



# MANUAL HANDLING – LOW-LEVEL RETAINING STRUCTURES

WLD.001

## Description of Event

*A flat edge solution was designed as a low-level retaining structure without consideration for working area*

### Population at Risk

Construction and Maintenance Workers, Inspectors and Travelling Members of Public (MoP)

### Hazardous Activity and Residual Risk Description

- Construction of low-level retaining structure using flag on edge with restricted site access requires manual handling with an assessed residual risk of 'an almost certain' likelihood of extreme harm incurred.
- A flag on edge retaining structure has a shorter design life than other solutions, increased construction period and requires a shorter interval between inspections.

### Potential consequences of this event

- In 2021 HSE estimated that there were 40,000 workers suffering with musculoskeletal disorders.
- The musculoskeletal disorder incident rate is 1.8%.
- Extended period of TTM required leading to greater exposure to workers and public.

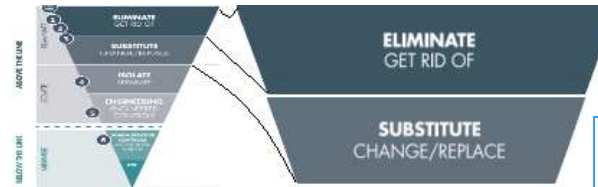
### Safety Hub Alert Database

- Sub-category 2 MoP TTM incursions has 8 alerts including 1 fatality.



Photo of flag on edge retaining structure

### Potential Mitigation Measures



#### Design

- Eliminate manual handling of materials by designing a pre-cast concrete panel solution that requires mechanical handling.

#### Construction

- Design temporary works for access and installation of precast panels to reduce TTM duration and reduce onsite manhours.

#### Maintenance / Operations

- Periodically assess safety and serviceability at a reduced frequency when precast panels are used.



Photo precast concrete panels

### Further Guidance and Reading

- [RtB 8](#) – Manual Handling
- [RtB 26](#) – Safety by Design
- [DMRB GD 304](#) – Designing health and safety into maintenance
- [INDG 143 Manual handling at work](#) – a brief guide
- [L23 Manual handling](#), Manual handling operations regulations 1992. Guidance on regulations.



Please send ideas for Whole Life Design safety shares to [wellbeing@nationalhighways.co.uk](mailto:wellbeing@nationalhighways.co.uk)

LEAN

Alternative  
Materials

Alternative  
Plant

Reduced  
Labour

Improved  
end user  
benefits

Reduced  
Activity  
Duration

Reduced  
Defects

Reduced  
Reportable  
Accidents