Scaffolding - Shoring - Formwork

ESCALIB Mills

Solution presentation

ENTREPOSE MILLS INTERNATIONAL

1- The ESCALIB

2- Escalib assembly

3- Accessories

4- Design

5- Comparison: ESCALIB Vs staircase with scaffolding system

6- Examples

ESCALIB Mills

Temporary access from a point A to a point B

Foot print:
1,68m x 1,68m

Allowable Loads:
Max 8 people per module
Max 20 people on the whole stair
Working load: 480 daN/m²

Do not use if wind > 65km/h

ESCALIB Mills

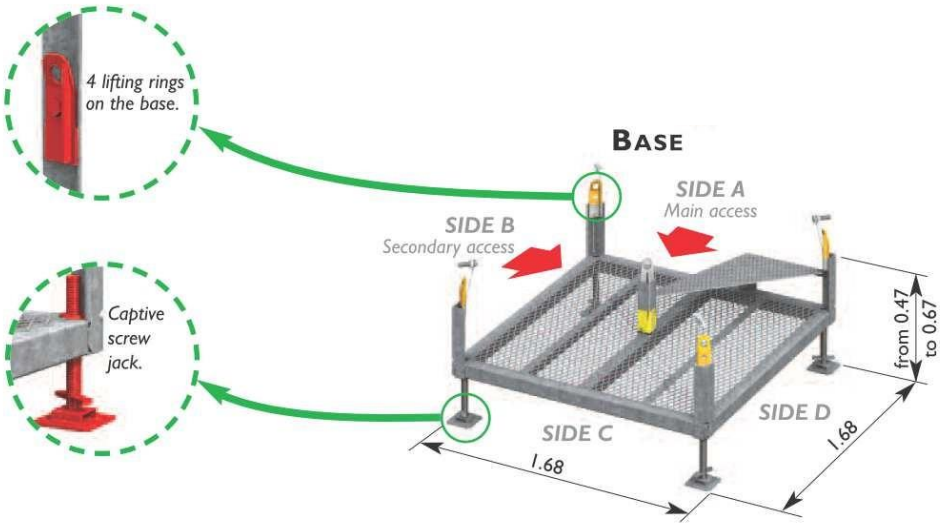
ESCALIB compared to a scaffold stair:

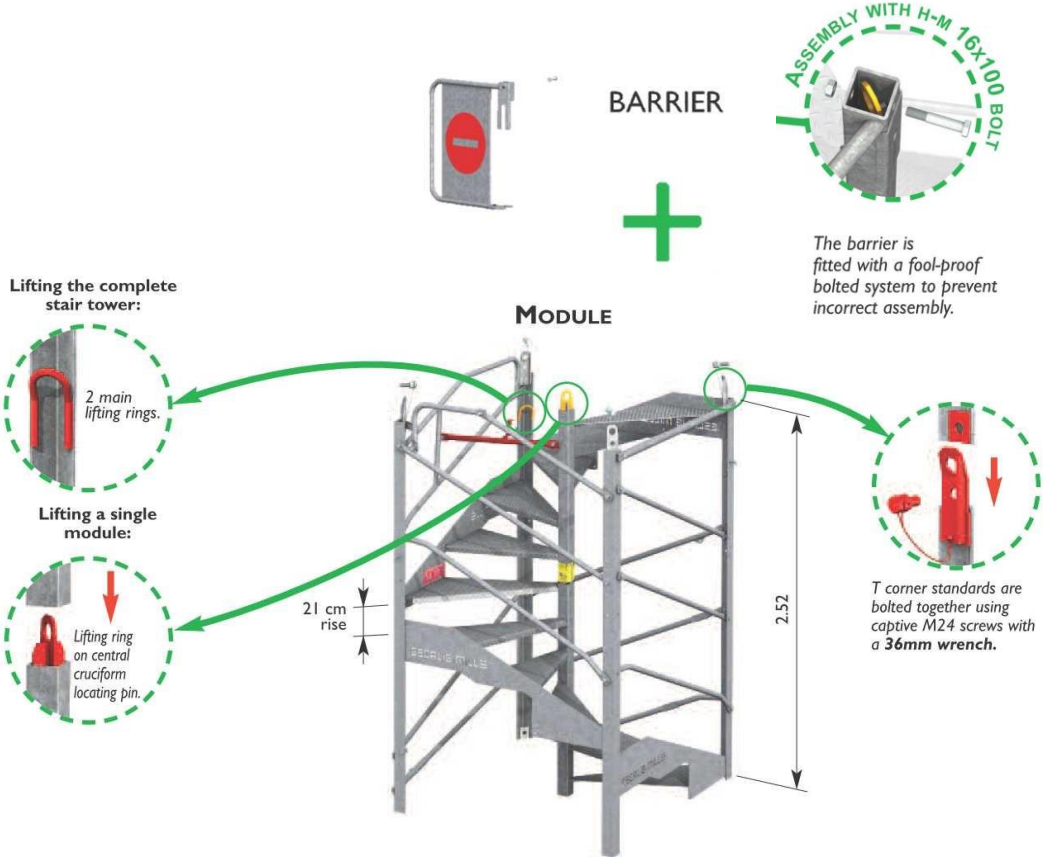
- Escalib is smaller and fit in narrower spaces:
  standard version =**1,7m x 1,7**
- Faster installation and mobility: **10x faster to mount**
- **Assembly and dismantling using collective protection** with built-in handrails
  (no harness needed)
- **No need of scaffolding training/certifications to mount it**

ESCALIB Mills

Only 3 Components:

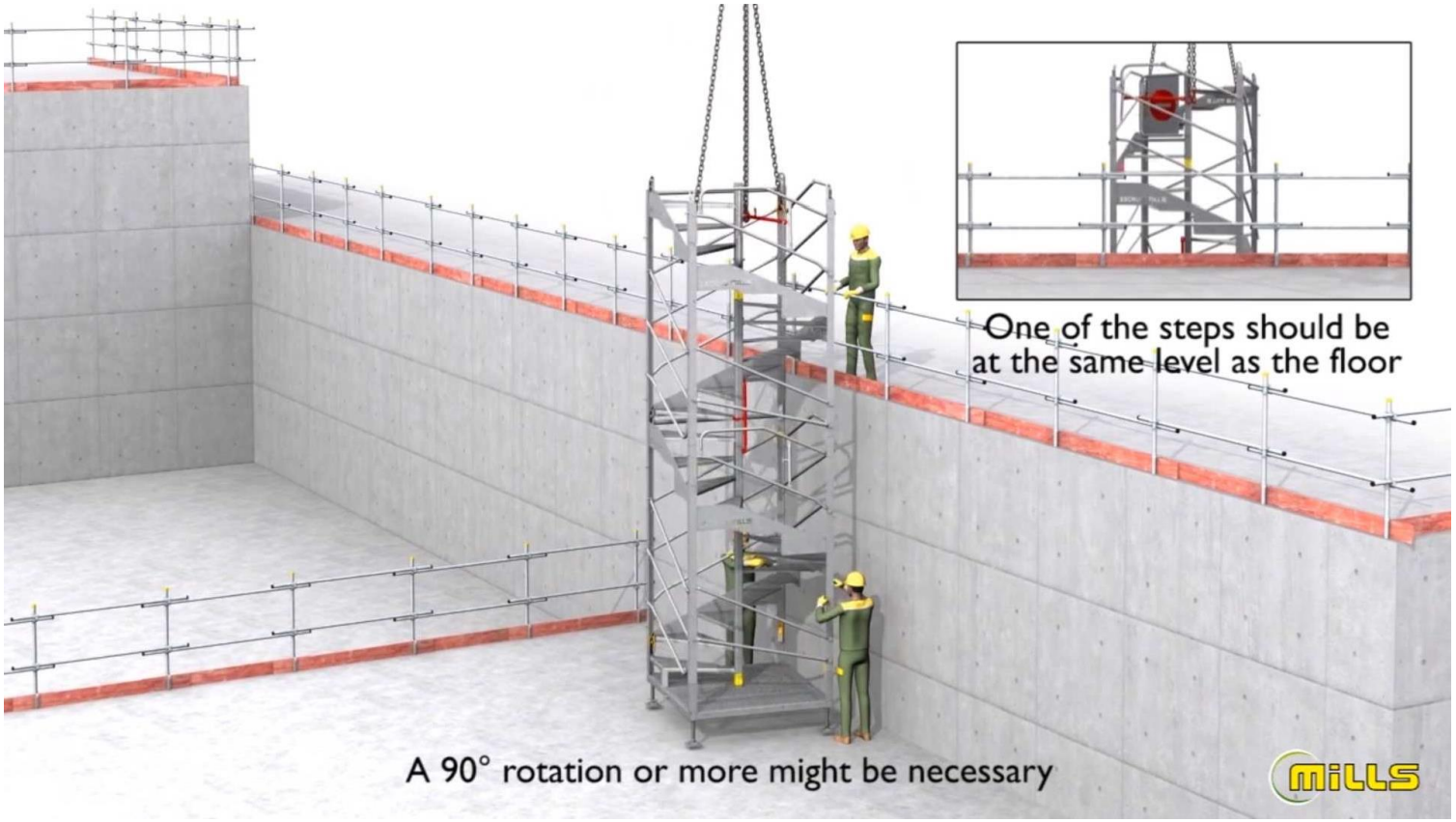
- Base
- Module
- Top Barrier





ESCALIB Mills

One of the sides is always at the right level:



ESCALIB Mills

> The Module:

All the module's sides are secured by guardrails.

The triangular steps reaching into the corners (0.51 x 1.00m) act as landings for resting and allowing users to pass.

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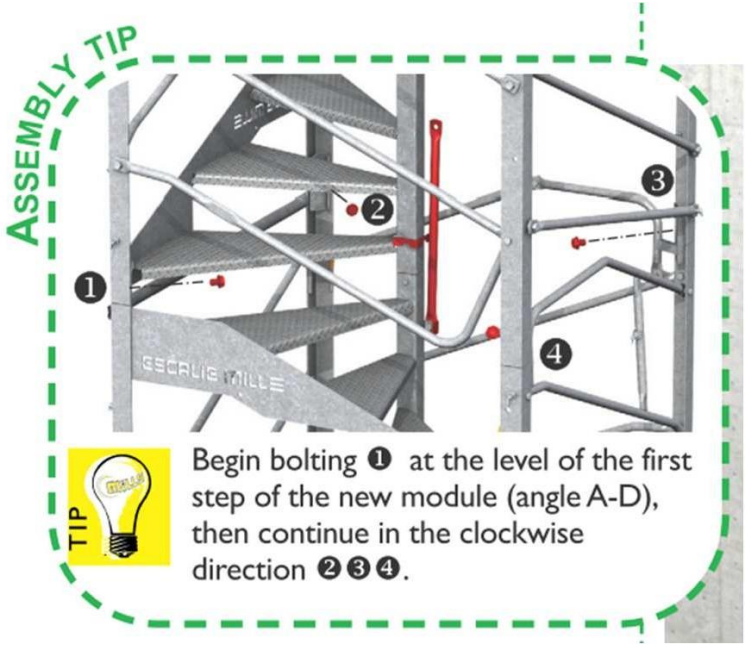
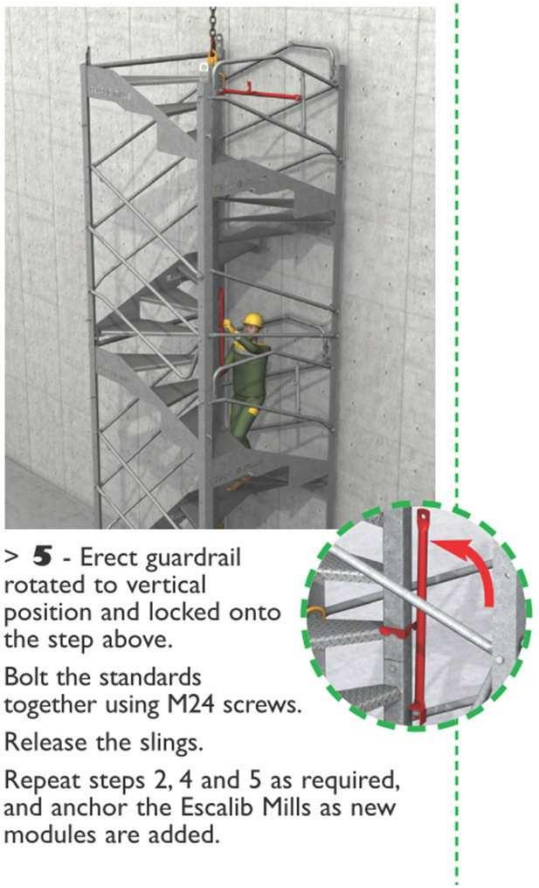


> **4** - Install a new module.



> **5** - Erect guardrail rotated to vertical position and locked onto the step above.

Bolt the standards together using M24 screws.

Release the slings.

Repeat steps 2, 4 and 5 as required, and anchor the Escalib Mills as new modules are added.

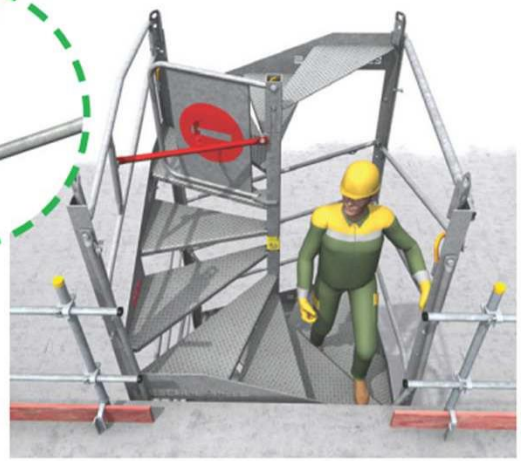
ESCALIB.Mills

WARNING:
The erection guardrail must not be used as a substitute for the barrier gate.

"TOPMOST" MODULE

> **6** - Install and fix the barrier gate: the erection guardrail is in the horizontal position.

> **7** - With slings attached to the 2 lifting rings, the topmost module is fitted.
Bolt the 4 standards together using M24 screws.



> **8** - Check that the stair tower has been anchored before unhooking the slings.
Swing the guardrails swung out of the way to allow access to the required level.

ESCALIB Mills

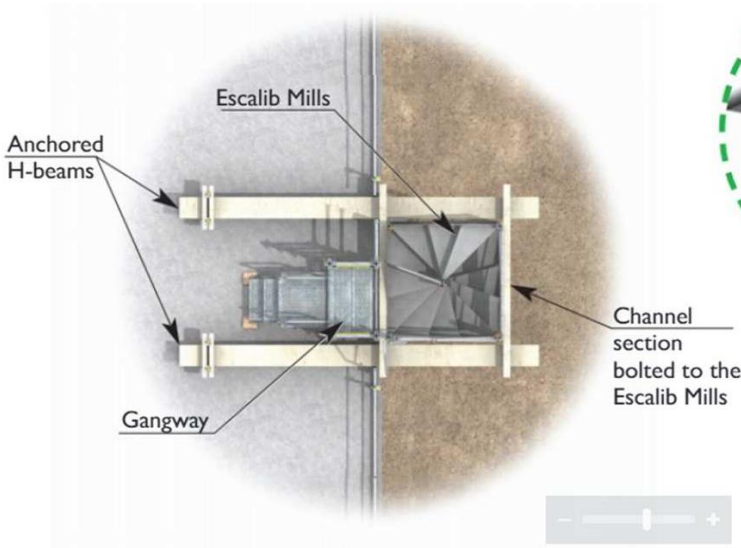
> 9 - At the access levels, the rails are positioned so as to privilege access by the main side A (side names shown on the sticker).

REQUIREMENTS:
> Check before use that the railings are correctly locked.
> Fit new anchors as new modules are added.
> Dismantle in the reverse order of assembly.

ESCALIB Mills

Suspended Escalib Mills...

The Escalib Mills can be suspended. Cantilevered out on H-beams, the modules are assembled then positioned by crane to quickly provide access to an excavation.



Layout of a suspended Escalib Mills MDS for accessing an excavation.

ESCALIB Mills

How to **add modules from the bottom:**

Advantage: no need to remove the anchors to add a module

ESCALIB Mills

How to **add modules from the top:**

Advantage: it is possible to add more than one module at a time

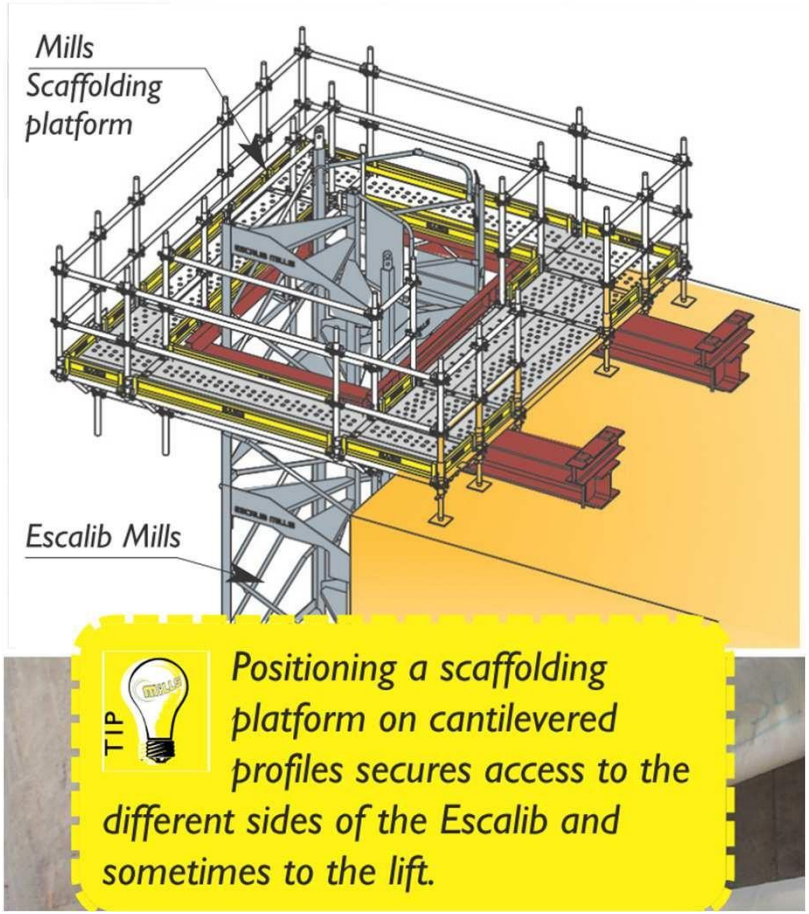
> **1** - On the installed module, place the erection guardrail in the horizontal position and remove the barrier gate. Add a new module already fitted with a barrier gate and channel sections.

> **2** - Take up the slack on the crane slings.
Remove the anchors and lift the assembly.

> **3** - Lower the Escalib Mills until the 2 new channel sections are resting on the H-beams.
Fasten the anchors.
Dismantle the 2 channel sections.

ESCALIB Mills

Platform to access around an ESCALIB to ease the assembly on new modules



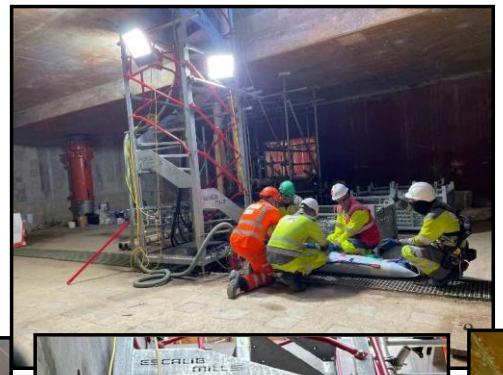
ESCALIB Mills

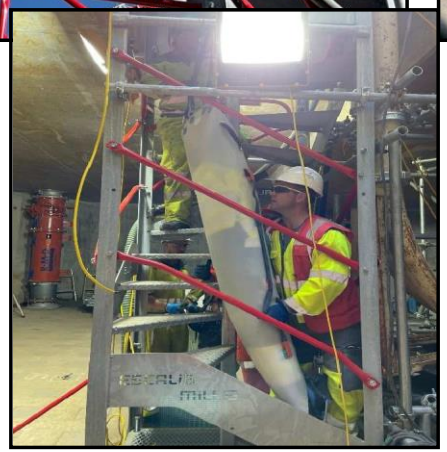
How to **access to the bottom of the shaft:**

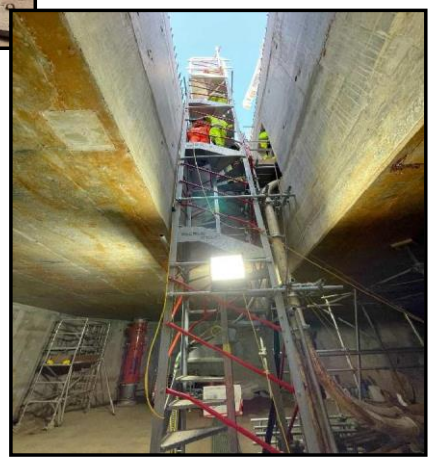
Option 1: Add a second escalib :

Option 2: Add a universal stair

Extraction of an injured person through an ESCALIB:







Exercise made on HPC nuclear plant construction site.

The excersice was done in a Mini-ESCALIB, the smaller model of ESCALIB: 1,2m x1,2m,

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ESCALIB Mills - Accessories

Front gangway:

Compatible with ESCALIB Mills
and mini ESCALIB Mills

Front gangway assembly in collective protection

Gangway start V2

Gangway

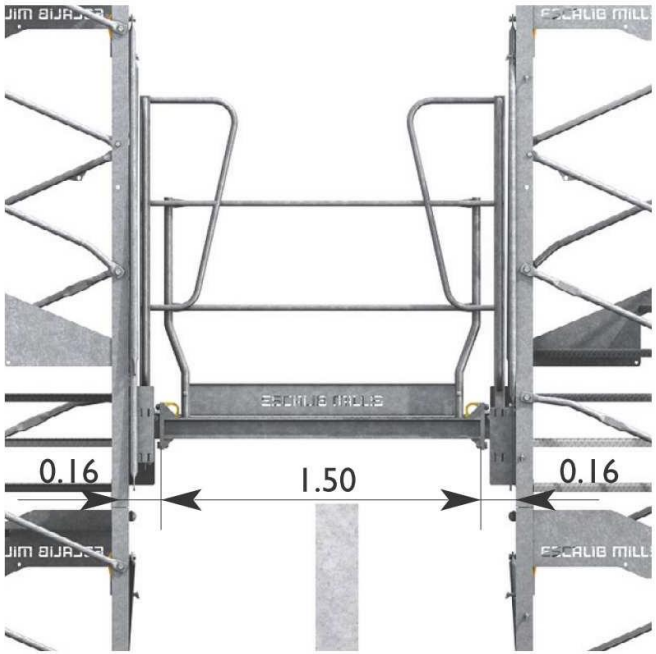
MDS gangway bracket

Arrival

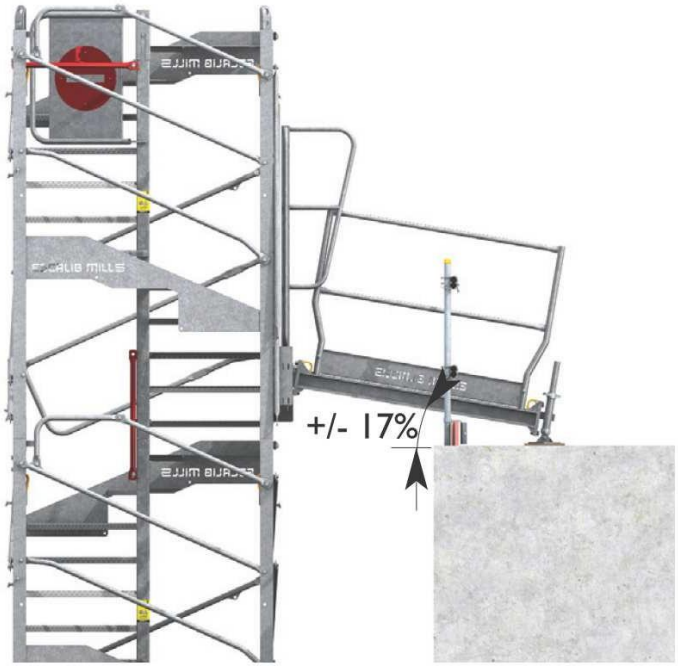
ESCALIB Mills

Front gangway:

Gangway over a wall.



Access onto a roof slab.



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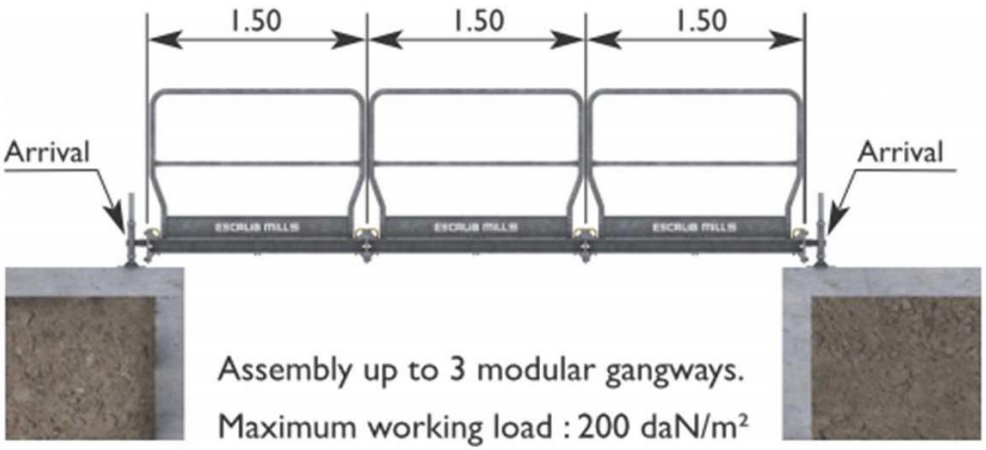
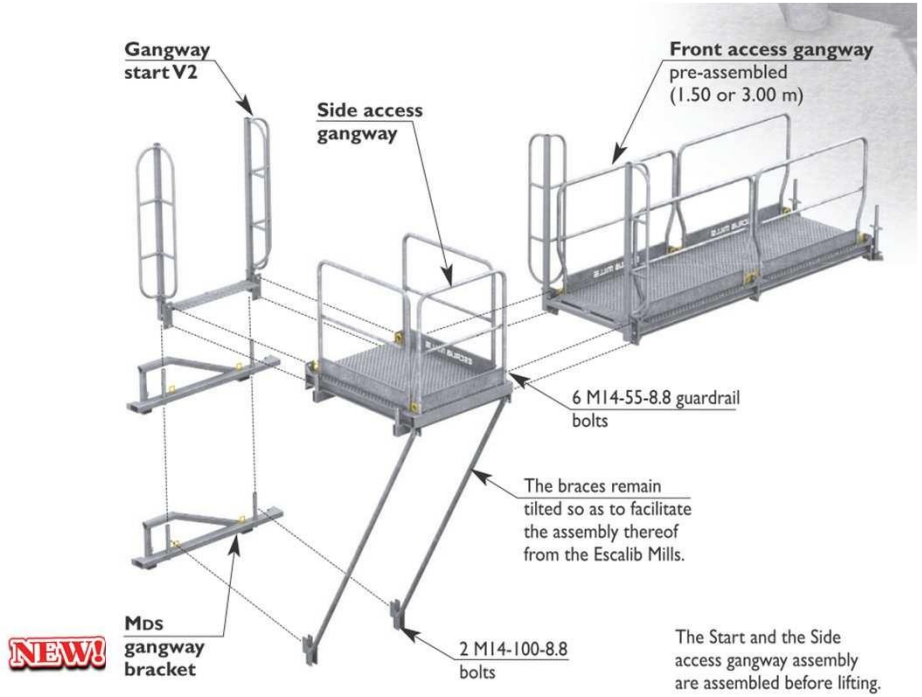
ESCALIB Mills

Front gangway: use without Escalib

> Escalib Gangway for crossing:



Lateral gangway:



To be used when several different levels of access are needed

Bracket landing

The bracket landing equipped with un universal stair allows access over a parapet.
Suspended universal stair up to 6 steps.

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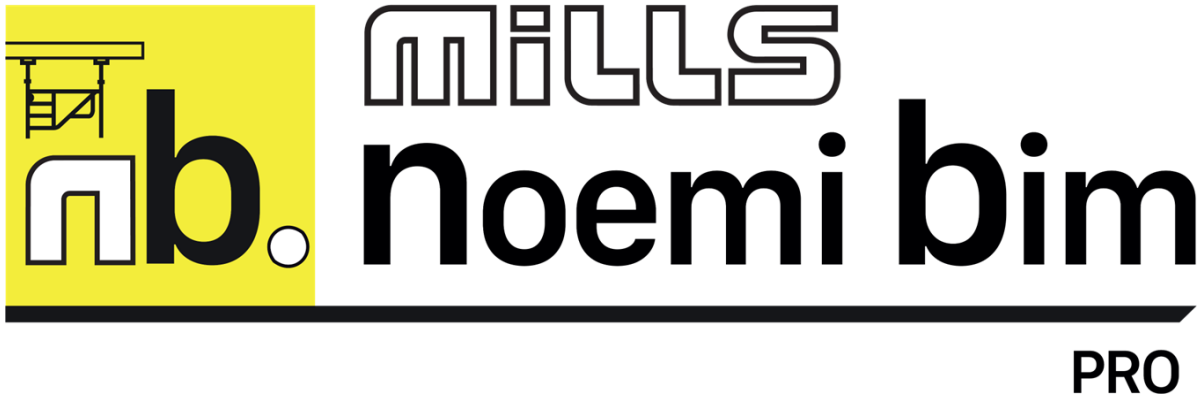
Design with:



In-house developed BIM software for temporary works

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Automated temporary works generator

- With note of calculation
- With safety features

Library

- Regularly updates, compatible for .ifc export
- Severals levels of detail for a greater lisibility in 2D and on tabs

Kit list

- Automated generator of kit list
- Lists management

Design:

Assumptions:

- Reference document: SA-01-54.04-Stairways for shaft access
- Peak Wind Velocity: 65km/h (ESCALIB is shielded from the outside wind) (ESCALIB not covered)
- Working load: 20 people on the whole stair, 8 people per module or 480 daN/m²
- Anchor points designed by Ontario Transit Group, Mills will provide the loads.
- Reference standards and documentation: EC0, EC1, EC3, MILLS technical documentation.

Design includes:
3D Model (IFC), Drawings (PDF / DWG), Items list and Calculation note with 1 revision index only, without modification of the initial hypotheses.

Any further modification will be quoted on the basis of 150 $ per hour.

On-site visits and meetings are not included.

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Comparison:

ESCALIB Vs staircase with scaffolding system

EQUIPMENT	Assembly (hour per meter)	Disassembly (hour per meter)	Total (hour per meter)	Linear meter	Total hours	Hourly rate (€)	Hourly rate (€)
4-leg site staircase (scaffolding system)	3,5	2,5	6	40	240	100	24 000,00 €
6-leg site staircase (scaffolding system)	4	3	7	40	280	100	28 000,00 €
8-leg site staircase (scaffolding system)	5	4	9	40	360	100	36 000,00 €
Ratio of equipment on site, excluding loading/unloading & various preparations (stowing on the yard, setting up lines/nets/etc...)							
Module pre-assembly (height 4.00) and assemblywith crane for structures starting from 12.00m.							
EQUIPMENT	Assembly (hour per module)	Disassembly (hour per module)	Total	Linear meter	Total hours	Hourly rate (€)	Hourly rate (€)
ESCALIB (pre-assembly of MODULE Kit - height 2m50)	1,5		1,5	40	24	100	2 400,00 €
ESCALIB	0,5	0,5	1	40	16	100	1 600,00 €

Time gained for assembly: 10x

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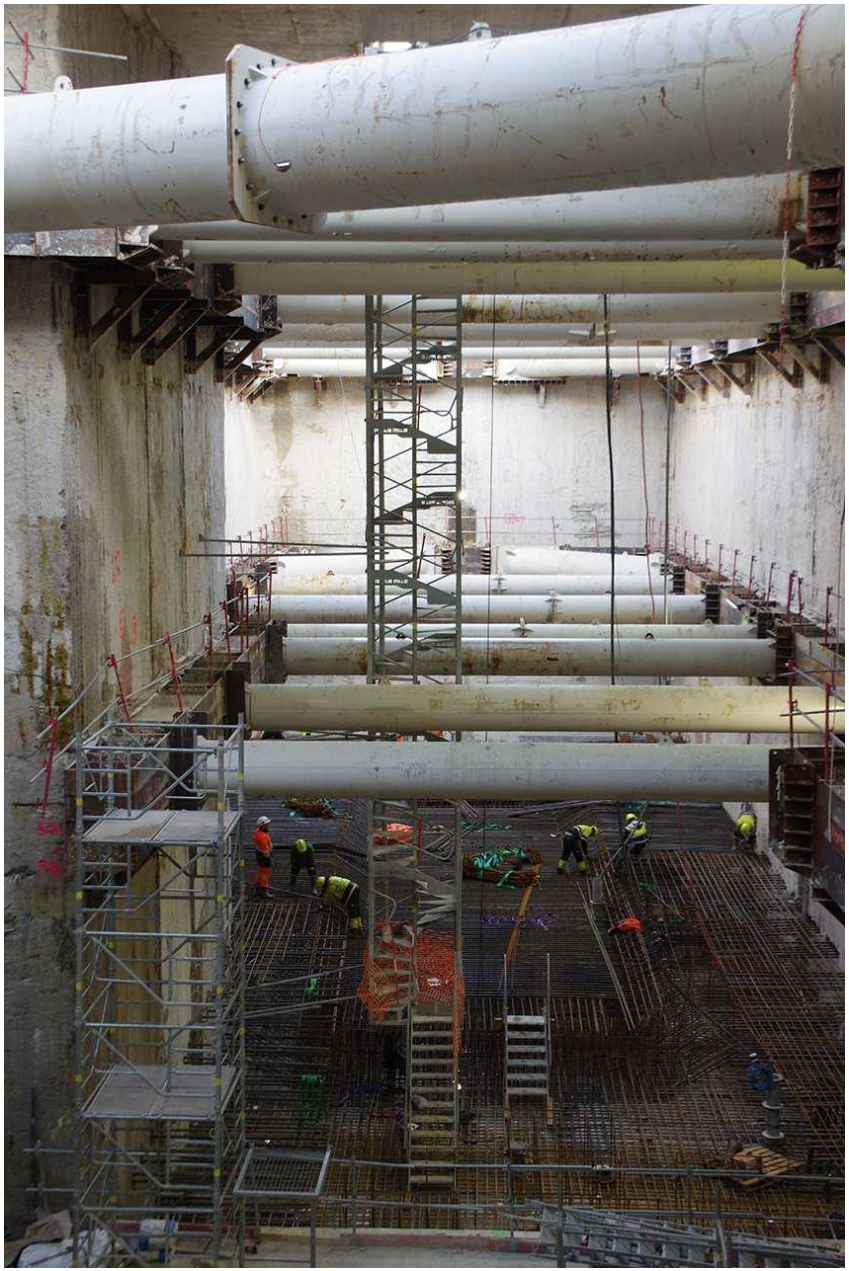
Access Solution:

Grand Paris Project:
Line 16 Aulnay
Suspended access



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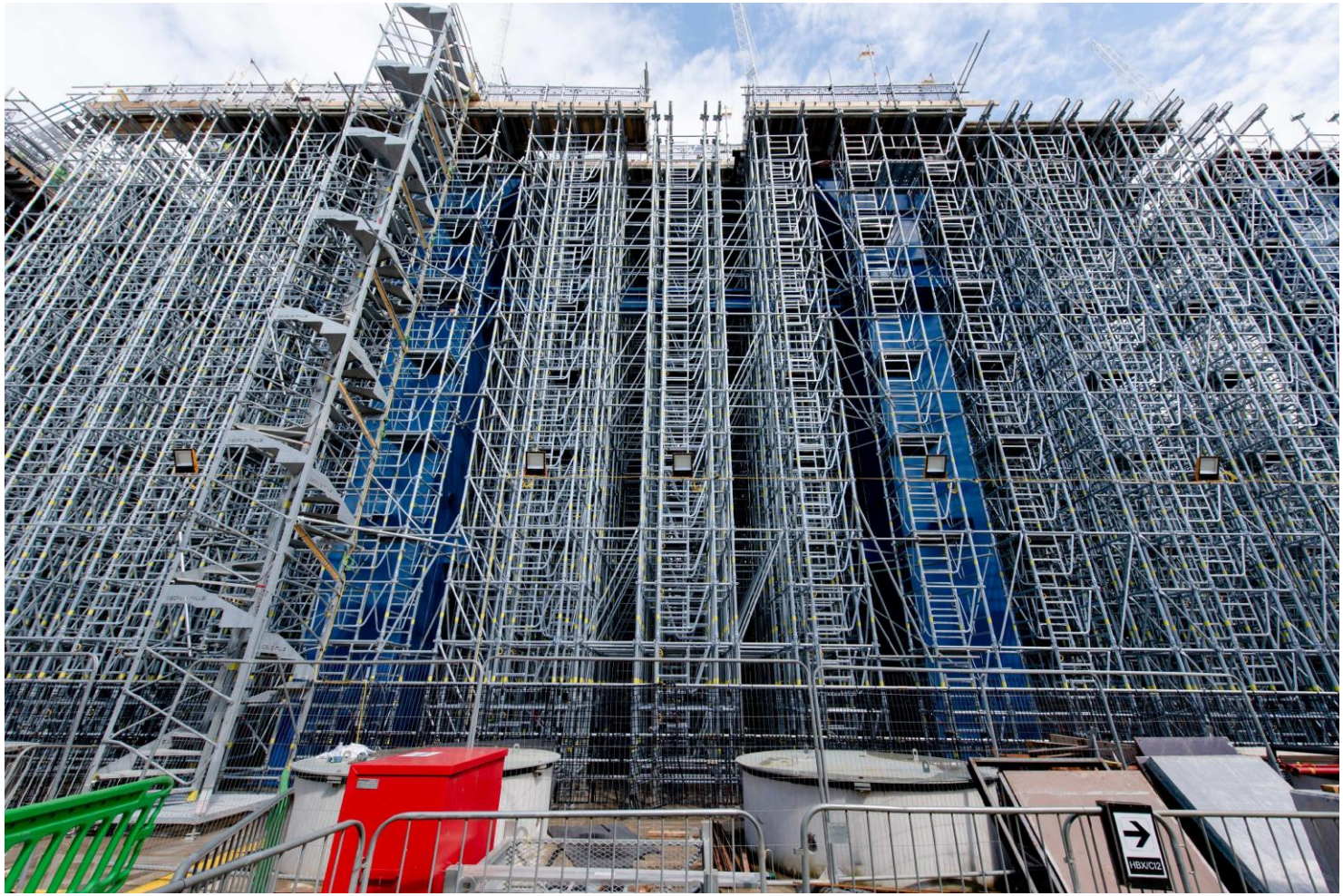
Grand Paris Project: Triangle de Gonesse L17

3 meters gangway and gangway between two ECALIB

TGA table
Nuclear Plant HPC
(UK)Formwork access



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Grand Paris Project:
Line 15 - Chatillon-MontrougeStation
Suspended access

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Grand Paris Project:
Line 15 – Vitry Centre Station
Formwork access

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Grand Paris Project:
Line 16 – Puits Vaillant
Suspended access with platform

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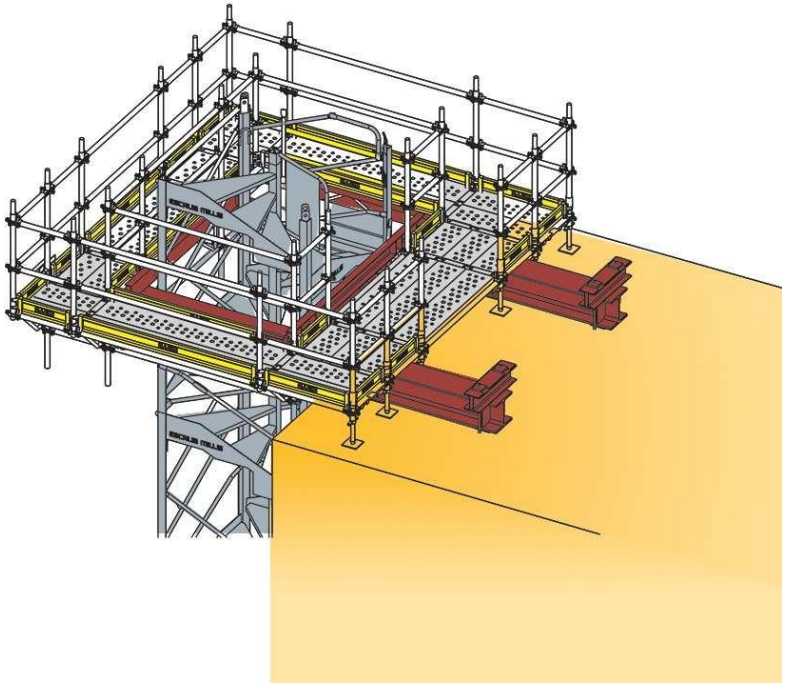
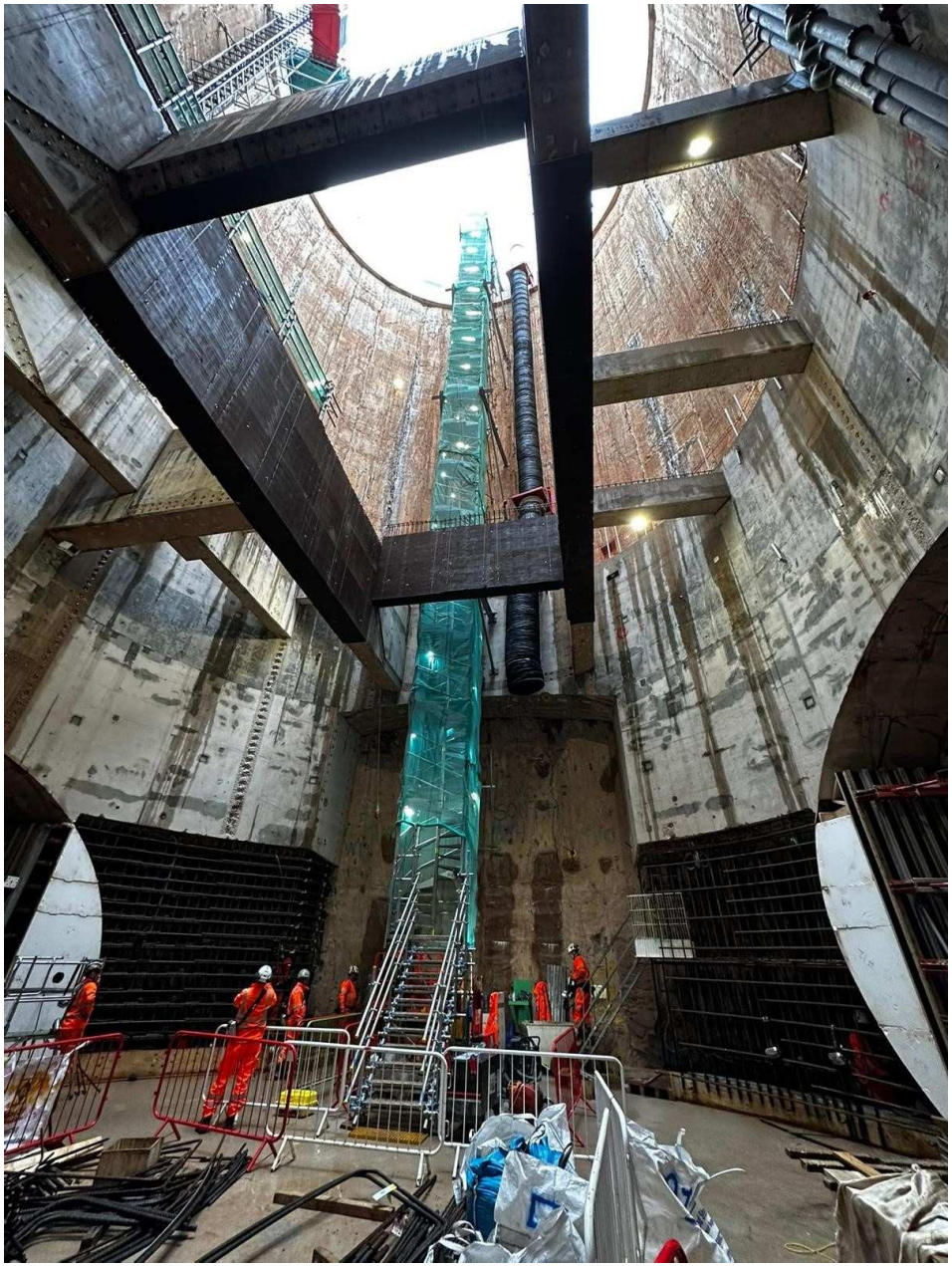
Grand Paris Project:
Line 16 – Puits Vaillant



HS2 – Bromford shaft
Suspended 52m
ESCALIB



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MILLS

MILLS ESCALIB TECHNICAL NOTICE: https://www.mills.fr/flipbook/en/escalib/7/#zoom=z

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