

W@H Edge Protection Guidance

ECHO
investment



*Wszystko
zaczyna się
od Ciebie*

Key messages

- Avoid work at height when possible
- If work at height cannot be avoided, an assessment process is used to identify the best fall protection controls
- Employees shall be protected from the risk of falls from all work areas where injurious fall could occur

Standards

- Hierarchy of control
- Mandatory use of temporary system edge protection
- Low level working platforms
- Safe use of fall restraint systems
- Anchor points
- Safe use of alsipercha system
- Designation of hazardous zones
- Safety nets
- Extension/move away of temporary system guardrails
- Site welfare container system with upper walkways

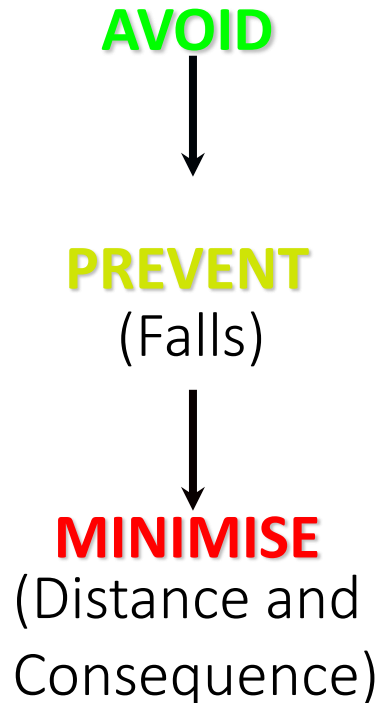


Standards

- Protection of lift shafts and floor openings
- Wall protection from two sides when concreting
- Mobile scaffolding completeness
- Staircase guardrails
- Use of facade scaffolding sequence of works on balconies and roofs
- Access-egress to work at height
- Suspension trauma – safe evacuation
- Preston platforms



Understanding the Hierarchy of control (proper risk assessment and planning) 1 (first choice) - 2 – 3 - 5 (last resort)



Collective		Personal	
1	PREVENT <u>Work Platforms</u> System Edge protection, Scaffolding, MEWPs, Mobile Towers, Podium Steps, Pop-Ups	2	PREVENT <u>Fall Restraint</u> Harness & Fixed length Lanyards, Leading Edge, Spanset
3	MINIMISE Safety Nets or Airbags	4	MINIMISE <u>Fall Arrest</u> Harness & Fall Arrest Lanyard, Inertia Block, Rope Access
		5 LAST RESORT Ladder, Hop-Ups Stilts	

Don't Just Think People, Think Tools and Materials as well

Avoid - Prevent - Minimise

Avoid work at height

- if you don't have to go up there DON'T!

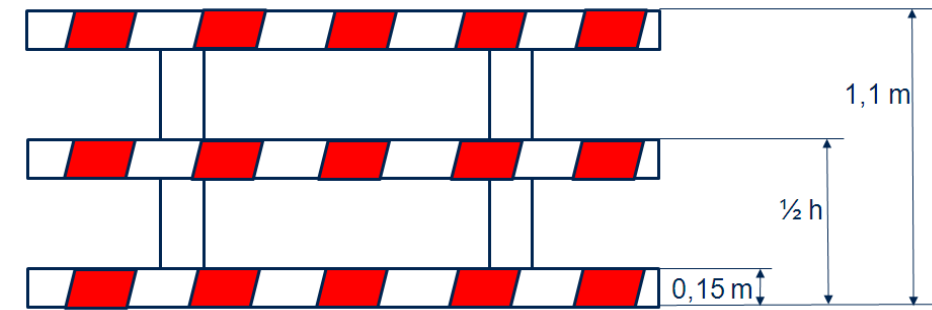
Prevent falls

- select the most suitable equipment
- use the most suitable way of working

Minimise the distance and consequences (e.g. safety nets, airbags etc.)

- minimise the consequences
- take other measures to prevent injury eg instruction, information and training

Mandatory use of temporary system edge protection



No gap should exceed 45cm

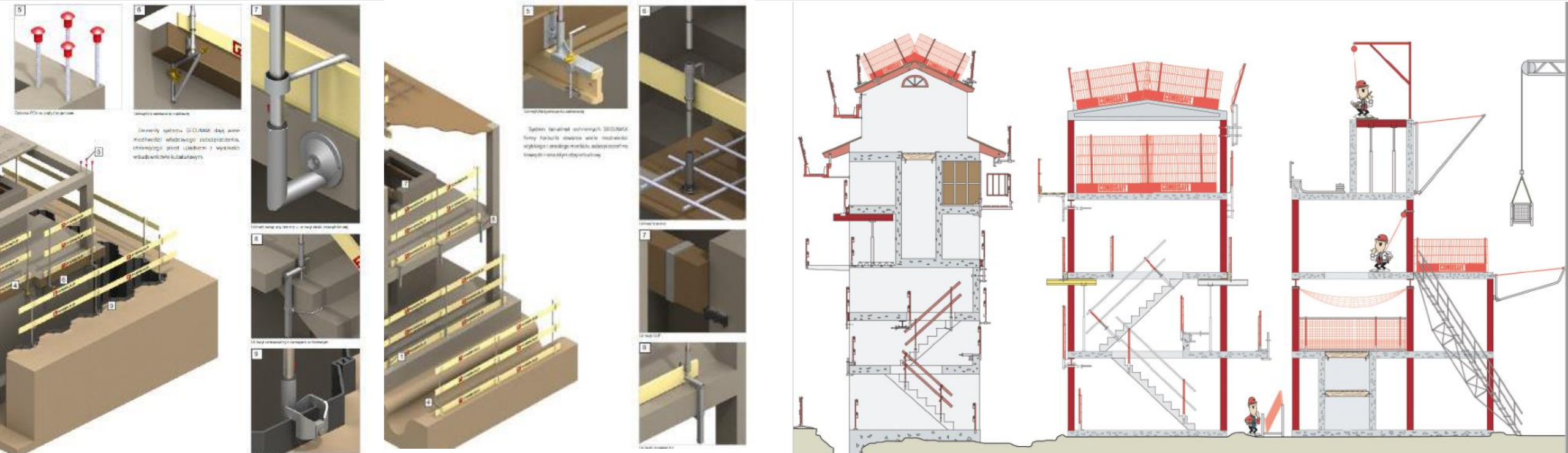
At Echo we are expecting high standard of edge protection when w@h. You can choose from wide range of available systems on the market.

Mandatory use of temporary system edge protection



At Echo we are expecting high standard of edge protection when w@h. You can choose from wide range of available systems on the market. When using mobile system barriers (not fixed to the ground), they should be set at a distance of min. 2m from the edge.

Mandatory use of temporary system edge protection



At Echo we are expecting high standard of edge protection when w@h. You can choose from wide range of available systems on the market.

Low level working platforms



At Echo our planning and controls are based on risk assessment. Regarding accidents statistics, working at height is high risk activity and should be treated seriously even on lower levels. That's why we recommend to use of guardrails around the working platform starting from 0,5m height.

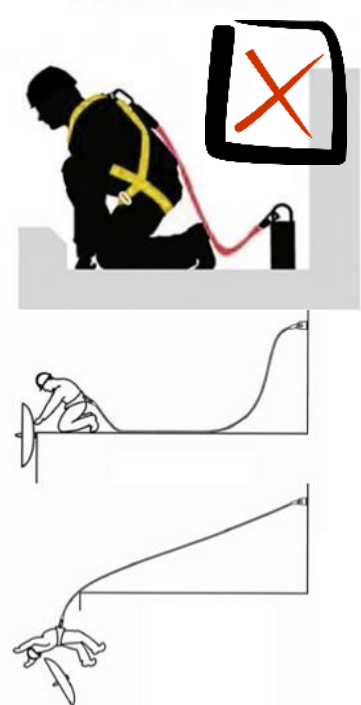
Safe use of fall restraint system



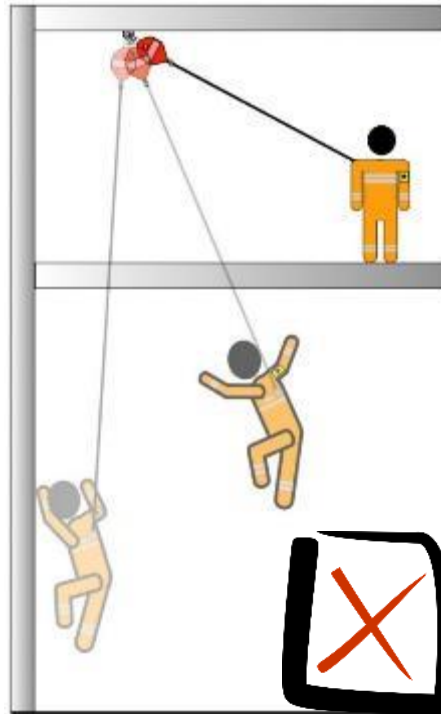
Use of fall restraint personal protection has higher priority than fall arrest systems (e.g. inertia blocks). Properly installed fall restraint system will protect an employee from falling over the edge (he will not start the fall or will be caught immediately).

Safe use of fall restraint system

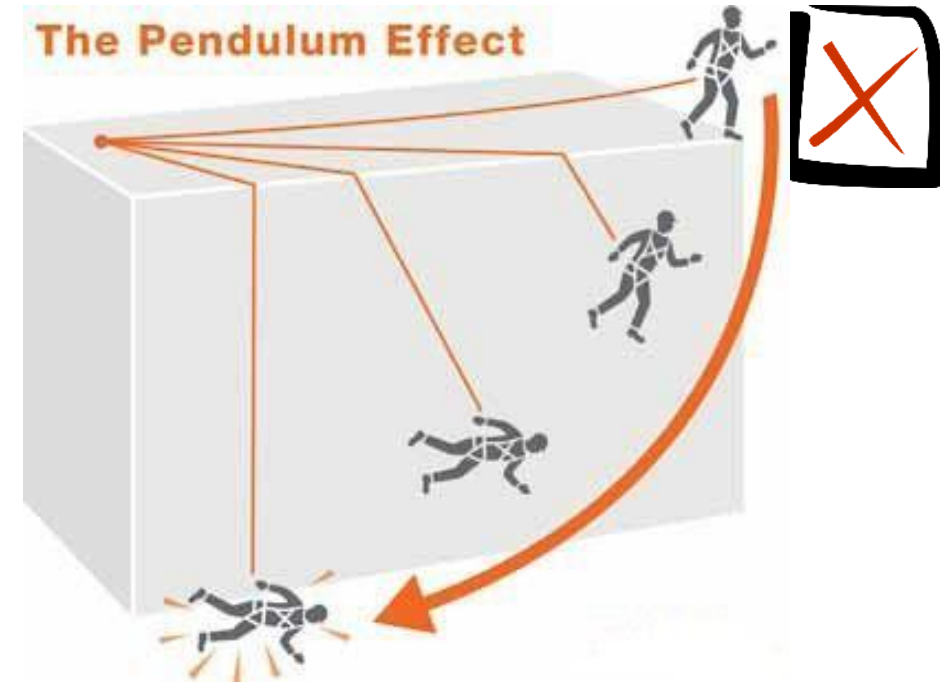
FALL ARREST



FALL RESTRAINT

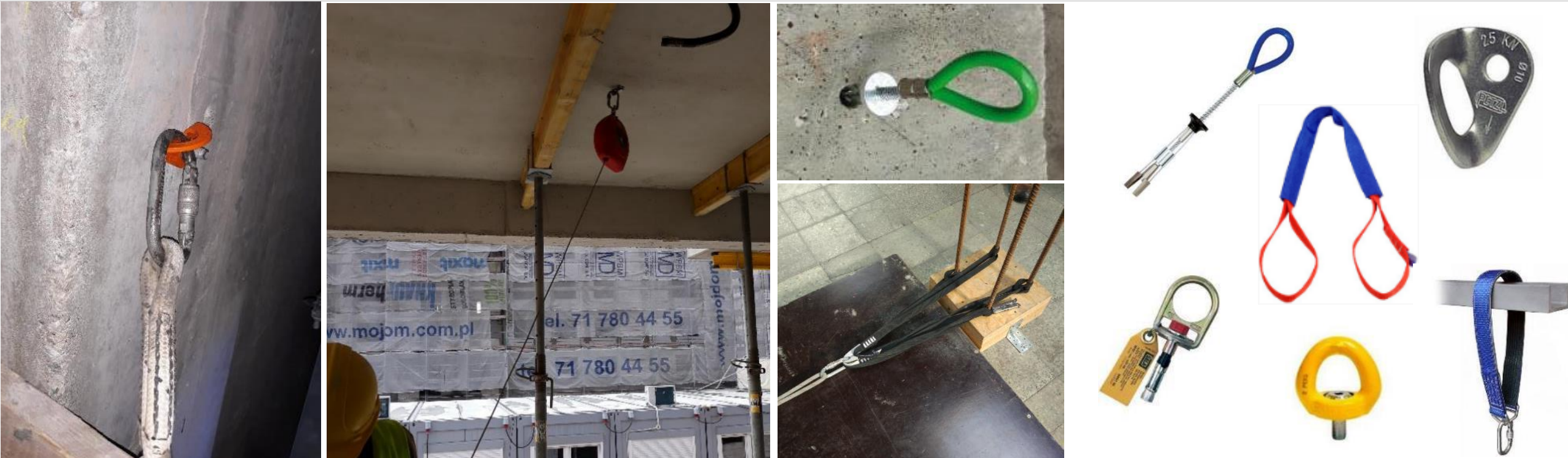


The Pendulum Effect



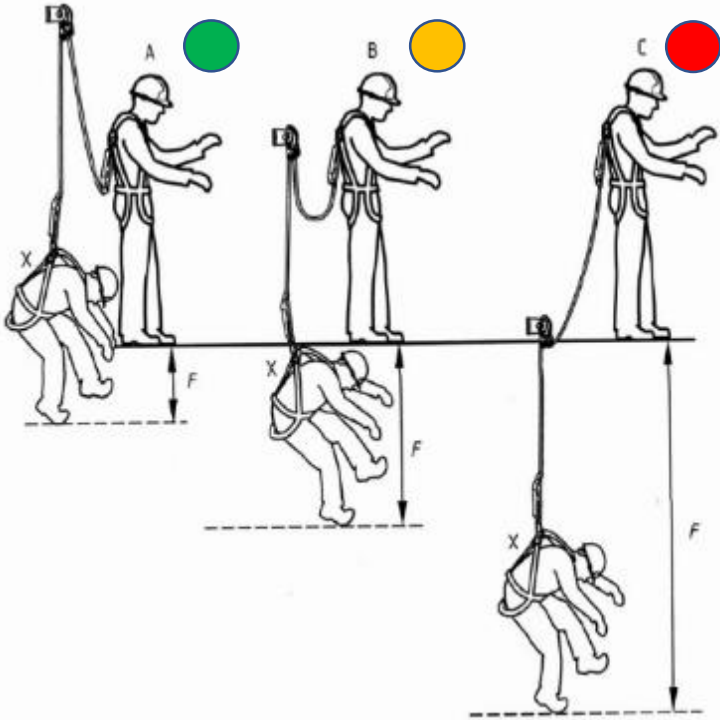
When using fall restraint systems special attention has to be paid to avoid pendulum effect, to prevent it use a life line with shuttle to ensure the anchorpoint remains directly behind the operative no matter where he moves through the grid (right angle between the life line and the cord from the harness).

Anchor points



Anchor points should be attached to permanent part of the structure and must be proprietry pull tested equipment. The anchorpoints should be preferably above the operatives head. If this is not possible you must ensure that equipment cannot snag another equipment in the area.

Anchor points



- A – low risk - the highest point = less force
- B - medium risk
- C – high risk– the lowest point – more force

Anchor points should be attached to permanent part of the structure and must be proprietary pull tested equipment. The anchor points should be preferably above the operatives head. If this is not possible you must ensure that equipment cannot snag another equipment in the area.

Safe use of ALSIPERCHA® system



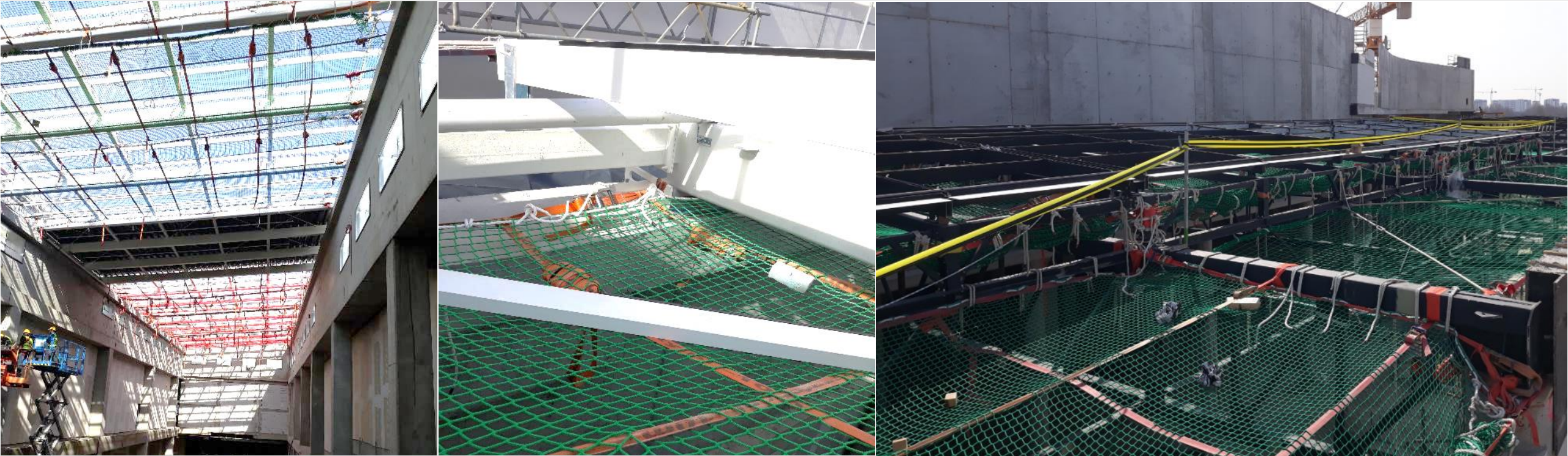
When using Alsipercha type systems care must be taken not to move too far in any direction from the main frame as pendulum effect will occur (especially on line objects e.g. reinforce-concrete beam) if too much line has been expended from the system. If this type of system is used operatives must not wear a fall arrest harness with this system.

Designation of hazardous zones



Hazardous zone should cover an area of 6m from the potential place of falling objects, but no less than 1/10 of its height. Always secure the workplace against unauthorized access.

Safety nets



Safety nets should only be installed by competent qualified Staff and should be tied at 1,5m center. Safety nets should not be fastened to taught (unless they are designed to act as a working platform) as this causes trampoline effect. Operatives falling into safety nets must be rescued immediately.

Extension/move away of temporary system guardrails



Do remember that top guardrail have to be at the level of 1,1m from the edge of floor slab from which an employee can fall. Especially after concreting it is necessary to use system edge protection extension (to make it higher) or move guardrails away from the edge (use of longer formwork beams to which guardrails are attached).

Site welfare container system with upper walkways



At Echo we recommend to use system solutions for upper walkways on containers as this is much safer solution than timber one.

Protection of lift shafts and floor openings



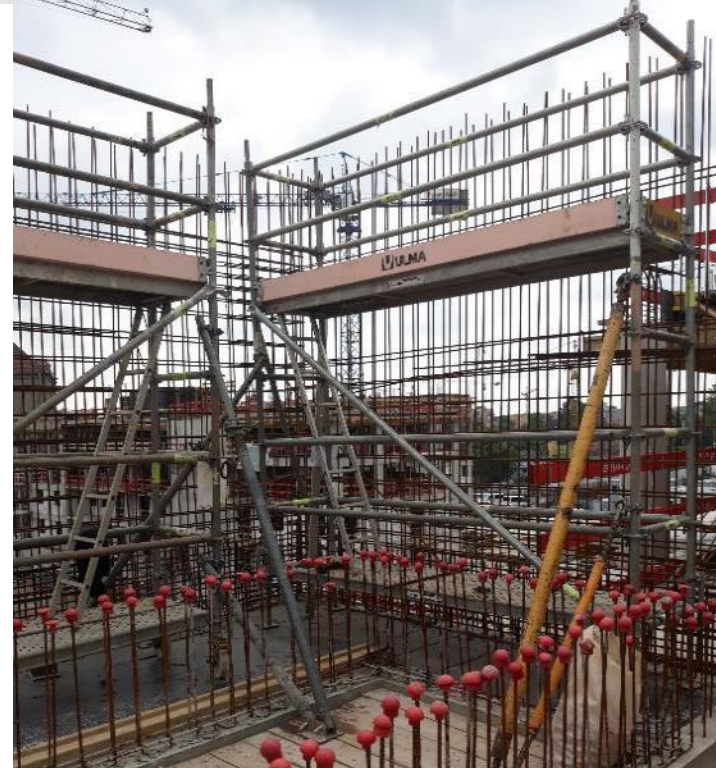
During the construction phase, all lift shafts have to be protected with a double guard rail and toe board, installed upon striking of the formwork or completion of the shaft walls at each floor level. All floor openings must have secure cover attached to the floor slab.

Wall protection from two sides when concreting



When concreting a wall do remember to protect an employee performing the work on the working platform at height from both sides with use of system guardrails. Guardrails are available as a part of the formwork system but you have to ask the supplier about it before you place the order. It is also accepted to use mobile scaffolding.

Mobile scaffolding completeness (incl. outriggers)



When planning works at height do remember about proper sequence of works regarding hierarchy of control. Our first choice should always be use of collective protection equipment such as mobile scaffolding. For mobile scaffolding where the height is more than 3 times the narrowest base width, additional outriggers are required, to provide stability (check a scaffolding manual).

Staircase guardrails



In many cases on construction sites we do use final staircases as access – egress between different levels of the building. In such situation we have to provide proper system guardrails in a staircase till the moment when we have final staircase guardrails installed.

Use of facade scaffolding sequence of works balconies and roofs



When planning works at height do remember about proper sequence of works regarding hierarchy of control. Our first choice should always be use of collective protection equipment such as facade scaffolding when working on balconies, roofs etc.

Access-egrees to work at height (temporary system staircases)



System temporary staircases have to be used as soon as possible as one of the safest solutions of providing access and egress to different levels on construction site. It also provides safe evacuation route in case of emergency. Ladders should not be used for this purpose taking into account the number of people and number of times they have to go up and down from one level to the next.

Suspension trauma – safe evacuation



When working at height and using fall arrest systems you have to consider safe rescue of suspended person. Think how safely you can rescue a person in such situation. On average you have only 15min to safely rescue an employee. Rescue plans should be described in Risk Assessments and Method Statements.

Preston platforms



For safe transport between different levels on buildings Preston Platforms as certified solutions have to be used. They must have full guardrails, closable gates at the outer end and must display the safe working load. They must be installed according to manufacturers instructions.

ECHO
investment

STOP

ECHO
investment

THINK

ECHO
investment

ACT

Thank you for your attention!

Stay Safe!



If any questions please do not hesitate to contact with EHS team.