SafeSmart Access

Reaching new heights

Hinkley Point C

Best Practice Examples

Introduction

Hinkley Point C is one of the most complex and challenging construction projects in Europe. The sheer scale of the project, with over 8000 workers on site, coupled with tight deadlines and extreme weather conditions mean that safety, speed and efficiency are paramount.

The project has unique risks and challenges; for example, the coastal location means high wind speeds are normal, exacerbated by the height of the structures being built. Likewise, the size of the project means that a single delay could have an exponential negative impact; in turn, this increases safety risks, as time pressures are exceptional, making it more tempting to cut corners on safety. There are also risks of communication challenges and failures in processes, due to the wide-ranging variety of work, the large number of complex logistics and shipments, and the volume and diversity of the workforce. Hinkley Point C has unique requirements in every respect; as a result, BYLOR have embraced innovation and new ways of working.

One of these innovations is working with SafeSmart Access, a UK manufacturer of scaffolding, edge protection and non-powered aluminium access equipment. Joining forces at the start of the project, both parties have built best practices together as the project has developed, as new regulations have appeared, experience has shown what works and what didn't, and as requirements have changed. This collaborative working relationship has led to a detailed understanding of the project needs, allowing the solution to be tailored exactly to meet HPC's requirements.

What made SafeSmart Access a good fit for BYLOR and HPC?

- *Product Design*
- *Safety*
- *Efficiency*
- *Support*

Product Design

All SafeSmart Access products are designed for durability and value for money. This covers both the quality of materials, with marine-grade aluminium, through to the product specification, where the focus is on longevity and practicality rather than cutting production costs. This means that products last significantly longer on site than typical steel alternatives, decreasing overall project costs.

Using aluminium rather than steel as the main material gives significant benefits to BYLOR and HPC:

- **Lighter than steel:** Aluminium is around 1/3 of the weight of steel, with products 40% lighter than steel alternatives; this means less manual handling during install, and a reduced risk of manual handling injuries.
- **Stronger than steel;** the reduced material weight allows for larger and thicker aluminium section sizes of components compared to typical steel alternatives.
- **More durable:** aluminium dents less easily than steel, prolonging the product lifespan, and reducing longer term costs.

This means that the **overall product quality and durability is increased**, with the added benefit that aluminium is easier to recycle than steel at end-of-life, reducing environmental impact.

Wherever possible, product failures are 'designed out' at initial development stages, increasing the quality. Almost all products are designed as a single piece, meaning **there are no loose parts** that could get lost. For example, the Super Maintenance Platforms are uniquely designed as a single piece, rather than a folding platform like many in the market; this means the overall strength of the product is increased, making it more heavy duty, while the lightweight aluminium construction ensures that the **lifting of the product remains manageable** for users. This attention to detail in design means that BYLOR operatives have confidence in the products, viewing them as a high-quality and trusted brand, increasing the take-up and usage on site.

Safety

This high-quality design and construction of SafeSmart Access products reduces the risk of product failure, critical for access products which are often used at height in a high-risk environment. For example, marine-grade aluminium is resistant to salt water corrosion; due to Hinkley Point's coastal location with high winds, products made from steel and other alternative materials quickly corrode and present a hazard to users.

Safety is embedded into the products' design and recommended usage, with real-life scenarios considered at every stage to make them as user-friendly – and as likely to be used - as possible.
For example, the product weight is **40% lighter than steel** alternatives, meaning each item can be easily moved by one or two operatives without the need for lifting machinery; this **reduces manual handling risks**, decreasing accidents, and encourages usage of the product as it's **easy and fast to manoeuvre** into place.

The systems offered are modular, meaning they **can be quickly customised** to each environment and application, with no specific skills required; for example, the top step of the AdjustaStair can be unbolted and switched out to incorporate a scaffold hook design, making the product more suitable for use within the many scaffold structures without requiring welding or remaking the product, and without compromising the safety of the design. This means there is **no risk of unsafe securing methods** being used, or of the products moving unexpectedly during use, as they have been designed exactly for the purpose.

It also means that it's easier for users to adjust the product to the safest configuration for their application, increasing the chances of staying safe, as **modifying the modules for each system is simple and fast**. This product provides a complementary access system to scaffolding, enhancing rather than reducing the safety of the existing scaffolding.

STAIR SOLUTION	SAFESMART ADJUSTASTAIRS	RANGER STAIR	VERTEMAX STAIR	TAMMET STAIR
Material	Marine-Grade T6 Aluminium	Aluminium	Galvanised Steel	Galvanised Steel
No. of Steps	6	6	6	6
Weight	38kg	44.22kg	74kg	72kg
Safe Working Load	500kg / 2.5kPa	150kg/1.5kPa	150kg / 1kPA	150kg
Handrails remain attached when folded	✓	✗	✗	✗
Coloured handrails for visibility	✓	✗	✗	✗

The support from SafeSmart Access covers every phase and area of operations at Hinkley Point, not just construction. For example, Safety teams quickly identified logistics as an area of risk, with up to 750 deliveries across the site every single day and tight time pressures to unload. Falls from truck beds when unloading presented a key hazard; according to HSE, over two-thirds of all major work at height injuries are caused by low falls of two metres or less. Although operatives were using steel platforms for edge protection, it became clear that as they were not easy-to-use, the process was being bypassed, safety was compromised, and risks were taken when unloading trucks. As a result, a safer edge protection system was needed.

SafeSmart Access's SafeLoader product provided the perfect match. An "all-round" system fully enclosed with handrails, this long wheeled platform covers the complete rear of a truck, with safe steps up and down and a wide working space. Light and easy to use, this platform boasts a safe working load of 1000kg, meaning **multiple operatives can work off it at once**. It's easily deployable due to its light weight and wheeled design, meaning operatives can simply **roll it into place without the need for lifting equipment**. The castors then lock safely, providing effective and safe edge protection that is easy to use so users are happy to adopt.

This product also increases efficiency; the ability for a single operative to quickly deploy the system **speeds up loading and unloading procedures**, as does the fact of working from one long platform compared to constantly climbing up and down from the truckbed.

Efficiency

The high quality standards of SafeSmart Access's ranges mean excellent durability. This means less maintenance is required, meaning less downtime, lower costs, and higher productivity. It also means lower capital expenses, as fewer products are required overall.

Likewise, the product designs mean the whole range is **easy and fast to move around**, as it's made of lightweight marine-grade aluminium that can be moved by hand. This means **no expensive transport or lifting gear** is required; it also means the products can be deployed much faster, as any operative can safely start work, reducing any lost time waiting for transport.

The products are designed to provide an **intrinsically safer solution** than other options available on the market. This leads to **fewer accidents** with more time working, increasing productivity and decreasing risks of legal fees or compensation from incidents on site.

SafeSmart Access's products are a proprietary system that doesn't require scaffolders or other qualifications to set up or use. This also increases efficiency, as most people on site can use them safely and set them up safely, without the need for extra costs or skills. This also makes it more likely that the products will be used as intended.

SafeSmart Access's products are also designed for efficiency. Wherever possible, **the products are multi-use**, meaning not just one operative at a time can use it; they're also designed to be effective at many project phases and applications, meaning the **same product can be reused for many uses** again and again. The designs are based on real-life situations and experience on the ground; testament to this is the universal support from operatives on site, who like using the products as they feel safer and can get their jobs done faster.

Safeloader and TruckSafe podium utilised together for fast and efficient access and protection surrounding the truck bed

"SafeSmart has brought to this project the latest innovation in regard to work at height solutions, which currently is our highest risk on this site."

James Thieme – Lead H&S Advisor – EDF Energy

Support

As part of the working relationship, SafeSmart Access and BYLOR carry out regular joint product familiarisation training on site. This gives Safety teams confidence that everyone on site has the knowledge to use the products safely and effectively and provides a record of this to prove compliance.

This practical training to end users has a hands-on approach, rather than just being a classroom "tick box" exercise, meaning teams actually using the products have a good understanding of what they need to do as part of their work.

Training typically covers:

- Product inspection
- Product maintenance
- Safe usage

Every attendee receives a training certificate, raising awareness with site teams, and SafeSmart Access maintain a record of attendance; this helps **reduce the risk of litigation** for BYLOR in the event of an incident, as well as making a real difference to keeping teams safe, as it can be quickly checked whether or not an operative has received the training.

BYLOR benefit from SafeSmart Access's consultative approach. Senior safety consultants from SafeSmart Access attend on site at least every fortnight, looking at specific applications to make recommendations, giving BYLOR a holistic approach to access equipment. With a wide product range including scaffolding, SafeSmart Access are not limited to fabricated access or to a single range, giving BYLOR the assurance they are receiving **the best and safest solution available for the application**, rather than simply trying to increase sales on a limited product range which might not be the best option. For example, at a recent 'working at height' forum, an alternative product on the market was struck off by the Safety teams, whereas SafeSmart Access's broad range of solutions meant that a safe option for the application could be guaranteed.

BYLOR also benefit from **maintenance support**. On a project of this scale with this volume of users, some level of damages is inevitable; when this does occur, SafeSmart Access provide spare parts for all products, due to in-house manufacturing and due to the modular system design, preserving product lifespan. Both parties worked together to set up a marquee on site where repairs can be done, with BYLOR receiving training to carry out repairs themselves; this **reduced costs**, as existing resources could be leveraged to maintain the products, and **reduced inefficiencies** as it meant there were no delays waiting for goods to return and no time out of action. On-site repairs also helped to **reduce carbon** emissions associated with transporting goods offsite for repair.

Relationship of collaboration and innovation

BYLOR and SafeSmart Access began working together in January 2017, as construction of the Hinkley Point C project started. The duration and depth of this relationship has led to significant experience and specialist knowledge, being built up, including jointly developed products, meaning SafeSmart Access's product and service offering is now exactly tailored to support major projects in the nuclear sector, with a trialled and tested methodology.

Underpinned by regular open communication and shared goals, this relationship has been strengthened by SafeSmart Access's existing relationships with the various companies in the joint venture, giving a detailed understanding of the project needs from multiple perspectives.

This also means BYLOR are **kept in tune with changes and needs in the market** and the specific project, as there are many points of regular communication and feedback, including outside the official channels. As a result, SafeSmart Access keep BYLOR aware of new requirements, ideas, and best practices, providing a central communication point where both sides can share knowledge to **improve performance and reduce costs**.

Product versatility - AdjustaStairs

In the initial stages of the Hinkley Point Project, EDF Energy set out their aims for 'Zero Harm'. This meant that a new standard of safety was expected. As part of this, unsafe methods of working were quickly banned by Safety teams, including the use of inadequate ladders. Instead, temporary access stairs were specified.

Enter the AdjustaStairs. HSE-compliant and made from high grade aluminium, and installed and secured in a matter of minutes, this product is quickly ready for stable and reliable use. Collapsible handrails make **it easy and quick to remove the stairs and redeploy elsewhere**, usually by only two people. These stairs can be pitched at any **variety of angles,** whilst still providing a flat surface to stand on, thanks to the self-levelling treads, while the various product widths and accessories available mean there is an option suitable for every application.

BYLOR site operatives quickly highlighted the **ease of set up**, with the built-in locking tab meaning that the stair treads can be adjusted very quickly by moving the handrails. Also, the handrails folding into the product was very popular, as it meant the product was **easier to transport around site** as a whole item and **the handrails didn't go missing around site**, meaning the stairs always stay compliant.

They also valued the design of the handrails, outside the footprint of the stairs; this means there's **always unobstructed access with no trip hazards**, unlike other options on the market. Likewise, they valued the **high safe working load** of 500kg, almost quadruple other options on the market; this **safely allows a constant flow of traffic on** the stairs, avoiding any delays in busy areas of the site.

Initially, the SafeSmart AdjustaStairs were used at enabling works stage, alongside other brands of stairs. However, as the project progressed, it became apparent that the **longevity was vastly superior** to market alternatives, lasting over four times as long and yet matching similar pricing. It also became evident that the product versatility offered **excellent value for money**, as the stairs could be redeployed for other uses at each project phase:

- Enabling and excavation – stairs used for safe access down embankments and into excavations
- Concrete formwork – stairs used to provide access between concrete decks
- Scaffolding - As the structure height increases, stairs used for access onto scaffold, or to replace entire scaffold structures for access means

BYLOR particularly valued the adaptability of the AdjustaStairs, supported by the innovations team at SafeSmart Access. For example, feedback from end users at BYLOR suggested that there was an opportunity to speed up the installation of the stairs on scaffolding. As a result, SafeSmart Access and BYLOR worked together to develop a top-step scaffold attachment, meaning the top step can be quickly mounted and fixed onto scaffold structures, increasing productivity and further enhancing the safety of end users. This collaboration and customisation is provided to HPC contractors as standard.

Benefits of a comprehensive product range from one source

Building on the popularity of the AdjustaStairs at Hinkley Point, BYLOR also benefited from the SafeSmart Access's comprehensive product range. As standard, these stairs come at 600mm wide, suitable for a single operative, and designed for spaces where only single file access is needed, such as multiple stairs up a scaffold structure.

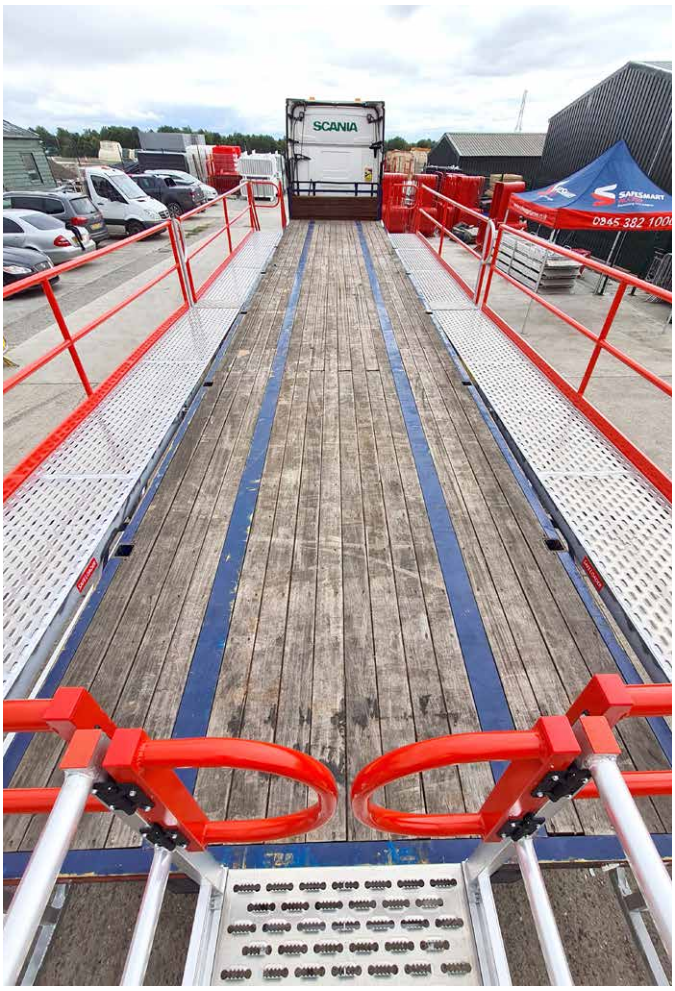
As a result, SafeSmart Access developed a double-width AdjustaStair, at 1200mm wide compared to the market standard of 1000mm wide for double stairs; this offered extra flexibility with product applications, and ensured that operatives had space to carry tools.

This meant that BYLOR could remain with the same partner, **reducing maintenance costs** as the spare parts were interchangeable with the single-width stairs, and avoiding any need for additional training. It also **increased safety, as operatives were already familiar** with the single-width option, reducing the chances of the product being used incorrectly. This wide product range means that BYLOR can cover every access need without the need for multiple suppliers and multiple different systems with different failure points.

Providing a complete solution

Whatever the access, SafeSmart look at the application and the bespoke needs, offering a complete range designed for every situation on site. The modular system design means all pieces work with each other, coupled with a consultative approach; this means the support provided to BYLOR is not about individual products but about providing a complete solution to match the exact need.

For example, many situations on site need larger scale access solutions, such as access between formwork decks, or unsupported access across large excavations. The solution is the AdaptaSpan; safely providing an unsupported bridging span up to 21m, this solution works perfectly with all other SafeSmart Access products, and is compatible with a tower crane attachment. This wide range means that **HPC and BYLOR are not restricted to a single solution or product which may not exactly meet their needs**, but are guaranteed the best solution to the challenge in hand.



Case study
Overcoming challenges due to coastal location

Hinkley Point C is located only metres from the sea. Winds are high, the salt level in the air is constant, and adverse weather is commonplace.

This means that slip hazards due to mud are constantly a risk, while product failure due to corrosion is significantly faster than normal. This meant that any steel-based products quickly became hazardous for users.

Podiums were required on site to provide a safe working platform during civil engineering work. Initially, BYLOR used a commonly sold steel platform with a five-bar tread plate. This product had no holes for drainage, meaning that within days the grip surface became clogged with mud, slippery and dangerous. Product failures were also high due to the exposed and challenging weather conditions. BYLOR turned to SafeSmart Access for advice.

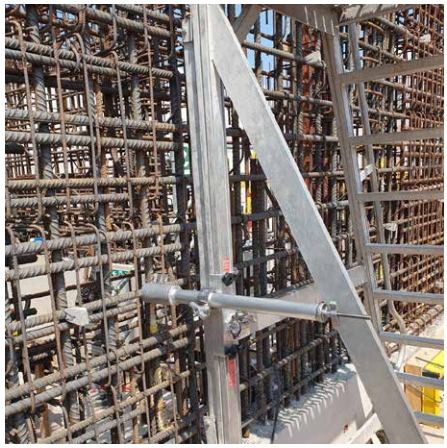
SafeSmart Access consultants visited the location and recommended the Super Maintenance Platform. Made from durable marine-grade aluminium, **corrosion risks were greatly reduced**; with a **perforated platform**, water could quickly drain through, **avoiding slip hazards**, while the swaged tread plate meant that **grip was maintained even in greasy conditions**.

The platform was also significantly larger than the previous option, making it **more stable in high winds**; it also **increased efficiency**, as it meant multiple operatives could work from the same platform at the same time.

The design of this product was also **inherently safer** than the alternative. With the wheels disengaging when the podium is in the resting position, it is fully stable with 4 rubber feet on the ground when in use. This means it **can't be moved by mistake**, as there are no moving parts in contact with the floor, and no risk of the castors not being locked.

As a result, there is no process needed for users to make the product safe before use, as it is instantly usable when not being moved; this also increased the safety of operatives.

Bespoke product adaptations and modifications



BYLOR are faced with many unique challenges on site. This means they need a partner who can proactively find and develop solutions, including modifying existing options to suit new purposes. This includes project-specific innovations.

BYLOR were using the Super Maintenance Platform in many areas of the site, with positive feedback. However, operatives were working between tight areas for access in stock yards, where goods were stacked closely with little space to access them. BYLOR reached out to SafeSmart Access; how could they keep operatives safe at height when space was restricted?

SafeSmart Access explained that they could take existing effective products and modify them for new purposes. Working with their in-house design, technical, engineering and manufacturing teams, SafeSmart Access sent BYLOR Safety teams drawings showing a narrow platform, adapted from 800mm wide to 600mm wide for their approval. Once approved by BYLOR, the SafeSmart Access consultants then took a demonstration model of a sample modified narrow platform to site to gain feedback from operatives actually 'on the coal face'. Receiving a positive response from end users and technical teams, they then launched the compliance checks, and once the product had been checked for regulatory compliance and approved it was launched on site. This **innovative approach and in-house expertise** mean that every access need is covered, even if the need has never occurred before.

More recently BYLOR had a challenge when working on the higher areas of the nuclear islands. Due to the height of the structures, wind speed levels are higher, and weather conditions are harsher, putting operatives at risk, particularly where typical access equipment could blow over or blow off the structures, presenting a major hazard to operatives using the product and to operatives below on the ground. This was particularly the case where the edge protection was below the working height of the operatives, meaning Safety teams had to find an effective way to reduce any risk of toppling. Hinkley Point C has significantly more reinforcement than in any average project, meaning this was not a one-off risk but a fundamental part of the project build.

To combat this, initially BYLOR used a makeshift scaffold tie which was not certified, was time-consuming to install and required scaffolders to install and sign-off frequently. This resulted in a slow process increasing downtime on site, and providing a solution that was far from ideal. It was clear the industry needed a unique and improved solution.

Project Directors and key personnel from BYLOR worked together with SafeSmart Access teams to design a custom solution. This took the form of a clamp that attached podiums securely to formwork, and the process included creating multiple designs and prototypes for review before the design was confirmed by feedback from site teams, and their feedback incorporated into the final design.
The solution was then fully tested by a third party in line with BYLOR working practices and European standards. As a result, the solution is being rolled out and operatives will be kept much safer; it will also **increase the speed of the project delivery**, enabling work to continue when conditions would have previously meant that operatives would have needed to down tools.

Joint process development

BYLOR also benefit from shared experience to develop processes, including project-specific innovations. For example, SafeSmart Access consultants worked closely with Safety teams to develop a bespoke process around checking and inspecting access assets to maximise safety.

Every access podium must be checked by the user before use, to ensure any defects and damages are reported and replaced, keeping staff safe and prolonging product lifespan. However, Hinkley Point C has so many operatives with so many frequent personnel changes, and so many assets to inspect, that this was very challenging to implement, with Safety teams struggling to control and maintain records.

SafeSmart Access and the Safety teams jointly developed a system to manage this. Each operative was given practical familiarisation training on a real product on site showing them how to safely inspect it, and what to look out for. They were then issued a card with an 8-point checklist of what to check; this was their personal card. Each podium now has a slot for this card at the entry point.

When operatives use the podium, they complete the check and slot their card into the slot while the podium is in use.

This provides instant visual evidence of checks completed when the products are in use, as well as providing a constant reminder and habit for operatives to check the condition before ascending.

This proved to be a much more effective way to monitor podium conditions and reduce risks. It also led to better safety, due to better operative engagement, and reduced costs as any damages are quickly noticed and reported.

Collaboration to increase efficiency

BYLOR faced a specific challenge when operatives were carrying out steel fixing. Due to the nature of the project, operatives needed access to a large variation in height, and were working up at height from formwork. MEWPs were being used, but these required specific training and licences, limiting the number of teams who could carry out the work and slowing down productivity.

SafeSmart Access reviewed the application and suggested using the EasyRaise platform. A height adjustable solution that is still non-powered, this product offers **flexibility in terms of height**, with a top that cantilevers forward as the height increases, allowing operatives to reach over protruding obstacles easily without overreaching. **Weighted for safety**, the base of the platform contains steel weights, meaning the risk of toppling is reduced.

As the product is non-powered, **it doesn't need specific licences**, making it more likely to be used by more operatives, increasing safety and productivity. It also **increased efficiency**, as there were no delays due to charging any equipment, no operating costs, and multiple tasks could be completed with just one piece of equipment.

Removal of risks on site

PLEASE SCAN ME
ZERO HARM WEEK

There is an industry-wide problem on sites with access over pipework and concrete lines. Typically, these are built from wood, and are slippery, easy to break, rot and degrade quickly and can't be reused.

On Hinkley Point C, these provided an even greater risk due to the sheer scale of the project, meaning many wooden stepovers were in use across the site. They also provided a distraction to the workforce as they were built on-site by operatives, reducing overall productivity. These items were quickly condemned by BYLOR's Safety teams.

"I'm pleased to share my experience with Safesmart as an approved provider of non-scaffolding access equipment on Hinkley Point C construction site. Their unwavering commitment to safety and efficiency has greatly enhanced our operations. With their advanced access solutions, we've been able to ensure strict compliance with the site working at height standards, mitigating potential risks. BYLOR's dedication to innovation and their exceptional customer support, both on and off site make them invaluable members of the HPC Way Community of best practice for working at height, regularly engaging in the forum to provided both expertise and innovative solutions to the challenges we face around working at height on site."

Alexander Kirk BEng (Hons) -
NNB Scaffold Technical Lead / Working at Height Lead Construction Delivery Group, Hinkley Point C Nuclear New Build, EDF Energy

Instead, BYLOR worked with SafeSmart Access to trial the modular stepover. An aluminium "up and over" platform, BYLOR could choose the stair or ladder one side, the length of the platform, and the stair the other side, meaning the units could be configured for every application. This meant **options were very flexible** when working with variations in height and offered BYLOR the standard benefits from SafeSmart Access as all the other units in the range, including anti-slip platforms as standard. These stepovers can be lifted into place, meaning **installation is very fast** and has no need for specialist teams. It is then instantly ready to use, increasing efficiency. As part of this review process, SafeSmart Access consultants went to site and provided **free-of-charge demonstrations** to end users; the units are now widely used across the site, reducing the risk of injury.

Increasing safety standards with NNB

As the principal contractor, NNB are committed to increasing safety standards. They rely on the solutions and expertise of the supply chain to help them drive awareness, promoting suppliers who offer full involvement, joint collaboration and innovation.

An example of this was the 2022 Zero Harm Week. Suppliers and their technical support teams were invited to site to showcase their latest innovations to end users, raising awareness and gathering feedback and ideas. SafeSmart Access have been participating in these events, bringing new products and ideas, since the project launched. Their **consultative approach** means that they offer more than safe access; they **raise awareness**, provide training, bring equipment for free trials, and help **ensure that operatives keep safety at front of mind**. A key benefit of these events is the feedback from end users. Due to SafeSmart Access's innovative processes, these suggestions are quickly developed and implemented into new products, ensuring the solutions remain the best and most efficient option at the time regardless of new changes and developments on site.

"SafeSmart have brought to this project the latest innovation in regards to work at height solutions, which currently is our highest risk here on this site."

James Theime - NNB Lead H&S Advisor

"SafeSmart AdjustaStairs are very convenient, very light to use, very durable and we use these right across the site, so SafeSmart all the way!"

Lance Johnson – NI1 Construction Scaffold Manager - BYLOR

Case study
Modular Stepover solutions are for access improvements

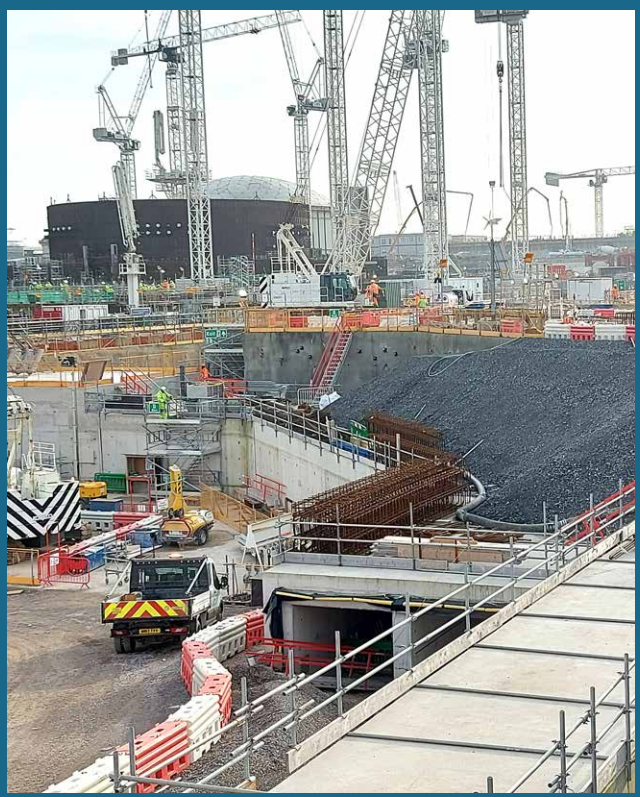
"We had a problem here at Hinkley Point C with access over pipework and concrete lines. Wooden steps were being put in place which are not in the BYLOR procedures and condemned by the safety team.

I contacted Tristan Ellis from SafeSmart for some advice and he suggested the use of their modular stepovers. Tristan came to site and did a display on all SafeSmart Access Systems.

The modular stepovers are now in use throughout the site and have made an enormous improvement in safety standards.

Tristan has a very professional and positive attitude towards any access queries that we have on site. He is willing to help and suggest improvements whenever I contact him. He is also willing to carry out training on any repair issues for stairs and safeloaders."

John Daly
Scaffolding Construction Manager
BYLOR



SafeSmart Access

Reaching new heights

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PROSCAF