



Issues

Slope gradient presents construction and maintenance risks, such as:

- Working at height
- Slippery when wet – grass, slabs
- Plant overturning
- Difficulty handling materials – e.g. cutting and laying slabs



Mitigation

Design

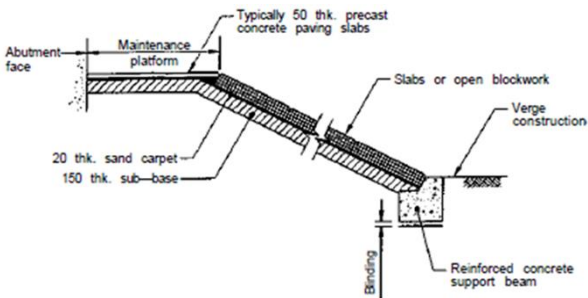
- Consider injury impact and likelihood for both a graded slope and a vertical face
- Vertical batter uses fences on the drop edge
- Slope material to be considered for slipperiness
- Consider access widths for mechanical lifters

Construction

- Use mechanical lifting for paving slabs,
- Consider use of [concrete canvas](#) for quickly laying a paved area that stays rough
- Move fencing away from slope edge, put fixings for others to use on the fence

Maintenance / Operations

- Use mechanical lifting for paving slabs



LINKS

- [HEi117 Mechanically operated post driver overturning](#)
- [HEi119 Paving slab RIDDOR incident](#)
- CIRIA C543 Bridge Detailing Guide

Actual Incidents – HE Safety Alerts

September 2019

Slab being held by worker fell onto foot of a co-worker who was re-bedding the lifted slab (HEi119)



Re-enactment of the incident



Suspected slab position on operative

September 2019

Post-puller overturned on 1:3 batter because of loose topsoil and uneven ground (HEi117)



Overturned plant on side slope

Examples of Significant Risks

Activity Affected	Construction – lifting slabs	Maintenance – Inspections	Construction – install fence
Hazard	Manual Handling	Fall from Height	Fall from Height or Slip
Persons Affected	Road worker - Paver	Road worker - Inspector	Road worker - Operator
Likelihood / Severity of Risk	L: Medium to High S: Medium	L: Medium S: High	L: Medium S: Medium to High



Please submit any feedback, examples of similar issues, or best practice to:
Chair of the PDWG Whole Life Design Task Group Andrew.Finch@Jacobs.com

LEAN	Material Reduction	Alternative Materials	Reduced Plant	Alternative Plant	Reduced Labour	Reduced Land	Reduced Transportation	Improved end user benefits	Reduced Activity Duration	Reduced Defects	Reduced Reportable Accidents
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