

Evaluation of Earth Control Measures Submission Drawings

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COUNT**

Background

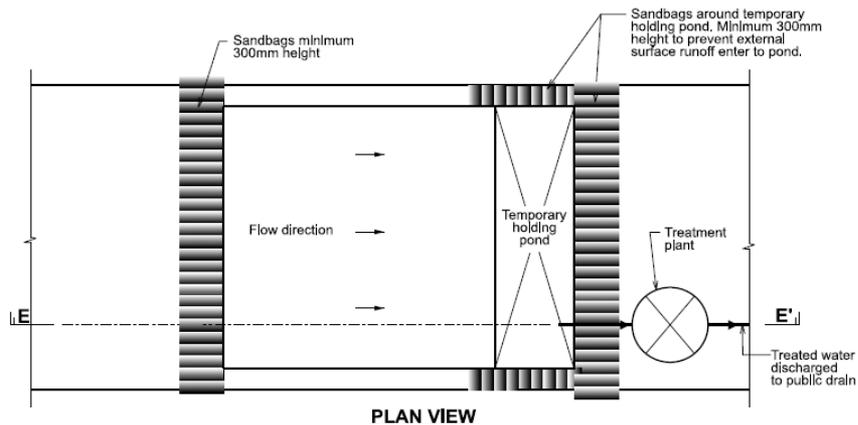
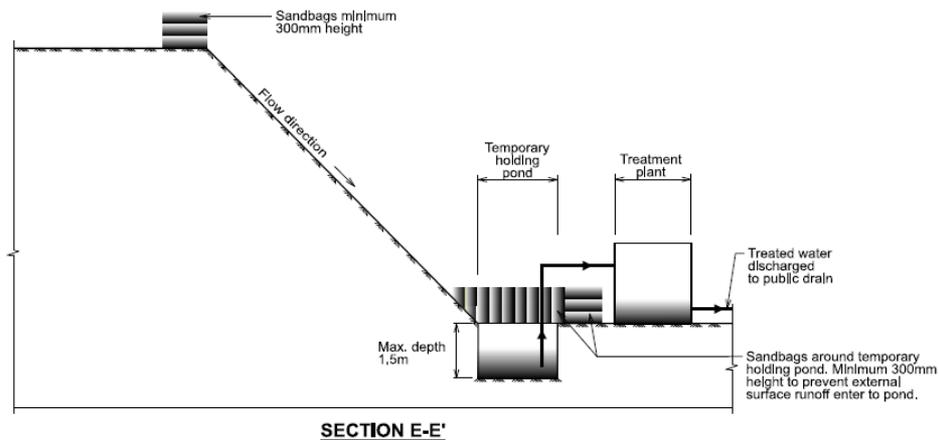


Background

- The earth control measures (ECM) are for the management of soil erosions, containment and treatment of silty discharges due to the impact of rainwater.
- PUB receives more than 1,500 drawing submissions per year seeking approval for construction works requiring these measures.
- The evaluation process requires an experienced eye to manually inspect key design elements, making it labour intensive.

Challenge Statement

- How might we reduce the time spent on the evaluation of Earth Control Measures submission drawings and accurately identify the lapses?

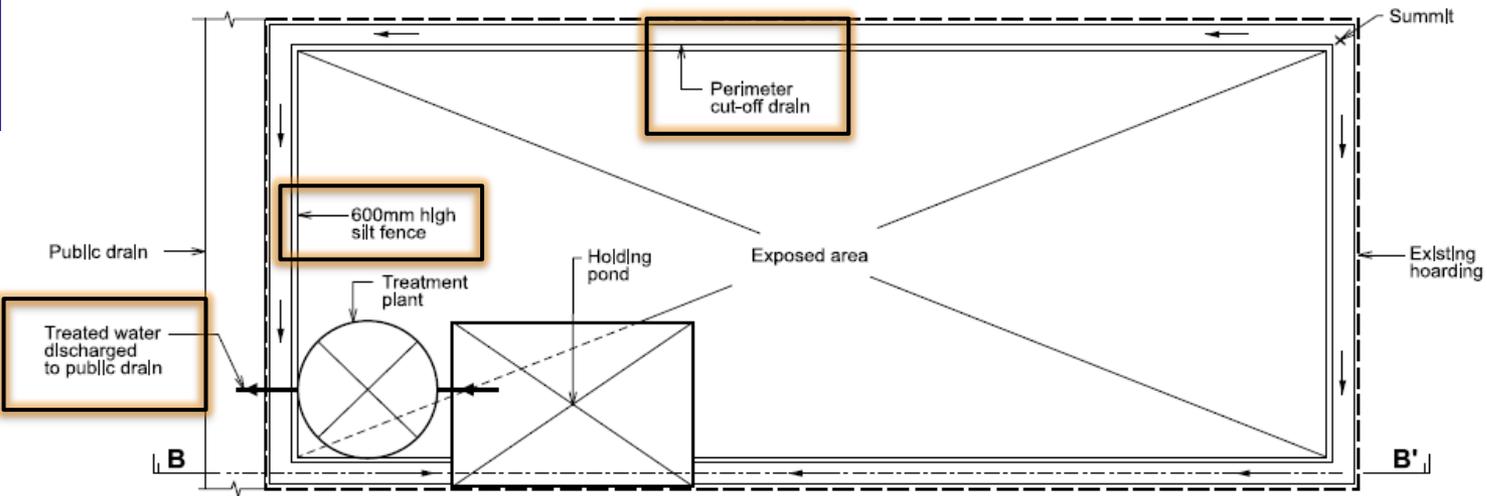


Key Design Elements	
a.	Treatment plant
b.	Sandbag minimum 300mm around temporary holding pond to prevent external surface runoff enter to holding pond
c.	Holding pond (maximum depth 1.5m, if > 1.5m depth ERSS is required)
d.	Discharge point to public drain

Opportunity Areas and Key Considerations

- Solutions that:
 - Use machine learning or artificial intelligence to pinpoint and identify requirement lapses that require correcting.
 - Can identify if critical requirements are met based on annotations/text within drawings.
- Previous attempts to use Building Information Modelling (BIM) methods to review ECM were deemed not appropriate.
 - Industry is not ready to transition to BIM, which consumes complex 3D models of civil structures.

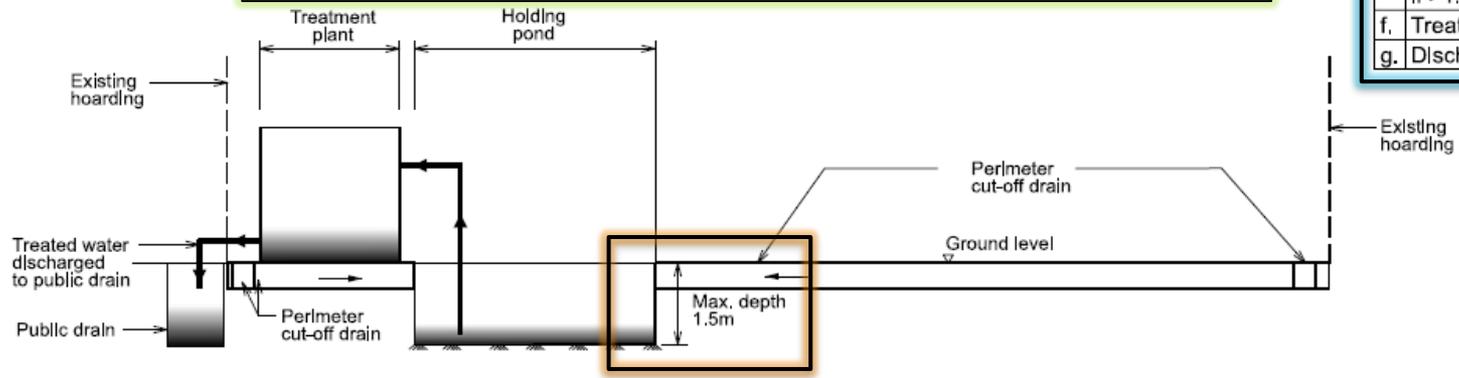
Opportunity Areas and Key Considerations



PLAN VIEW

Solution to identify key design elements and determine if they are appropriate and adequate.

Key Design Elements	
a.	Hoarding with sealed bottom
b.	Perimeter cut-off drain
c.	Perimeter silt fence
d.	Intermediate silt trap (optional)
e.	Holding pond (maximum depth 1.5m, if >1.5m depth ERSS is required)
f.	Treatment plant
g.	Discharge point to public drain



LONGITUDINAL SECTION B-B'

Key Challenges

- The solution must:
 - Be operable from the stand-alone device or a private cloud, separated from the Internet.
 - Be able to imbibe a range of file types, including PDF documents, scanned image files, 2D CAD drawing files, Microsoft Word Doc files, etc.
 - Be able to decipher the different drawing formats adopted by different contractors.
 - Neither increase the cost to the construction industry nor significantly complicate the process and level of detail required for submissions.

Thank You

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