roofs of these hills and the terraces are planted with box hedges, creating a ‘vertical park’ designed to improve the climate and ventilation, and to reduce energy and water usage. In fact, the Gwanggyong project aims for an entirely self-sufficient town, demonstrating that green building is already reaching out for the next stage: from green buildings, it is time to move on to green cities.



Compared with the energy savings achieved by the latest generation of green buildings, the potential for reducing a building’s environmental impact through more efficient facade access may seem small. Yet, the most successful green buildings are those that combine a large variety of measures, encompassing the whole structure. Including provisions for working at height.

For XSPlatforms, green facade access starts with designing reliable, durable installations

that can be manufactured in a sustainable way. Reducing the amount of natural resources needed not only benefits the environment, it also makes production more cost-efficient.

The choice of materials is another major consideration. As well as using aluminum wherever possible (see page 7 for the green credentials of this material), all installations are treated with Ecotech® coatings. These coatings are safe to use, are produced in an environmentally responsible way and last longer.

Another innovation is the use of fiber-reinforced polymers (FRP) for building maintenance units. Having considered this idea years ago, production and pricing have only just allowed XSPlatforms to put the innovation into practice. The use of FRPs means a considerable reduction in the weight of a BMU. This not only means less weight in transportation, it also allows architects to design lighter roofs and use fewer raw materials, since the roof no longer has to support the enormous weight of a traditional BMU.

THE BEST OF BOTH WORLDS

NEW GENERATION OF SCAFFOLDING SYSTEMS OFFERS UNPRECEDENTED FLEXIBILITY AND SAFETY



Scaffolding is one of the most widespread and traditional ways of providing facade access. But that does not mean there is no scope for innovation. XSPlatforms' new scaffolding system is packed with new features that make this tried and tested technology safer and more flexible than ever before.

Over the decades, much has been done to improve the safety of people working on scaffolds. Yet erecting scaffolding remained a hazardous job. In traditional scaffolding, the first part of a new level to be put into place is the floor. To install guardrails, scaffolders have to climb onto this floor, which means that for a few dangerous moments, they find themselves unprotected, even at heights of 20 to 30 meters.

Not acceptable

"Somehow, this risk has always been viewed as acceptable", says Dick Buitendijk of XSPlatforms. "But why should it be? I do not see why dangerous situations should be accepted as normal simply because we are used to them." XSPlatforms, in close cooperation with users, developed a simple, but effective solution. "The key is simply to change the order in which the various elements of a scaffolding system are put into place."

Simple yet revolutionary

As a result, XTR-Scaffolding is the first scaffolding solution in the world which enables users to install the guardrails of the next level, before assembling the floor panel and standing on it. It is a very simple idea, but one that has revolutionized the safety of aluminum scaffolding. "Especially since we did not stop there", says Buitendijk "Once we started looking for unnecessary risks in traditional scaffolding, we saw even more room for improvement."

Non-removable components

A point in case is the practice of 'temporarily' removing parts of a scaffolding installation for convenience's sake. "Having worked on scaffolds myself, I know that sometimes the scaffolding gets in the way, and then it is tempting to just remove parts. However, I also know it creates dangerous situations. Especially since nine out of ten times, people forget to undo the changes they have made. So we designed a system which 'clicks' into place, after which it is not even possible to remove a component unless you dismantle the whole installation."

More flexibility

While safety is paramount, XSPlatforms also examined ways of designing a more flexible solution. "Traditionally, aluminum scaffolding comes in two varieties. You either have a walk-through system, in which it is easy to move from one section to the next. Or you use a scaffold tower, which gives you the opportunity to adjust the working heights of platforms to your exact need. We asked ourselves if it would be possible to combine these two advantages in one system."

Hybrid scaffolding

Again, the solution was deceptively simple. By designing scaffolding frames in which the part closest to the facade offers a flexible scaffold height, while the 'outer' part has a standard scaffold height of two meters, XSPlatforms created a system that combines the best of two worlds. "You could call it 'hybrid scaffolding'", says Buitendijk. "And it typifies our approach to innovation: you start to think from the perspective of the person using a system. What does he want? And can we deliver it?"

AND THERE IS MORE...

In addition to the safe assembly method and the combination of advantages of both walk-through scaffolding and scaffold towers, XTR-Scaffolding has several extra innovative features:

- made-to-measure transparent window panels, which simply click into place and create fully-enclosed working spaces, sheltering workers from the elements while admitting more light into the work area
- an integrated side board in the guardrail frames, which speeds up assembly times and ensures that side boards can never be 'forgotten'
- ergonomically designed profiles and accessories, which make it easy to grab hold of the components
- a provision for integrated screening (mesh) in the guardrail frames. This allows the mesh to be installed beforehand instead of afterwards.
- smart, integrated anti-climbing fences to prevent unauthorized access, with lockable gates
- user-friendly and safe access through easy-to-install ladders between scaffolding levels.

CASE

CENTRAL PARK, DUBAI

The Central Park Office Tower will be a key landmark in Dubai's International Financial Centre district. Arabtec, with around 42,500 employees the largest contractor in the Middle East, commissioned XSPlatforms' Dubai branch to design and build twelve facade maintenance systems.

The facade maintenance systems for the Central Park project weigh approximately 30 tons and are equipped with the latest technology, including radio control and a Building Management System connection. Six of these systems can be extended vertically (15 meters) and horizontally (28 meters), to a maximum installed height of 240 meters.

HEIGHT: 294 meters

FLOORS (ABOVE GROUND): 49

COST: US\$ 400 million

COMMISSIONED BY: Dubai Properties,
United Arab Emirates

ARCHITECTS: Hopkins Architects, London

CONTRACTOR: Arabtec, United Arab Emirates



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