

Means and methods of Construction Revision

Key elements:

1. Preliminaries & Site establishment
2. OHS
3. Noise and Traffic Management
4. Demolition, Excavation and Retention System
5. Equipment
6. Formwork
7. Steel works
8. Service and Fit-out
9. Construction management
10. Case Study

2. OHS

- The primary duties of EMPLOYERS to EMPLOYEES(2016)

- Safe workplace
- Provide safe plant or systems of work
- Safety for handling, storage, use or transport of plant or substances
- Workplace under management and control maintained in a safe manner
- Provide adequate facilities at workplaces
- Provide information, training instruction or supervision to enable employees to work safely

Some basic requirements of legislative compliance

- Compliance looks like an orderly system in documentation and in practice and
- includes:
- An OHS Coordination plan that meets requirements of r. 335-337
- Have Safe work method statements (SWMS) for ALL work high risk work listed in r. 332, but also a (documented) safe system of work for all works on site
- Clean, tidy and organised site

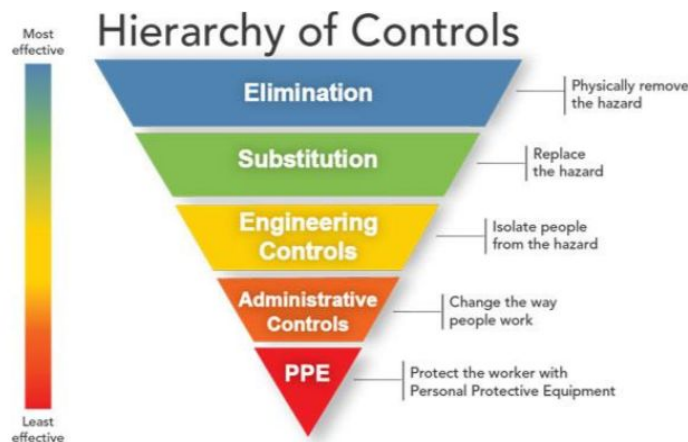
What is a hazard?

A source of potential harm. Some examples: U.V Radiation (sunlight), Gravity (falls), Mechanical (machinery), Psychosocial (Bullying, harassment, violence and fatigue)

What is a risk?

A risk is the likelihood and the degree of harm of the hazard coming to effect.

Hierarchy of control(2019)



3. Noise and Traffic Management

Noise Control Measures – Substitution(2016) (2017)

- Some equipment can be swapped for a quieter alternative
- It may be in the form of employing a different process (e.g. rolling vs. vibration compacting)
- Correctly sizing equipment so that the smallest piece of plant for a given job is used
- Might be as simple as finding a quieter make/model of the equipment

Noise Control Measures – Engineering Controls(2016) (2017) (2018)

- Retro-fitting existing equipment with damping materials, mufflers and enclosures
- Erecting barriers at the noise source
- Maintenance of existing equipment

Control Measures – Administrative Controls(2016)

- Shutting down noisy equipment when they are not needed, e.g. Idling trucks
- Move noisy activities such as site entrance for concrete trucks, farther away from residential areas
- Keep residents informed of what is being planned and done
- Potential Resident relocation

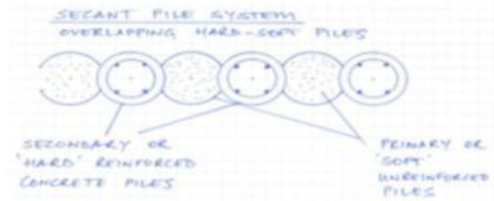
PURPOSE of Traffic Management measures:

- Warn traffic of works within the road reserve;
- Control the speed of passing traffic within and adjacent to the work area;
- Instruct & guide road users to a change in the road environment;
- Divert vehicles safely around the subject site;
- Ensure safety measure are in place to protect vulnerable road users (pedestrians/cyclists);
- Provide suitable access points for construction vehicles; and
- Ensures safety measures are in place to protect workers on the subject site.

DATA COLLATION For TMP development

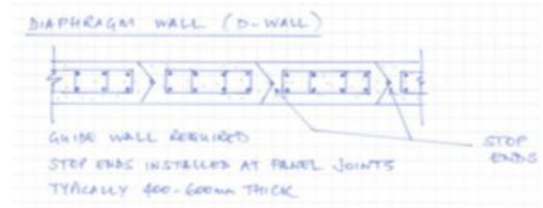
- Construction methodology;

Secant Hard-Soft Piles



Favourable Ground Conditions	Effectiveness as Water Seal	Advantages	Disadvantages
<p>Usually sandy soils – esp. where bulk level is below watertable</p> <p>Common in Port Melbourne, St. Kilda, Brighton, Sandringham & southern suburbs</p>	<p>Good – “secant” or overlap usually minimum of 120mm.</p> <p>Recommended to apply shotcrete facing to ensure “soft” piles don’t deteriorate over time. Inside face of soft piles can dry out & crack/crumble</p>	<p>Economical system for sandy soils where basement below watertable</p> <p><u>Guide wall ensures piles well aligned</u></p> <p>Can take individual “hard” piles deeper to cater for high point loads on perimeter</p>	<p><u>Guide wall costs.</u></p> <p><u>Difficult to maintain pile overlap over great depth</u> eg. more than 2 level basement</p> <p><u>Not suitable where deep fill material with boulders/obstruction</u></p> <p>Requires secondary finish of shotcreting to improve aesthetics/durability</p>

Diaphragm Walls (D-Wall)



Favourable Ground Conditions	Effectiveness as Water Seal	Advantages	Disadvantages
<p>Any ground type but normally sandy soils – always where bulk level is below watertable</p> <p>Common in Port Melbourne, St. Kilda, Southbank – Yarra delta area</p>	<p>Very Good – highest level for in situ wall type</p> <p>Water stops at panel to panel interface improve water tightness</p>	<p><u>Usually forms final wall</u></p> <p><u>Guide wall ensures panels well aligned to great depth</u></p> <p><u>Can construct hard-up on boundary against neighbouring structures</u></p> <p><u>May be keyed into rock</u></p> <p><u>No additional facing required</u></p>	<p><u>Guide wall costs.</u></p> <p><u>Not suitable where deep fill material with boulders/obstructions</u></p> <p>Most expensive cast in situ wall system. May require trimming/chiselling of lumps on exposed face</p>