



# **SMARTSTAIRS** & MODULAR BRIDGE SYSTEMS



**UNITED KINGDOM**

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EDITION 3

## AN INTRODUCTION TO SMARTSTAIRS & SMARTBRIDGE

Introducing the SmartStairs and SmartBridge: a flat-packed steel modular stair and bridge system. This robust and sturdy temporary access system is designed and fabricated to meet relevant UK standards, as set out in BS 12811-1.

The system features the following characteristics:

- **Flat-packed Design:** Comprising several components that bolt together to form a complete stair/bridge module, this design allows for easy replacement of parts.
- **Robust Finish:** Available with either a painted or galvanised finish.
- **Unique Sliding Pin Connection:** A simple sliding bolt system with an ergonomic handle enables easy connection of modules.
- **Safety Mesh Encapsulation:** All stair and bridge modules are encased with 25 x 25mm square mesh for added safety on-site.
- **Removable Exit Panels:** Stair modules include removable exit panels on the left and right sides, with optional end frame exit points available.
- **Certified Crane Lifting Points:** Each module is equipped with certified crane lifting points.
- **Internal Rated Harness Points:** The steel members of the SmartStairs modules are rated for use as harness attachment points.



## WHY CHOOSE SMARTSTAIRS?

### SUMMARY OF BENEFITS

SmartStairs offer a complete solution to the current problems of accessing basement excavations. The stairs can be transported as prefabricated modules or assembled as required by the project design.

The use of SmartStairs provides a fast, easy and safe way for emergency services personnel to access a station box in an emergency situation. The stairs can be quickly deployed and provide a sturdy platform for personnel and stretchers.

For safe and easy access into vertical shafts, such as ventilation shafts, SmartStairs can be used to create a temporary access solution while work is underway.

### THE TOP BENEFITS



#### ROBUST

Heavy-duty steel construction.



#### STRETCHER ACCESS

Suitable for Stretcher Access as set out in AS 1576.



#### PROVEN

Tried and tested solution highly regarded by industry experts.



#### FULLY ENCAPSULATED

25mm x 25mm mesh encapsulation on all modules.



#### COMPLIANT

Complies to AS 1657: 2018 and has a safe working load (SWL) of 2.5kPa.



#### CRANE-LIFTABLE

Certified crane lifting points on all modules.



#### FREESTANDING DESIGN OPTION

Up to 18m - no lateral ties.



#### MODULAR FLAT PACK DESIGN

For ease of transport and storage of modules.



#### MULTIPLE APPLICATIONS

Below and above ground requirements.

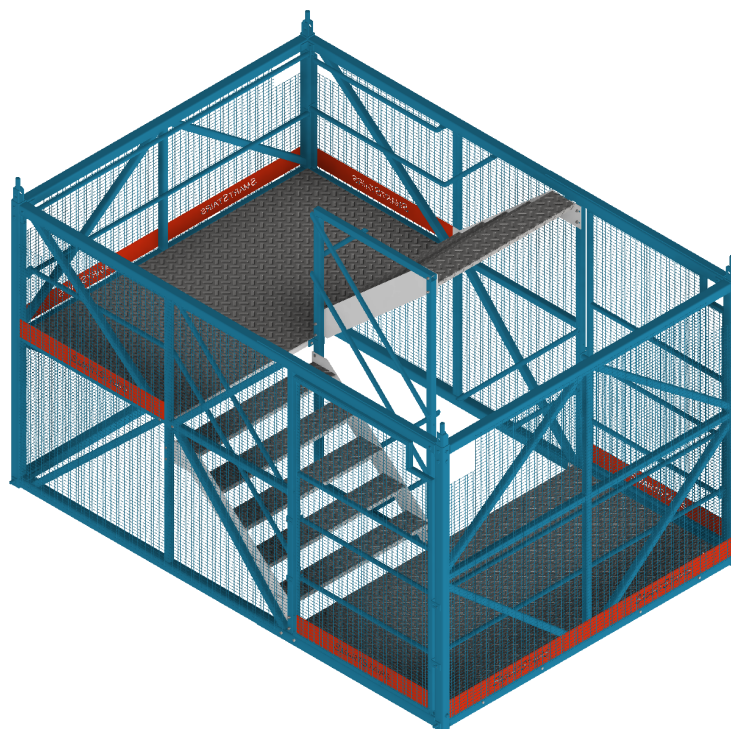


#### PROPRIETARY SYSTEM

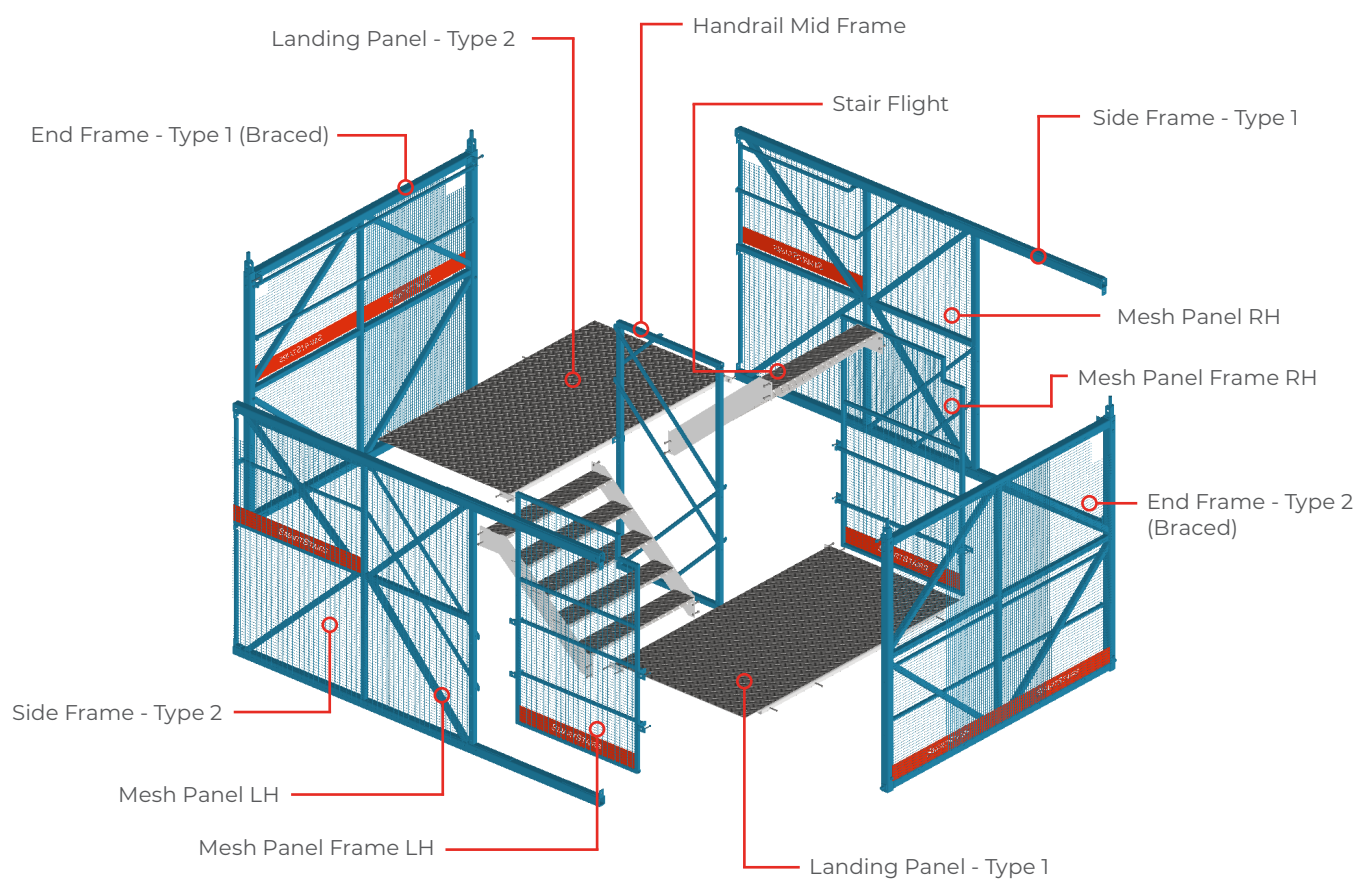
Designed by SafeSmart's in-house engineering team.



## ASSEMBLED SMARTSTAIRS 2.3mH STRETCHER STAIR MODULE



### 2.3mH SMARTSTAIRS COMPONENT BREAKDOWN





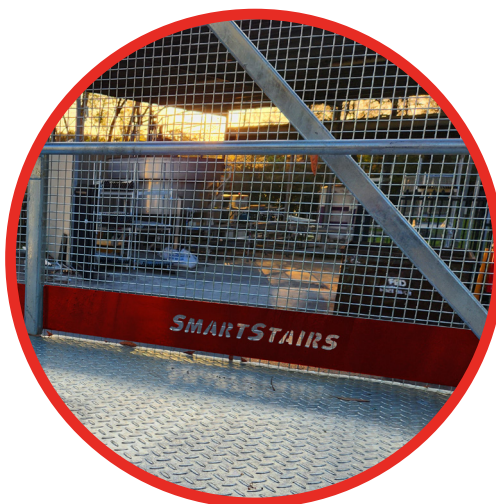
**Sliding Pin Connection**



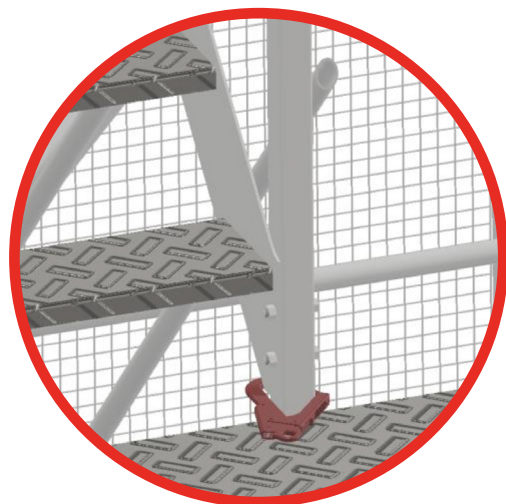
**25mm x 25mm Mesh Encapsulation**



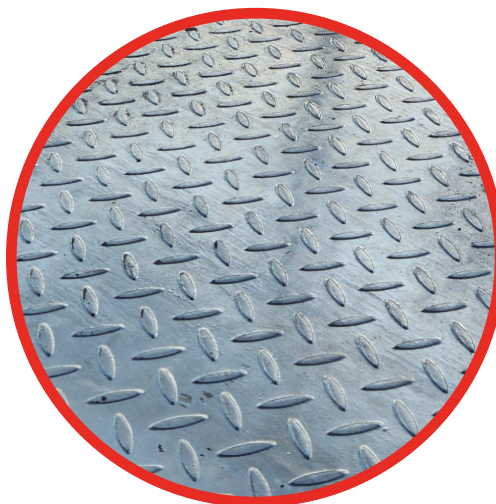
**Certified Crane Lifting Points**



**Integral Toeboards**



**Rated Harness Point**



**Anti-Slip Checker Plate Flooring**



# SMARTSTAIRS

## 2.3mH STRETCHER STAIR MODULE FREESTANDING SERIES\*

Code	Description
221007	Steel Stretcher Stair Module - 2.3mH x 2.86mW x 4.0mL*

\*The 2.3mH Module works with the SmartBridge system (see page 84)

**2.5kPa**  
WLL

Complies with  
**BS 12811-1**

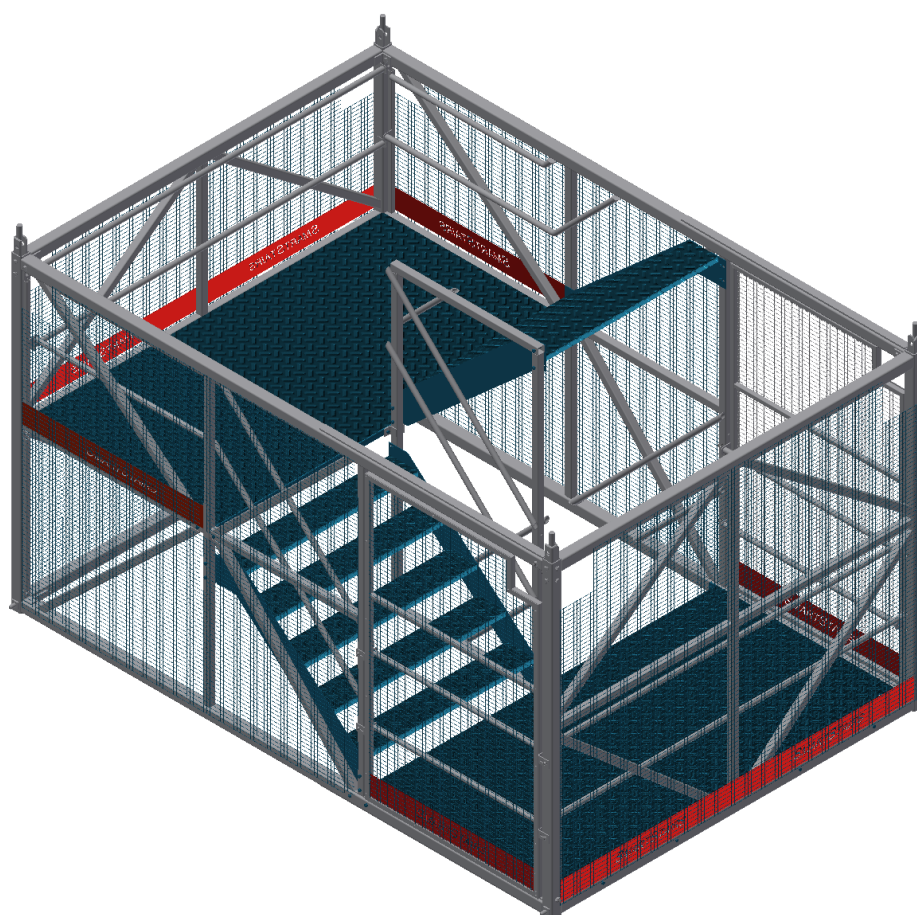
**Hire option**  
available upon  
request

DIMENSION	MEASUREMENT
Height (H)	2300mm
Length (L)	4030mm
Width (W)	2770mm
Stair Angle (SA)	45°
Stair Width (W)	1220mm
Exit Width (EW)	1340mm

### SOLUTIONS:

In some cases the 2.3mH vertical module is suitable for excavation sequences below ground and slab RLs above ground.

- Freestanding Stairs.
- Hanging Stairs.
- Jump form stairs.



3.0mH  
Also Available  
Upon Request



# SMARTSTAIRS

## 2.3mH CONSTRUCTION STAIR MODULE

Code	Description
221005	Steel Construction Stair Module - 2.3mH x 1.57mW x 2.8mL

**2.5kPa**  
WLL

Complies with  
**BS 12811-1**

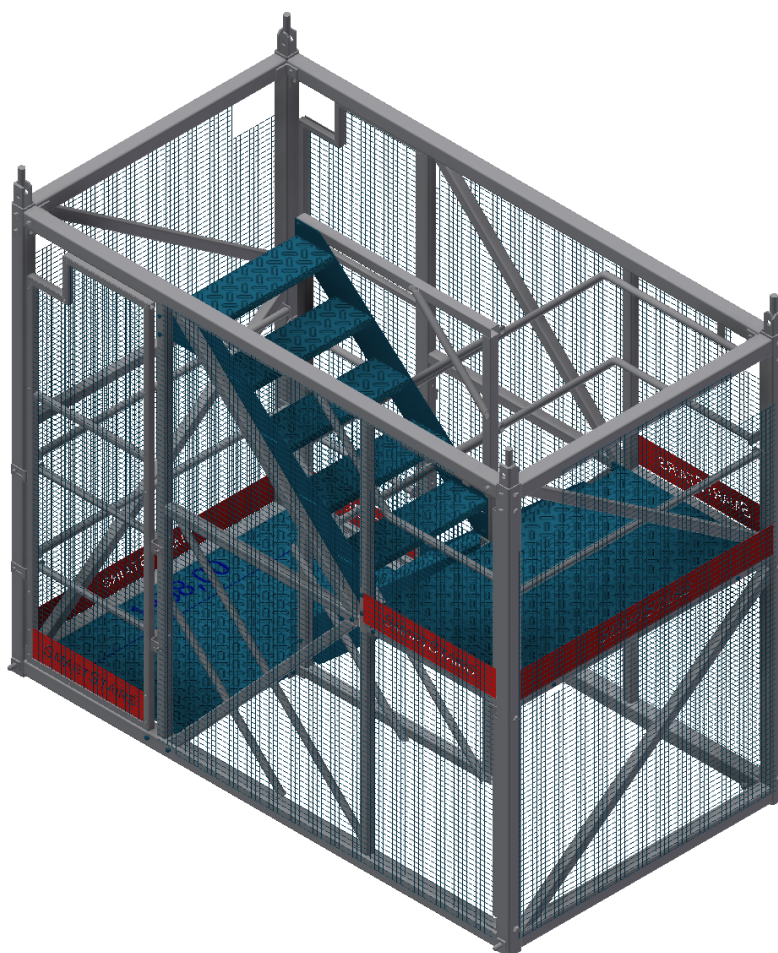
**Hire option**  
available upon  
request

DIMENSION	MEASUREMENT
Height (H)	2300mm
Length (L)	2830mm
Width (W)	1570mm
Stair Angle (SA)	45°
Stair Width (W)	620mm
Exit Width (EW)	740mm

### SOLUTIONS:

In some cases the 2.3mH vertical module is suitable for excavation sequences below ground and slab RLs above ground.

- Freestanding Stairs.
- Hanging Stairs.
- Basement Access.
- Jump form stairs.





# SMARTSTAIRS

## 2.3mH SAFERISE LADDER MODULE

Code	Description
221063	Steel Ladder Module - 2.3mH x 0.9mW x 1.82mL

**2.5kPa**  
WLL

Complies with  
**BS 12811-1**

**Hire option**  
available upon  
request

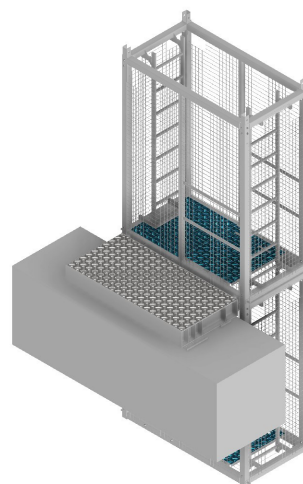
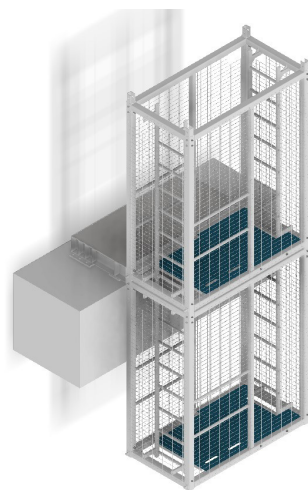
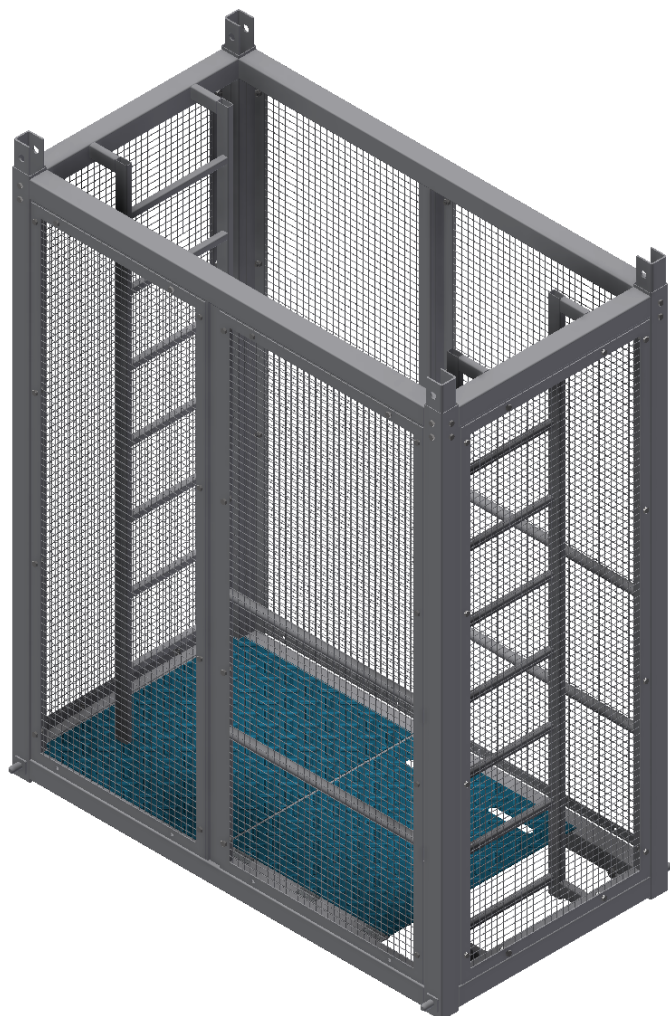
DIMENSION	MEASUREMENT
Height (H)	2300mm
Length (L)	1820mm
Width (W)	900mm
Stair Width (W)	660mm
Exit Width (EW)	1900mm

### SOLUTIONS:

In some cases the 2.3mH vertical module is suitable for excavation sequences below ground and slab RLs above ground.

- Freestanding Stairs.
- Hanging Stairs.
- Basement Access.
- Jump form stairs.

### APPLICATIONS:

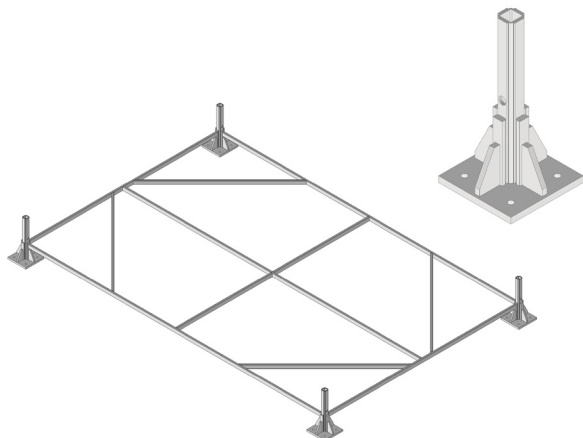




## ADD-ONS & ACCESSORIES

### Assembly Base Frame/Base Plate with Stem

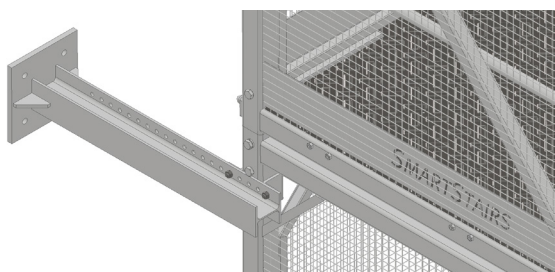
- Assembly 'jig' Frame that enables SmartStairs to be assembled on-site or in SafeSmart's yard.
- The engineered Base Stem allows SmartStairs to be anchored to a suitable foundation for freestanding / vertical stairs.



CODE	DESCRIPTION
221022	Assembly Frame to suit 3.0mH x 2.86mW x 4.25mL Steel Stretcher Stair Module
221037	Assembly Frame to suit 2.3mH x 2.86mW x 4.0mL Steel Stretcher Stair Module
221038	Assembly Frame to suit 2.3mH x 1.77mW x 3.65mL Steel Construction Stair Module
221023	SmartStairs Reinforced Base Stem with 250 x 250mm Base Plate

### Wall Ties

The Engineered quick release Wall Tie bracket enables SmartStairs to be laterally tied into vertical structures.



CODE	DESCRIPTION
221039	SmartStairs Quick-release wall tie bracket with base plate - 500mm long

### Exit Handrails

Retro-fit punch out handrails designed to eliminate any gaps in the integration of AdjustaStairs and AdaptaSpan.



CODE	DESCRIPTION
210917	SmartStairs Retro-fit Exit Handrails

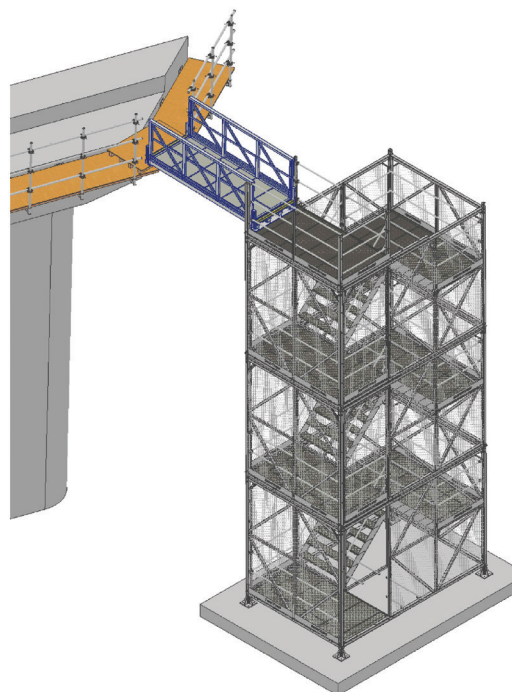


## ADD-ONS & ACCESSORIES

### Top Module Landing and Guardrail Set

Vertical/Above ground access stair, the upper module can be replaced by incorporating a Top Landing and Guardrail Set.

CODE	DESCRIPTION
221006	SmartStairs Top Module Landing and Guardrail Set

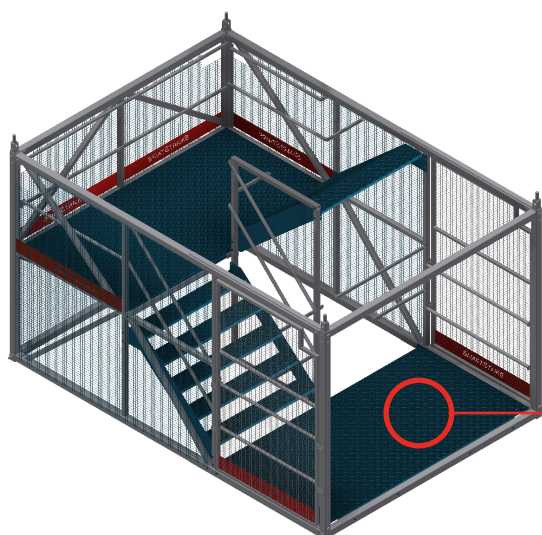


### Type 3 Exit End Frame

In some vertical or hanging stair scenarios, not all exit points can be on the left or right hand side of the stair module. Made-to-order end frames are available upon request.

\*End Exit Frames are required on the top 2.3mH stair module when using SmartBridge.

CODE	DESCRIPTION
221041	Steel Stretcher Stair Module - End Exit Frame to suit 3.0mH x 2.86mW x 4.25mL
221042	Steel Stretcher Stair Module - End Exit Frame to suit 2.3mH x 2.86mW x 4.0mL
221043	Steel Construction Stair Module - End Exit Frame to suit 2.3mH x 1.77mW x 3.65mL



#### DID YOU KNOW?

Option for open end frame available, scan code and submit your request today!





## DELIVERY OPTIONS

### SmartStairs / SmartBridge Delivery Options

Consult with a SafeSmart Technical Representative on your delivery methodology.

#### Flat-Packed Modules:

- Modules will have to be assembled on site
- A maximum of 8 modules can be loaded onto a truck



#### Pre-Assembled Modules\*

SafeSmart can provide a small fee for the Stair Modules to be preassembled prior to delivery. Speaking with a technical consultant today!

*\*A maximum of three or four modules can be loaded onto a single delivery truck at a time.*





## INTEGRATION

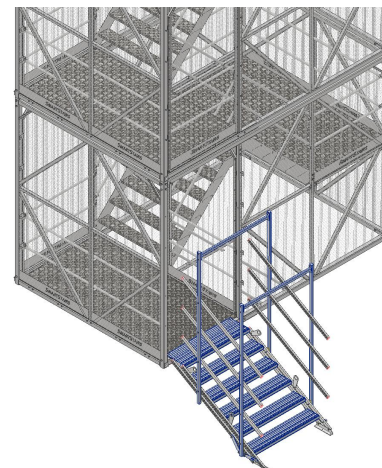
### ADJUSTASTAIRS - 600mmW

**2.5kPa**  
SWL

 Complies with  
AS 1657:2018 &  
AS/NZS 1576:2018

SafeSmart's 600mm-wide AdjustaStairs can be used as exit points from the side and end of the SmartStairs construction stair module.

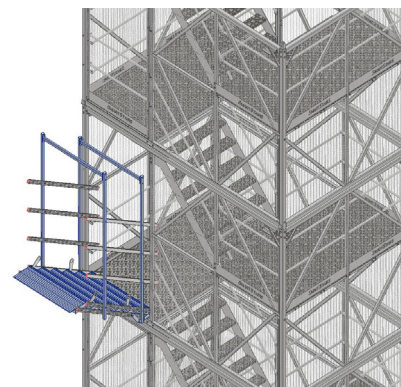
CODE	STEPS	HEIGHT VARIANCE
210818	3	0.49m - 0.67m
210813	6	0.97m - 1.33m
210814	9	1.43m - 2.0m
210815	12	1.91m - 2.67m
210816	15	2.39m - 3.33m
210817	18	2.87m - 4.0m



### ADJUSTASTAIRS - 1200mmW

SafeSmart's 1200mm-wide AdjustaStairs can be used as exit points from the side and end of the SmartStairs construction stair module.

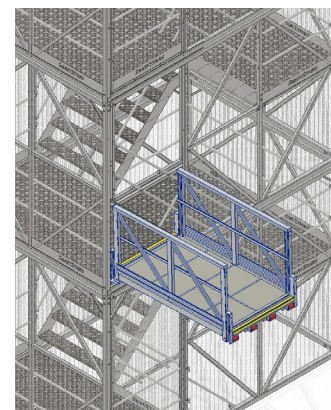
CODE	STEPS	HEIGHT VARIANCE
210821	3	0.49m - 0.67m
210822	6	0.97m - 1.33m
210823	9	1.43m - 2.0m
210824	12	1.91m - 2.67m
210825	15	2.39m - 3.33m
210826	18	2.87m - 4.0m



### ADJUSTASPAN - 1200mmW

SafeSmart's 1200mm-wide AdaptaSpan Modular Walkway can be used as an exit point or ramp from the side and end of the SmartStairs Stretcher stair module. AdaptaSpan can span up to 12 metres from the stair tower or connect to an adjacent stair to create a bridge.

CODE	MEASUREMENT	DESCRIPTION
210136	1mL x 1.2mW	AdaptaSpan Modular Bridge 2.5kPa
210145	2mL x 1.2mW	AdaptaSpan Modular Bridge 2.5kPa
210137	3mL x 1.2mW	AdaptaSpan Modular Bridge 2.5kPa
210129	-	AdaptaSpan Crane Lifting Lug
210358	-	AdaptaSpan Hinging Bracket
210359	-	AdaptaSpan Rolling Bracket





## SMARTBRIDGE

THE STRUCTURAL BRIDGE SYSTEM THAT  
CONNECTS TO **SMARTSTAIRS**

### BRIDGE THE GAP

Pair your SmartBridge system with  
**SmartStairs** see page 6

SmartBridge is designed similarly to the SmartStairs system. It is a steel flat-packed bridge module that can be bolted together to create an assembled covered bridge. SmartBridge can achieve spans of up to 36 metres (subject to wind loading and site conditions).

Consult with a technical consultant today to discuss your requirements.

### Features:

- Internal handrails on both sides of the bridge module.
- 25 x 25mm mesh encapsulation.
- Covered roof for added protection.

Estimated Mass: 1 tonne.

**10kPa**  
RATED ROOF  
DESIGN

## 2.3mH SMARTBRIDGE MODULE

Code	Description
221008	SmartBridge Module - 2.39mH x 2.8mW x 2.77mL

**2.5kPa**  
WLL

Complies with  
**AS 1657:2018 &  
AS/NZS 1576:2019**

**Hire option**  
available upon  
request



Anti-Slip Checker Plate Flooring



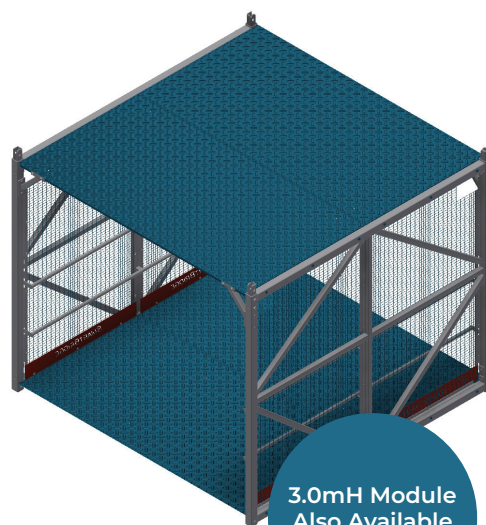
Integral Toeboards



25mm x 25mm Mesh  
Encapsulation

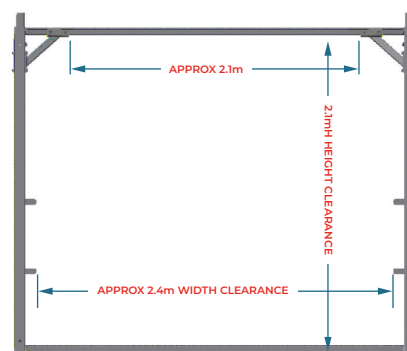


Certified Crane Lifting  
Points



**3.0mH Module**  
Also Available  
Upon Request

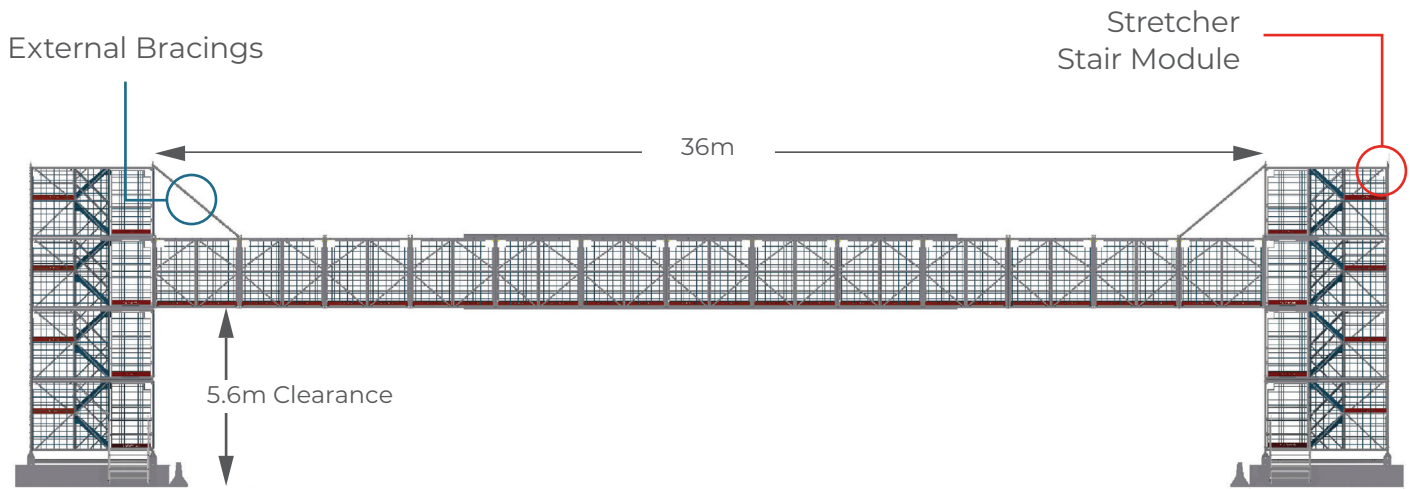
DIMENSION	MEASUREMENT
Height (H)	2400mm
Length (L)	2770mm
Width (W)	2800mm
Internal Width Clearance (IWC)	2470mm
Internal Height Clearance (IHC)	2150mm



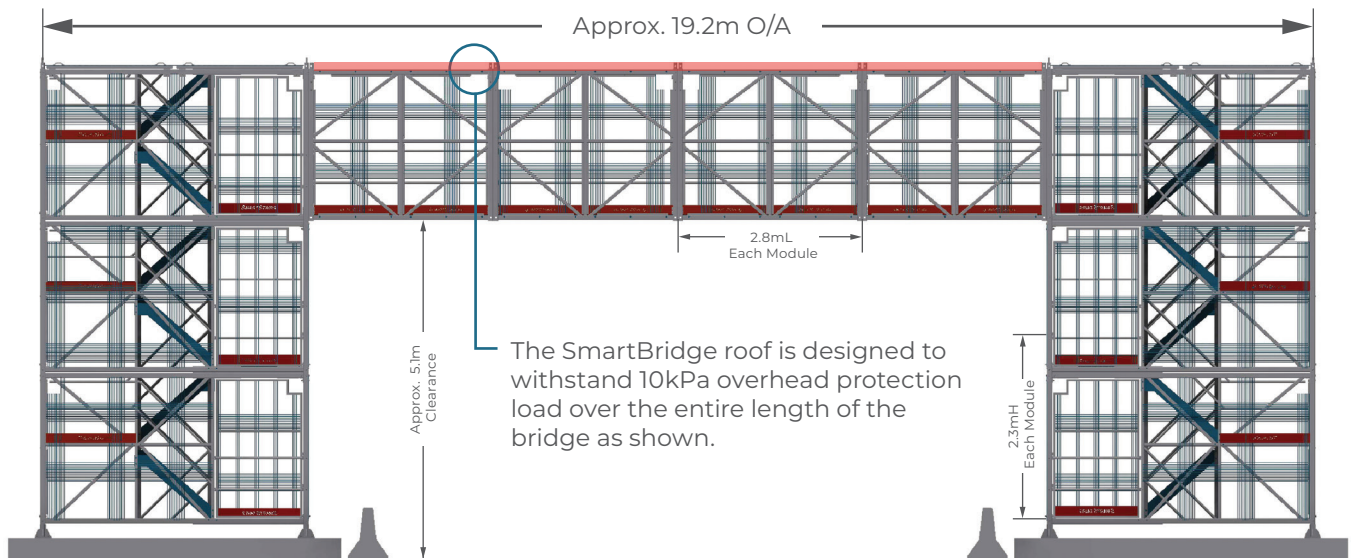


# SMARTBRIDGE

## APPLICATION - LARGE SPANS UP TO 36m!



**DID YOU KNOW THAT SMARTBRIDGE CAN ACHIEVE 10kPa RATINGS FOR OVERHEAD PROTECTION.**



**Speak to a SafeSmart technical consultant about your specific requirement. Custom configurations are available!**

**Note:** SmartBridge is designed and engineered to achieve spans up to 36 metres.

# STAIR MODULES/STRETCHER COMPLIANCE

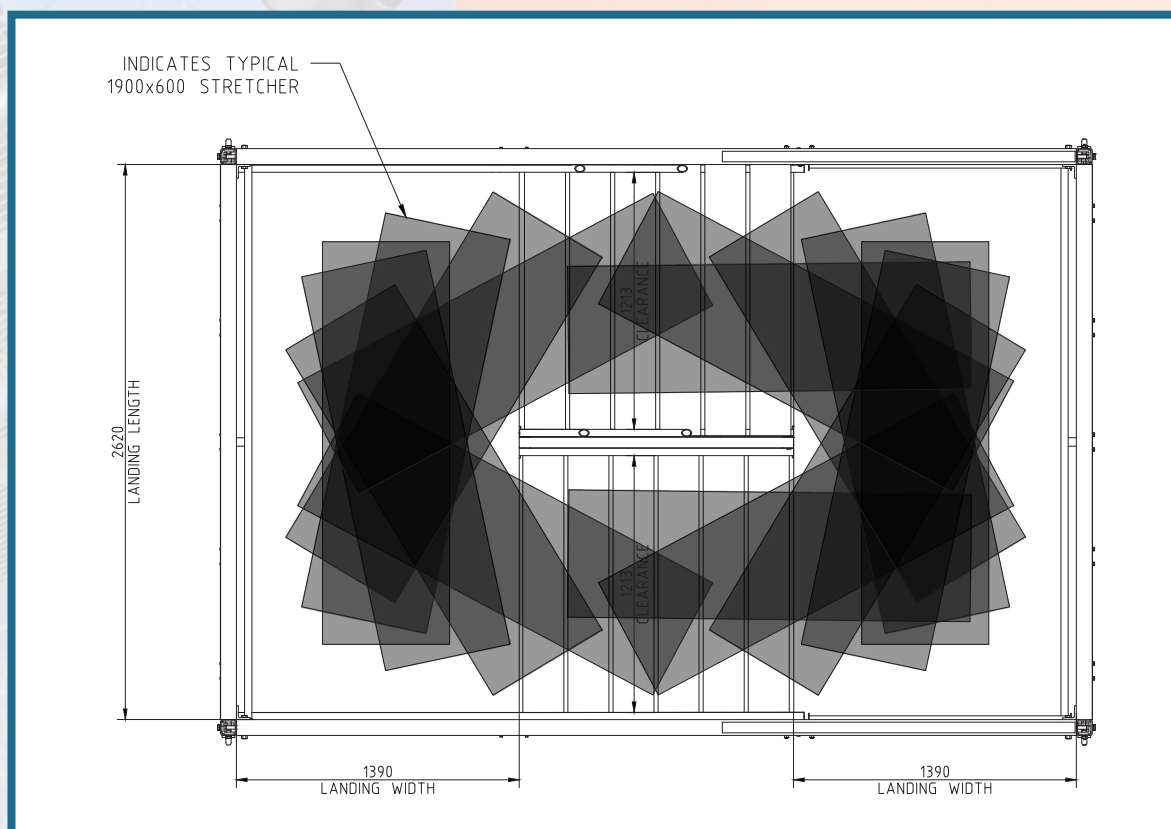
SafeSmart's SmartStairs have been designed to meet the relevant requirements of:

- **AS 1657:2018** (Fixed platforms, walkways, stairways, and ladder – design, construction and installation.
- **AS 4100:2020** (Steel structures)
- **AS/NZS 1554.1:2014** (Structural steel welding)

The following characteristics of the SmartStairs stretcher module comply with the requirements for Temporary Stretcher Stair Access as set out in **AS/NZS 1576**:

**AS/NZS 1576 3.11.3.2 Temporary stairways for stretcher access:** When temporary stairways for stretcher access are constructed from scaffolding equipment, they shall conform to Clause 3.11.3.1 except for the following:

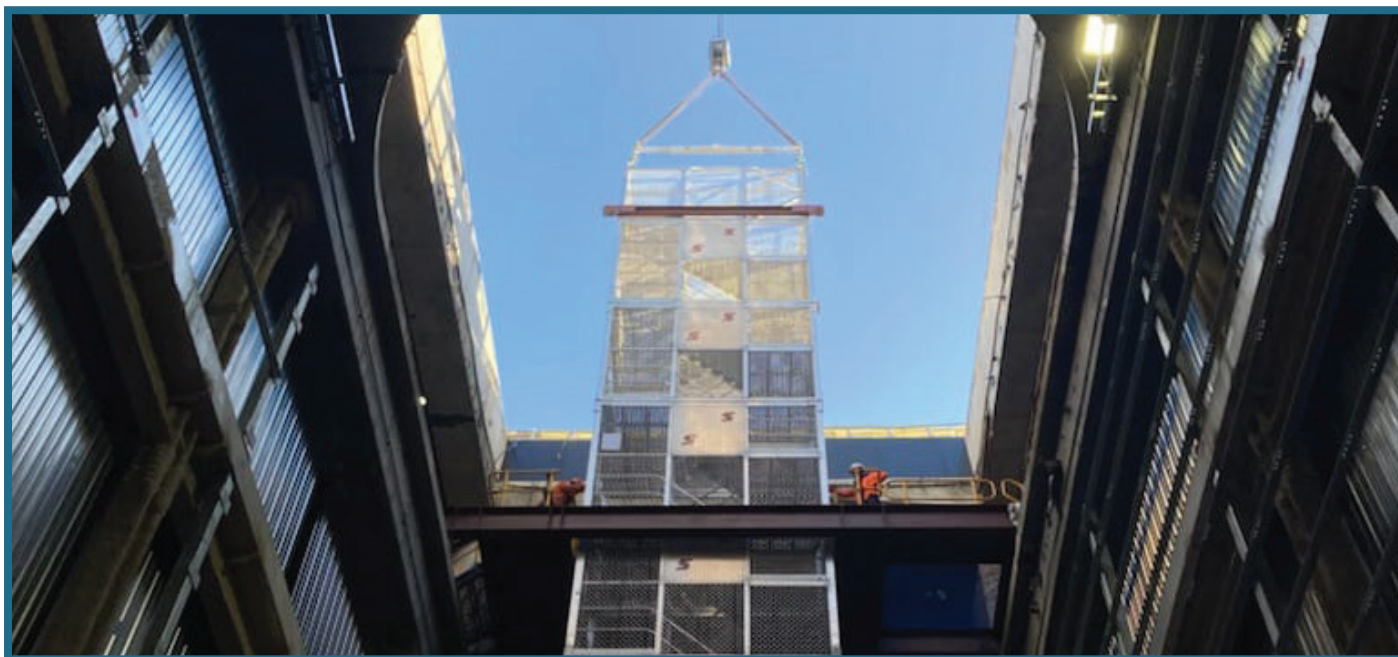
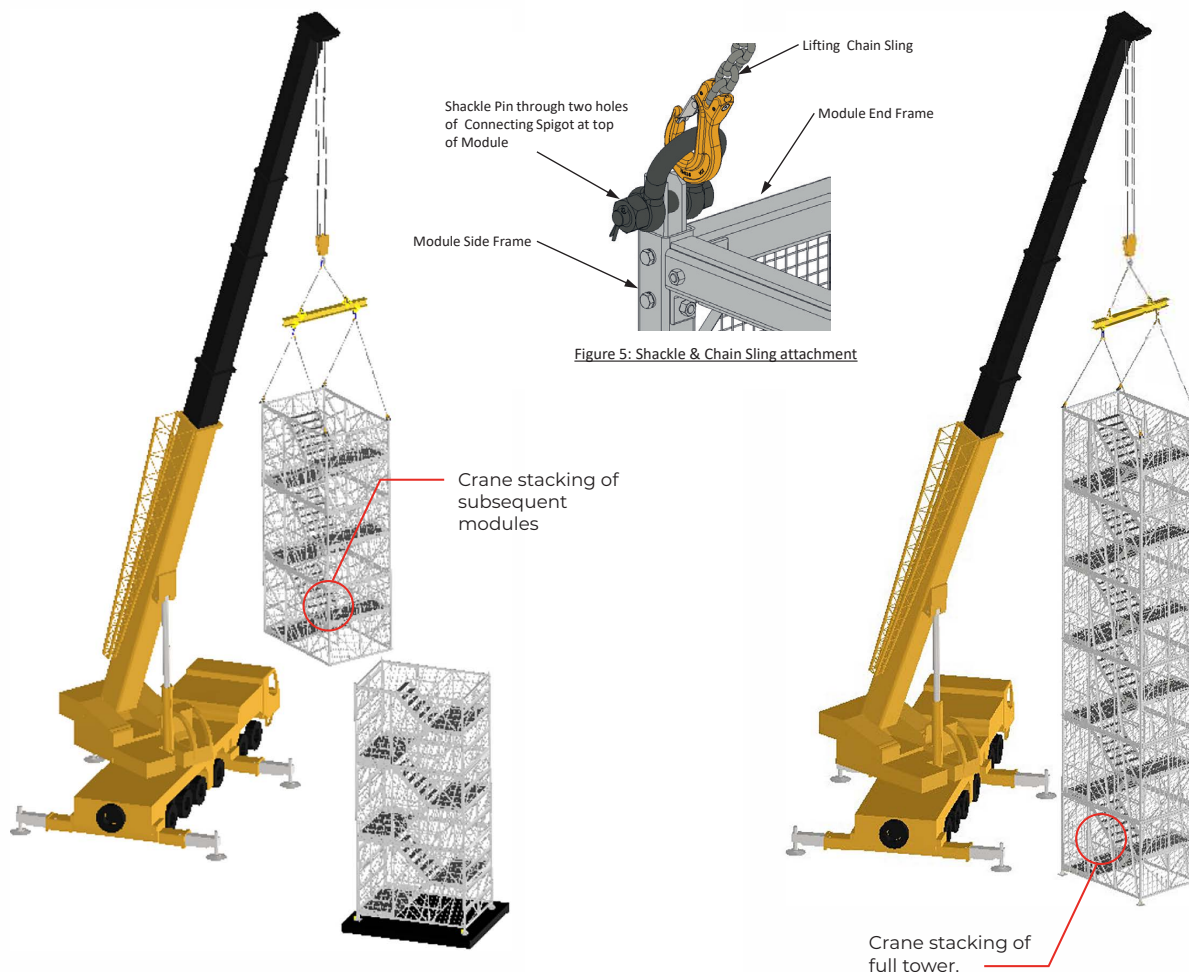
- The stairway slope angle to the horizontal shall not be greater than 45 degrees. The SmartStairs stairway slope is 45 degrees.
- The tread shall have an effective width not less than 1000mm clear of stair stringers projecting into the tread depth. The SmartStairs effective width of stair tread between stringers = 1.28m
- The length of a landing in the direction of travel shall not be less than 1200mm, and the width not less than the width of the stairway. The length of the SmartStairs landing in the direction of travel = 1.39m
- The upper surface of the external handrail or guardrail shall be not less than 1400mm above the landing or top of each stair tread. SafeSmart's SmartStairs modules come encased with 25 x 25mm mesh - the 1.4mH upper handrail is not required.





## CRANE-LIFTING

- Maximum number of Modules crane lifted at any one time: Size 18.0m (subject to wind conditions).
- Weight of six modules: 10.5 tonnes (excluding lifting gear).
- Crane must not disengage until all base plates are securely bolted to a structural H-Frame or anchored to suitable concrete footings.





# SCAFFOLD STAIRS

	SMARTSTAIRS	VS	SCAFFOLD STAIRS
RATINGS	Designed and engineered to support a live load of 2.5 kPa on all stair landings and treads.		Typically designed for heavy, medium, light duty.
MONTHLY INSPECTIONS	Not required, but can be completed by following SafeSmart's checklist if necessary.		Completion is mandatory every 30 days, as it is easy to tamper with.
INSTALLATION	Can be performed by on-site personnel using cranes, with no qualifications required.		Must be completed by a ticketed scaffolder.
ENCAPSULATION	Comes standard with 25 x 25 mm mesh for improved aesthetics of the stair system. Being galvanised, the mesh experiences less rust and requires less frequent replacement over time.		Shade cloth can be applied; however, it is prone to breaking down over time and is subject to higher wind loadings.
EASE OF RELOCATION	Modules are craneable and can be easily split for convenient configuration.		A certified scaffolder is required to perform the relocation. Scaffold structures must be reinspected after being lifted.
CAPITAL INVESTMENT BENEFITS	<ul style="list-style-type: none"><li>• Own a proprietary stair system.</li><li>• SmartStairs simplify inventory management.</li><li>• Reusable for various applications.</li><li>• Eliminate scope gaps by owning a stair system.</li><li>• High resale value.</li><li>• Fully galvanised for longevity.</li></ul>		<ul style="list-style-type: none"><li>• Difficult to manage inventory.</li><li>• Need to account for scaffold labour.</li><li>• Low resale value.</li></ul>
TEMPORARY WORKS DESIGN	<ul style="list-style-type: none"><li>• Proprietary design for easy temporary works.</li><li>• Fully engineered stair system allows third-party engineers to design projects.</li><li>• Easy integration with SafeSmart's AdjustaStairs and ADSP systems.</li><li>• Designed to meet relevant Australian Standards, including AS 1657 and AS/NZS 1576 for stretchers.</li></ul>		<ul style="list-style-type: none"><li>• Must have a good knowledge of scaffold systems.</li><li>• More challenging to design for specific site conditions.</li><li>• Requires a larger footprint for freestanding towers.</li><li>• More anchors, compliance checks, and space needed on-site.</li></ul>

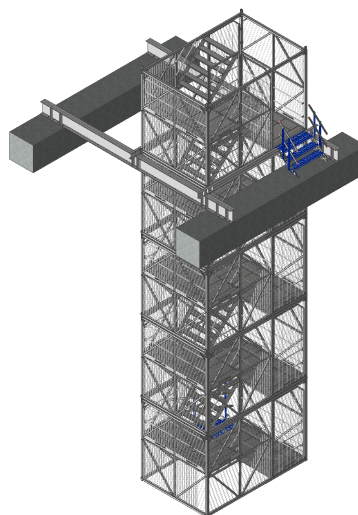
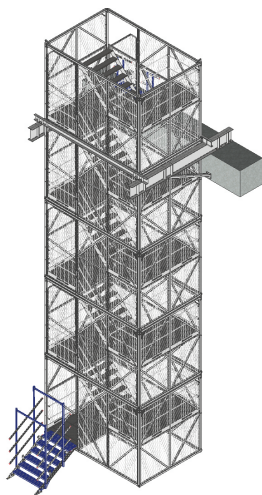


## PROVEN APPLICATIONS

### Below Ground Access

The highly engineered SmartStairs design allows the system to be suspended up to 40 metres, enabling access for the following scenarios:

- Shaft Access
- Excavation Access
- Mole Hole / Void / Penetration Access

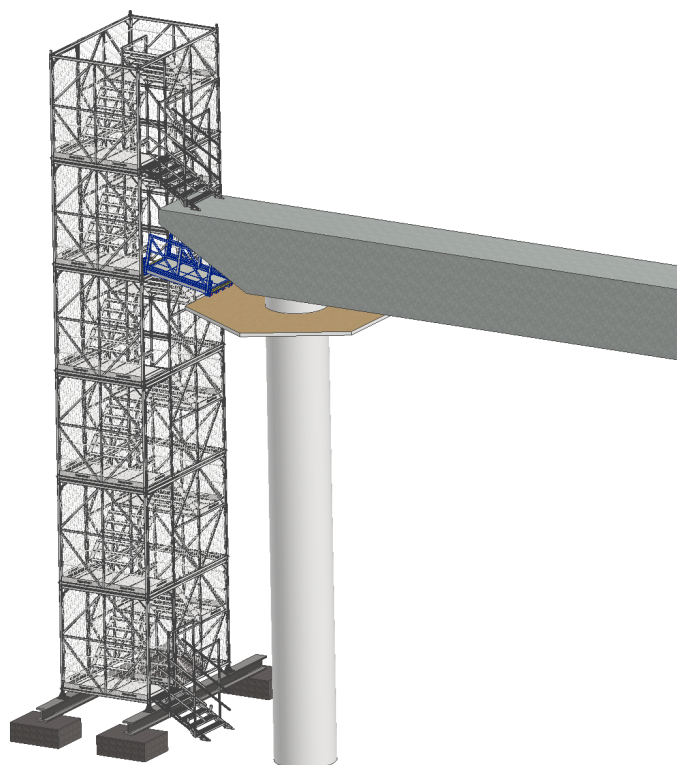


### Above Ground Access

Due to the detailed analysis of the system's bracing structure, the SmartStairs system can be used as a craneable, freestanding stair system (up to 18m vertical height with no ties!)

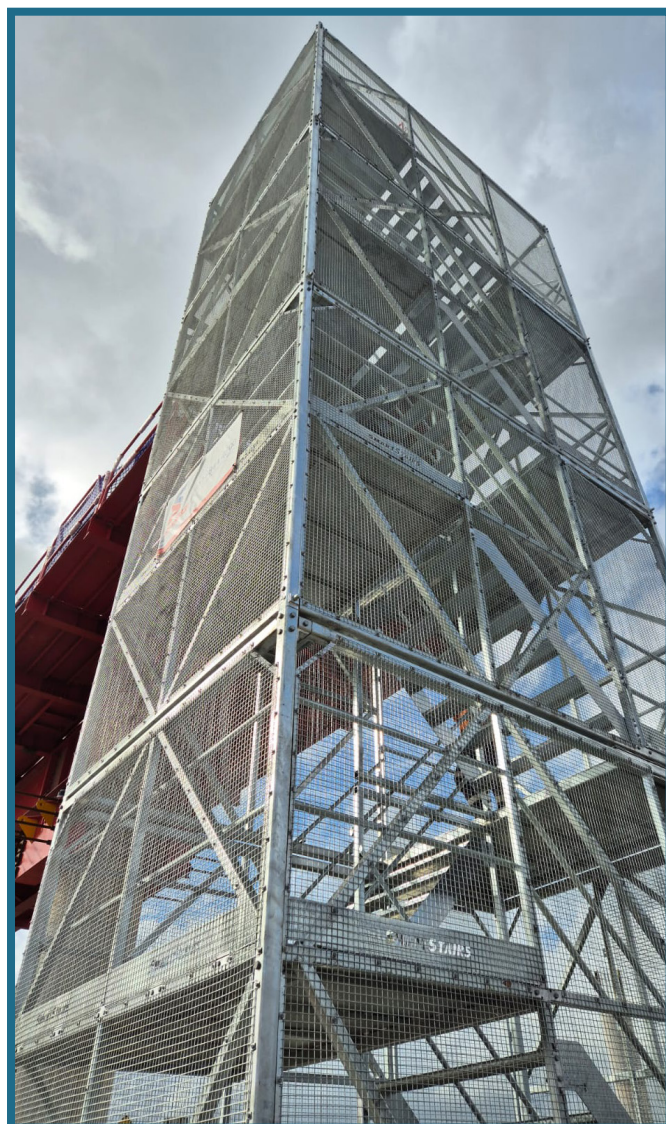
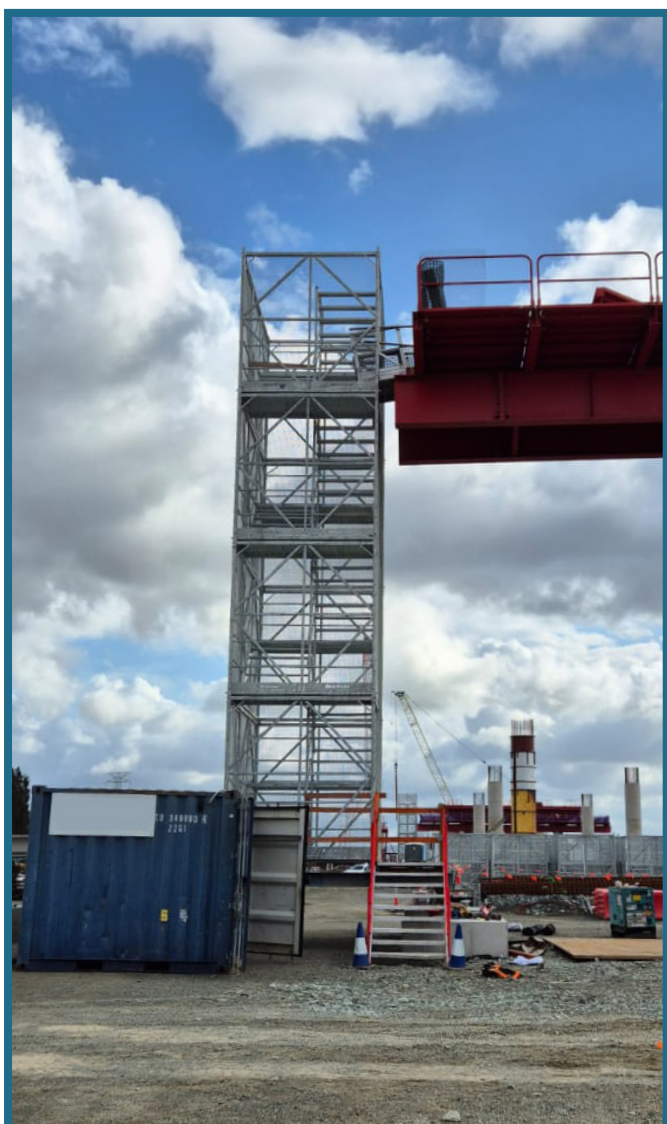
Applications include:

- Jumpform Access Stairs
- Bridge Access Stairs
- Pier / Formwork Access Stairs
- General Vertical Access Stairs





## ABOVE GROUND ACCESS - FREESTANDING RATINGS



### SmartStairs - Freestanding Stair Maximum Loading Requirements

2.3mH SmartStairs - Max Vertical VS Max. Number of People Allowed on SmartStairs			
Vertical Height	Number of Modules	Max. People	Max. Live Load (kg)
2.3	1	20	2,200
4.6	2	40	4,400
6.9	3	60	6,600
9.2	4	80	8,800
11.5	5	100	11,000
13.8	6	120	13,200
16.1	7	140	15,400
18.4	8	160	17,600

Note: The max. Freestanding height shown are based on Wind Pressure for Region A, Category 2, V100.



## BELOW GROUND ACCESS - HANGING STAIR RATINGS



### SmartStairs - Hanging Stair Maximum Loading Requirements

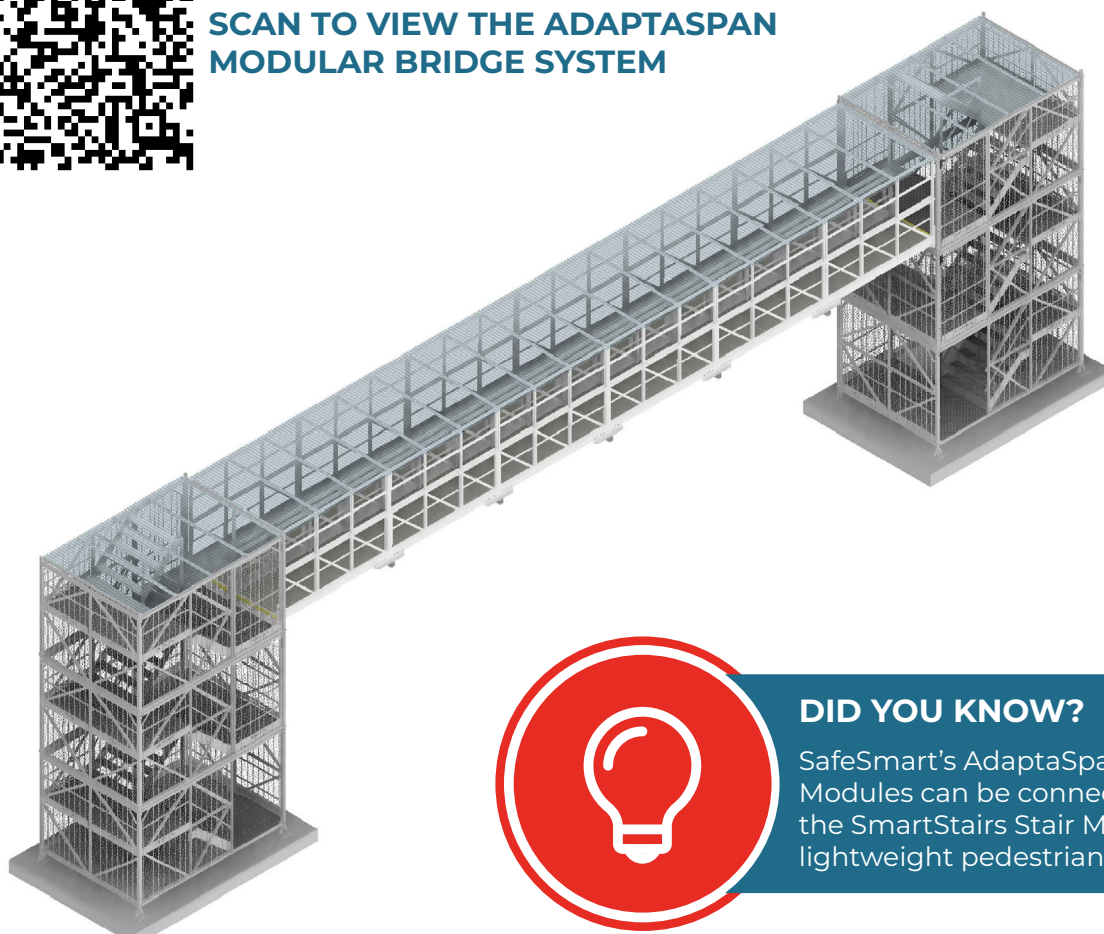
2.3mH SmartStairs - Max Vertical VS Max. Number of People Allowed on SmartStairs			
Vertical Height	Number of Modules	Max. People	Max. Live Load (kg)
2.3	1	20	2,200
4.6	2	40	4,400
6.9	3	60	6,600
9.2	4	80	8,800
11.5	5	100	11,000
13.8	6	120	13,200
16.1	7	140	15,400
18.4	8	160	17,600
20.7	9	180	19,800
23	10	200	22,000
25.3	11	180	19,800
27.6	12	160	17,600
29.9	13	140	15,400
32.2	14	120	13,200
34.5	15	100	11,000



## ADAPTASSPAN BRIDGE & STAIR TOWER

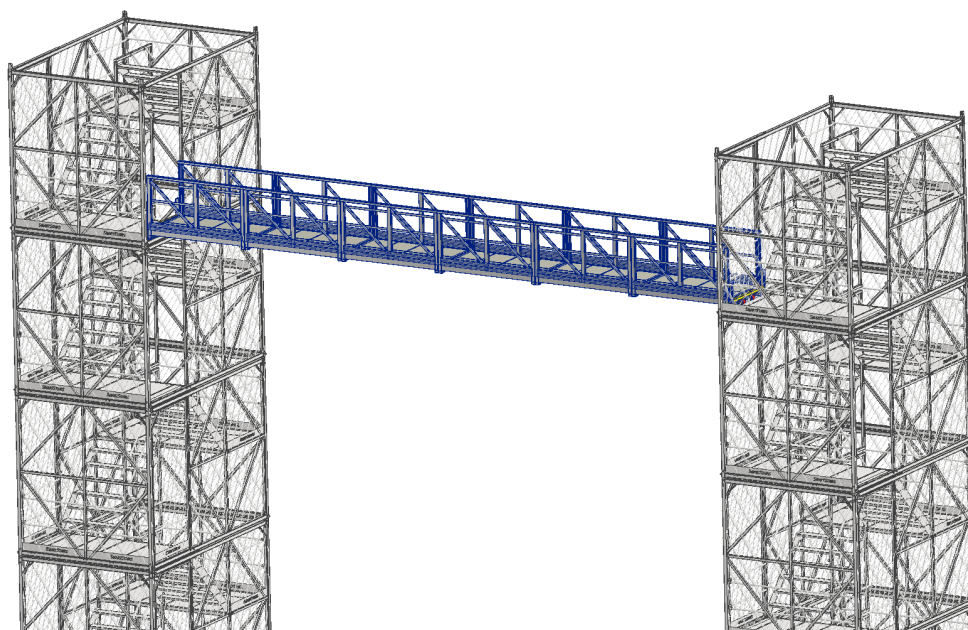


SCAN TO VIEW THE ADAPTASSPAN  
MODULAR BRIDGE SYSTEM



### DID YOU KNOW?

SafeSmart's AdaptaSpan Bridge Modules can be connected to the SmartStairs Stair Modules for lightweight pedestrian traffic.



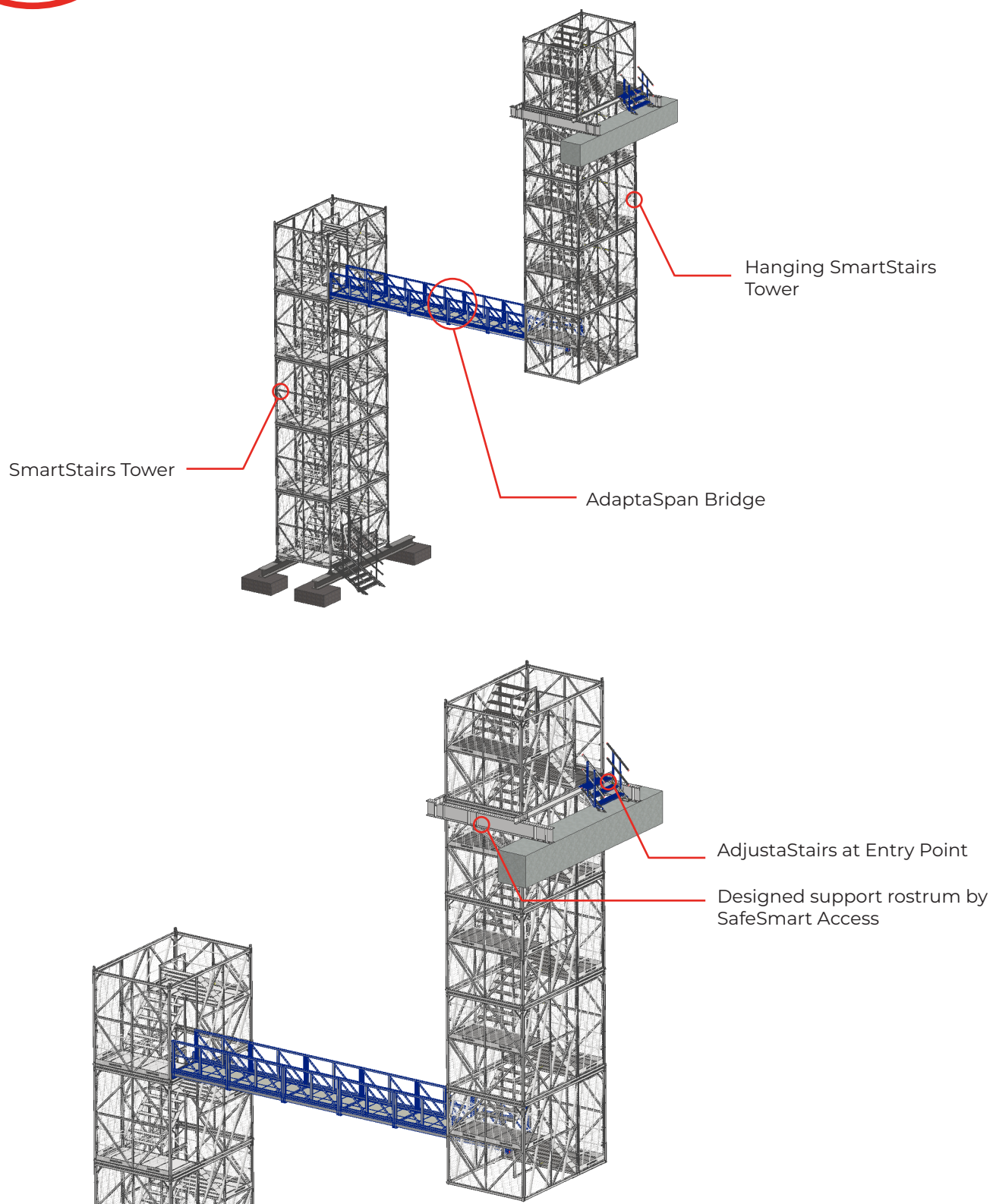


## OFFSET ADAPTASPAN BRIDGE



### DID YOU KNOW?

In a hanging Stair situation, SafeSmart SmartStairs towers can be split and connected with AdaptaSpan to accommodate TBMs and other obstacles.





## SMARTBRIDGE GALLERY



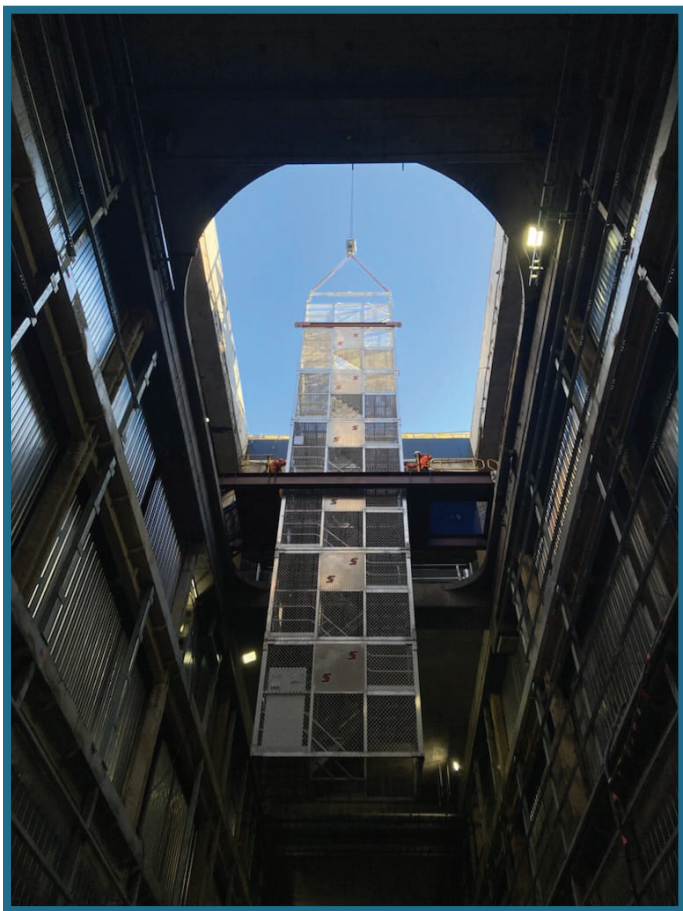


## FREESTANDING GALLERY





## HANGING STAIR GALLERY





## Frequently Asked Questions

### 1. How do you achieve freestanding stair tower with no ties?

Due to the inherent strength of the SmartStairs tower from the bracing pattern in the design, the stairs can freestand, provided they are suitably anchored to a concrete foundation with an H-base arrangement. In some cases, we can achieve up to 18 vertical metres.

### 2. In a hanging stair, how often do you have lateral ties?

It is recommended that lateral ties be used every 12 metres (subject to your design requirements).

### 3. Is the SmartStair system crane-liftable?

Yes, each module has certified lifting points. A tower of 18 metres (6 modules) can be crane lifted. Additional modules can be craned, but this will be subject to wind loadings at the time.

### 4. In the event of any damage to the SmartStairs, how do you recertify the system?

As SmartStairs features a flat-pack design, module sections can be easily replaced, preventing the entire module from being written off. Alternatively, a SafeSmart engineer can inspect the damage and provide guidance on how to rectify it.

### 5. How do the stair modules connect?

Each stair module is connected via a unique sliding pin arrangement. The sliding pin features a handle that allows the operator to slide it left or right to engage with the joining spigot of the upper or lower module.

**For any technical queries, consult with your local SafeSmart representative.**



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## SCAN CODE

Send us your requirements!

Book a Technical Meeting to discuss your requirements.



## LOCATION

Anchor Boulevard, Crossways, Dartford,

