

Options for Improving Access to the Harbour - some “Blue Sky” Thinking

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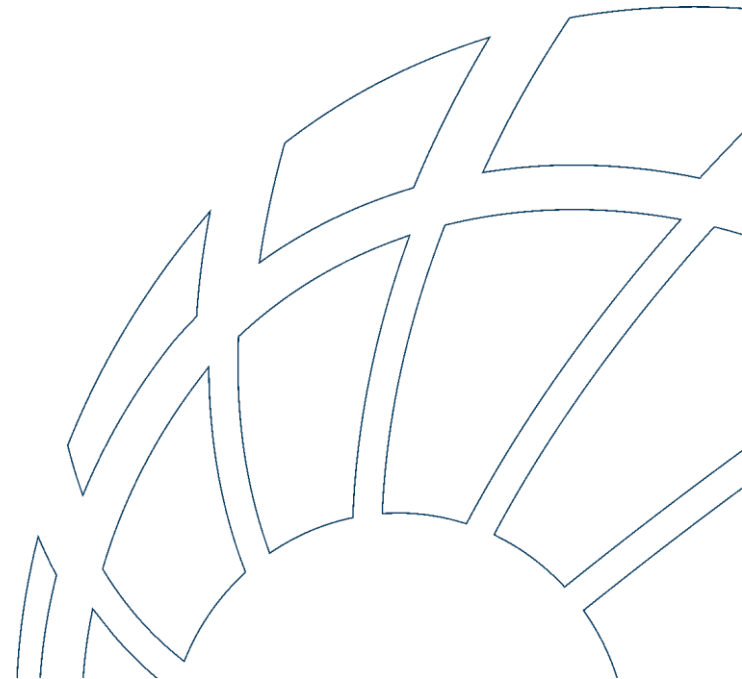
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3) Ranking of Options

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Harbourfront Access Challenges

- Hong Kong possesses a significant harbor resource – which has traditionally been exploited by large scale commercial shipping and facilities.
- There is limited accessibility for public or small scale commercial concerns due to the limited Public Landing Steps (PLS).
- Vertical seawalls dominate, and developing PLS within existing blockwork structures entails expensive marine civil engineering works
- Is there the opportunity to swap “construction” with “installation” and add small scale Public Landings onto these (dominantly vertical) seawalls?



Protection of Harbour Ordinance

- The Protection of Harbour Ordinance (PHO) was set in place to restrict the Government's planned large scale reclamation. However, since a series of Court rulings, concerns over further challenge under the PHO have stopped any attempts at any useful small scale reclamation (or pontoons or similar).
- Recognising that this was risking the sterilisation of the Harbour the 2011 paper on "*Proportionality principle for harbor reclamation*" by the Society for the Protection of the Harbour sought to identify that:

The greater the adverse impact of the reclamation on the harbour, the greater must be the justification; accordingly having established a public need, in deciding if such need overrides the importance of the harbour, the prime consideration is whether any enrichment of the public enjoyment of the harbour and any enhancement of the environmental, social and economic value of the harbour as a result of the reclamation would justify the loss and damage consequentially caused to the harbour.

- It sees no constraint to small scale works (such as Public Landings) being added to the shoreline provided they meet a need, and the essential value and nature of the harbour is protected; however, this has yet to be tested in court.

Bringing the Harbour to the People

- The Harbour is best “brought to the people” and enjoyed if you can actually get on it!
- A greater provision of landing steps (particularly in the harbour waters east of the Tsim Sha Tsui – Central Star Ferry route) would permit greater recreational and commercial use (i.e water taxis) of the sheltered waters
- Increased social and economic activity in the harbour would ensure that the activity that makes the area interesting is retained.
- This needs more options for access - it needs more new Public Landings!



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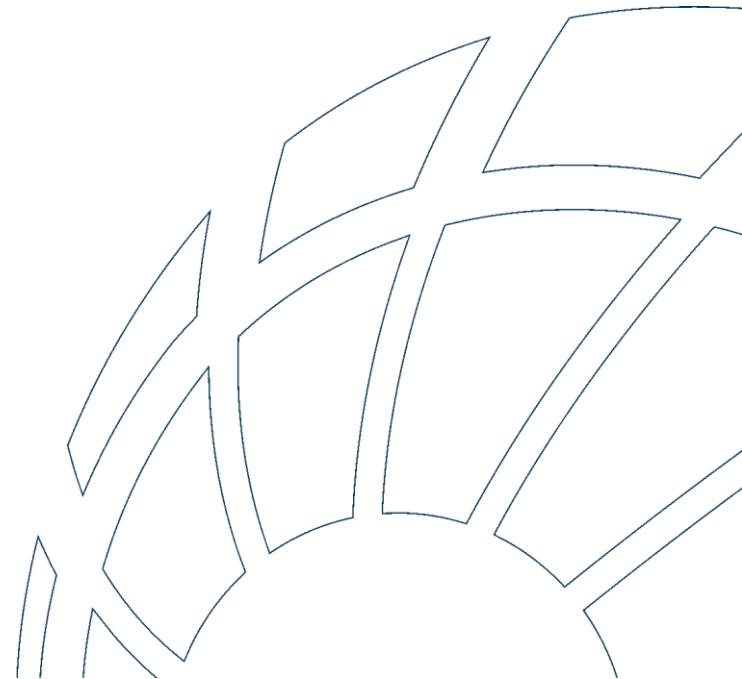
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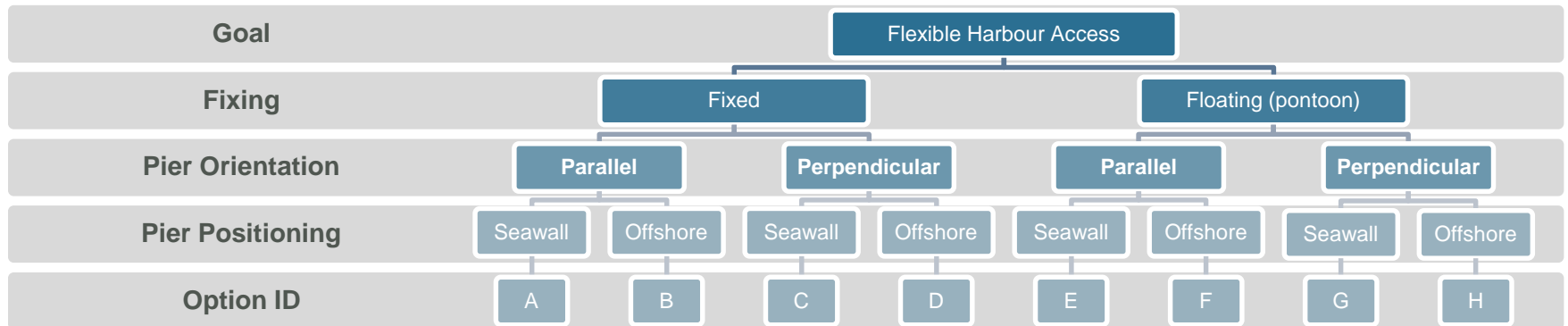
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Option Generation

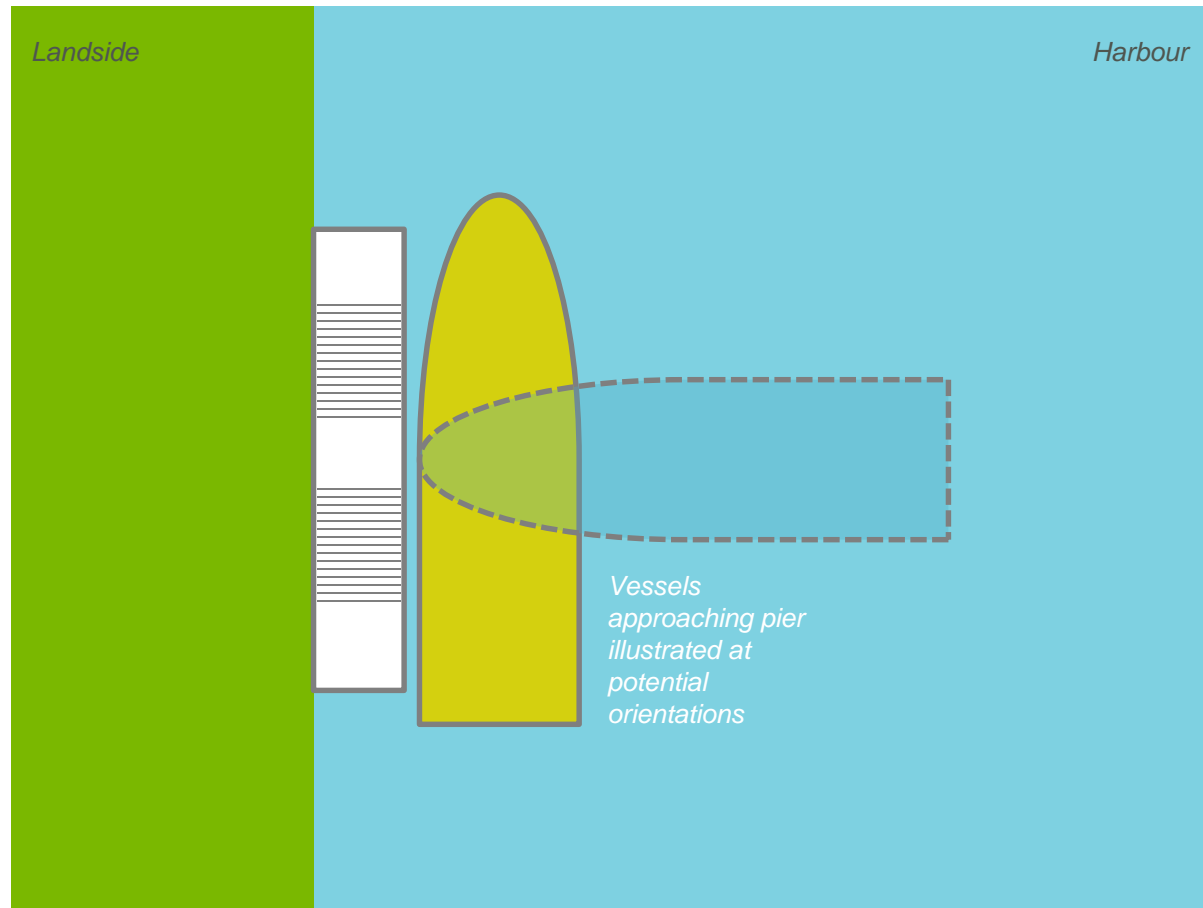
A series of Public Landing designs can be generated by reviewing the key options available for fixing, orientating and positioning these structures.

This has been done, by an initial “mechanical” development of alternatives, favoured options can then be refined.



The range of options that may be created are illustrated in the following pages, based on the mixing of the key layout elements presented above:

Option A – Fixed, Parallel, @ Seawall

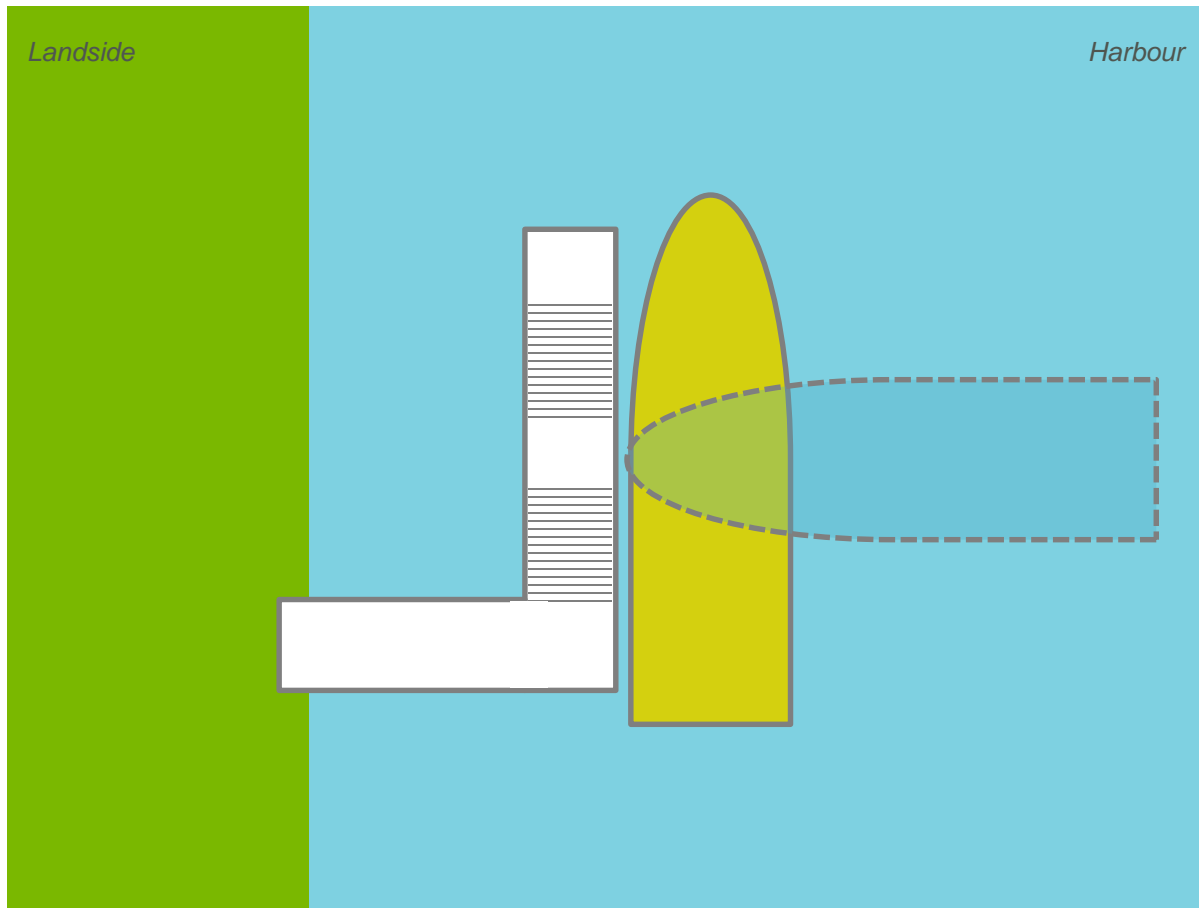


A box structure would be “hung” off the existing seawall via a series of bolted connections into the blockwork.

Landing steps (similar to the existing PLS arrangement) would be included.

The box may be built from steel or aluminium and creates a small protrusion of the seawall.

Option B – Fixed, Parallel, Offshore

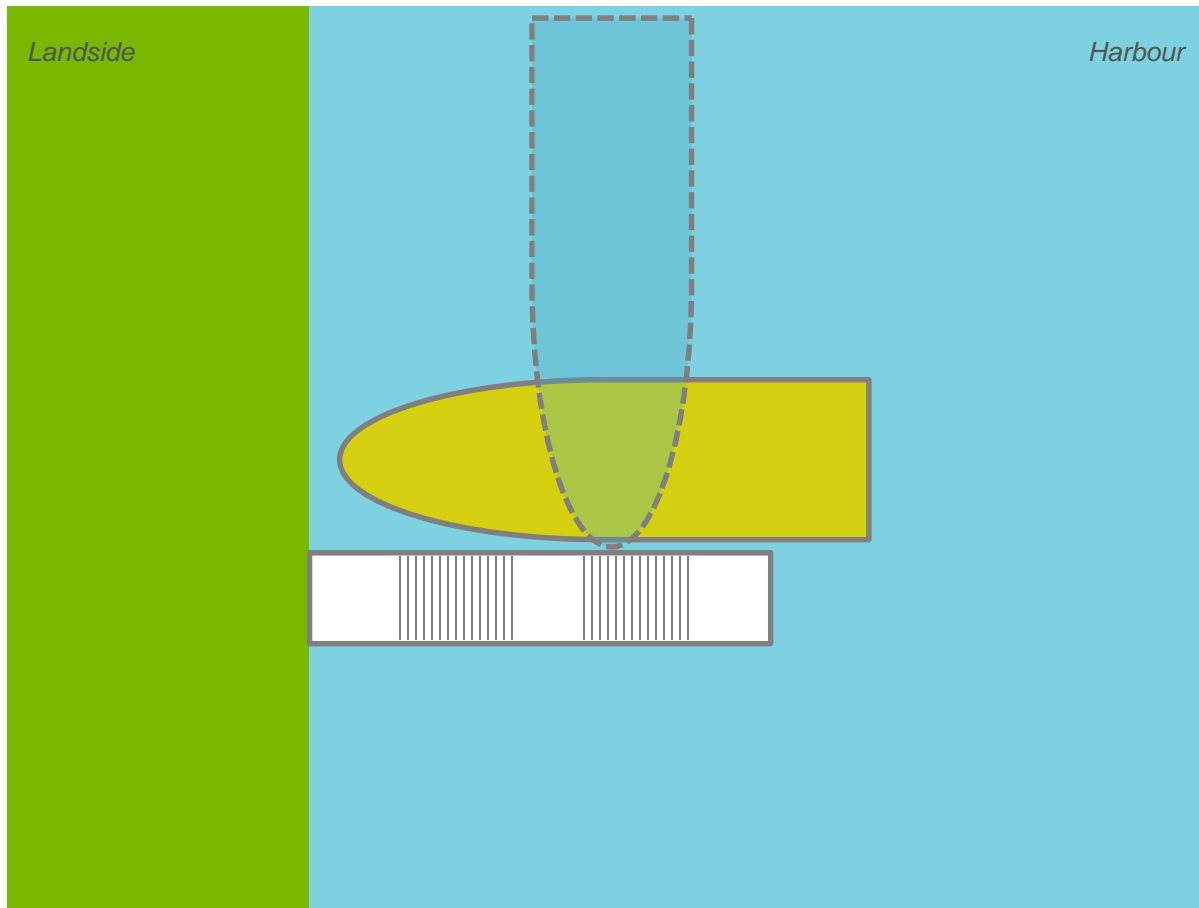


A conventional pier structure would be developed offshore the existing seawall.

It is anticipated that a typical pile & deck structure may be used.

Prefabricated deck and step elements could be adopted to minimise costs.

Option C – Fixed, Perpendicular, @ Seawall

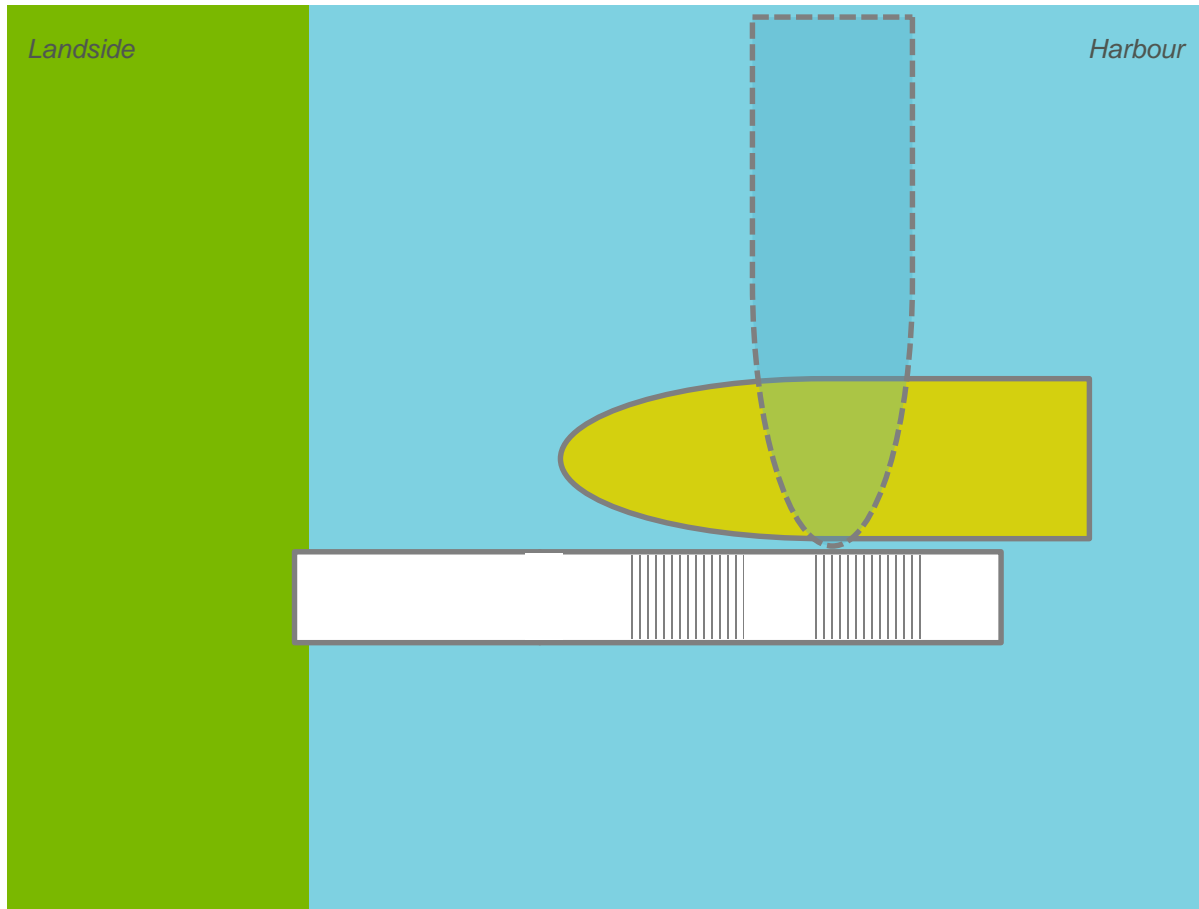


A conventional finger pier structure would be developed out from the seawall

Pile & deck or blockwork structure could be used, although the latter would require extensive ground improvement.

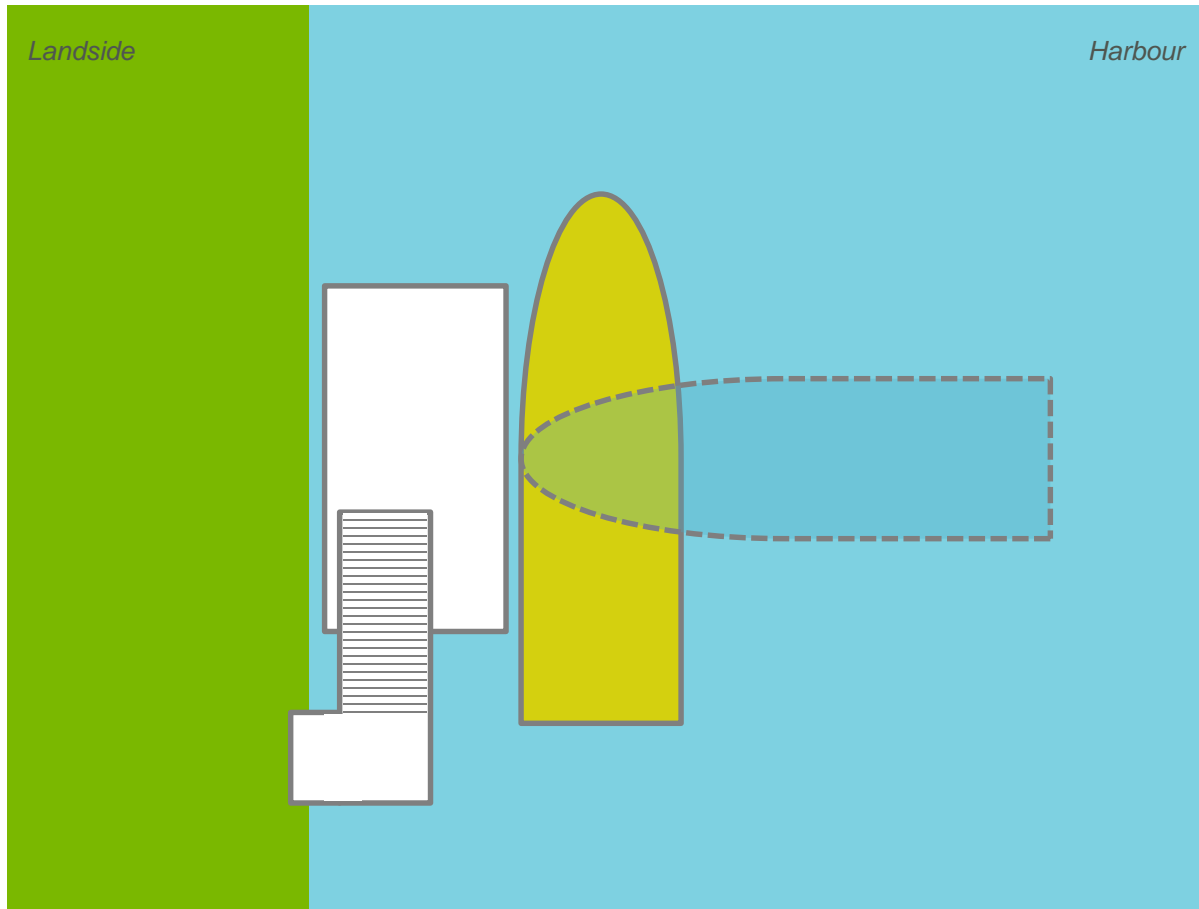
Prefabricated deck and step elements may best be used to minimise costs.

Option D – Fixed, Perpendicular, Offshore



This is essentially a seaward extension of Option C that provides greater navigable space.

Option E – Pontoon, Parallel, @ Seawall

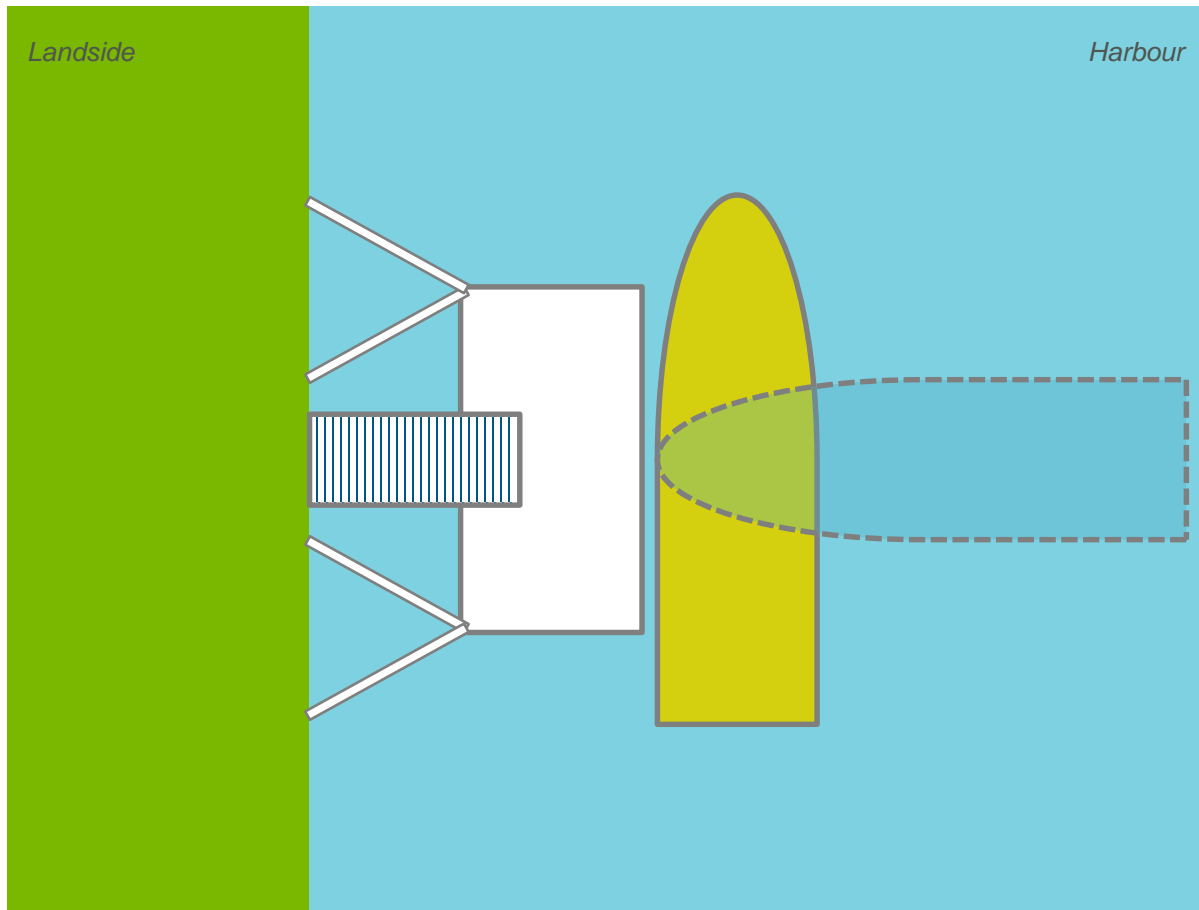


A conventional pontoon would be installed and connected to the seawall via guides (such as “H” beams) that allow it to move with the tide.

A short ramp/steps would be required to access the pontoon.

The form of the pontoon would be designed to minimise wave motions.

Option F – Pontoon, Parallel, Offshore

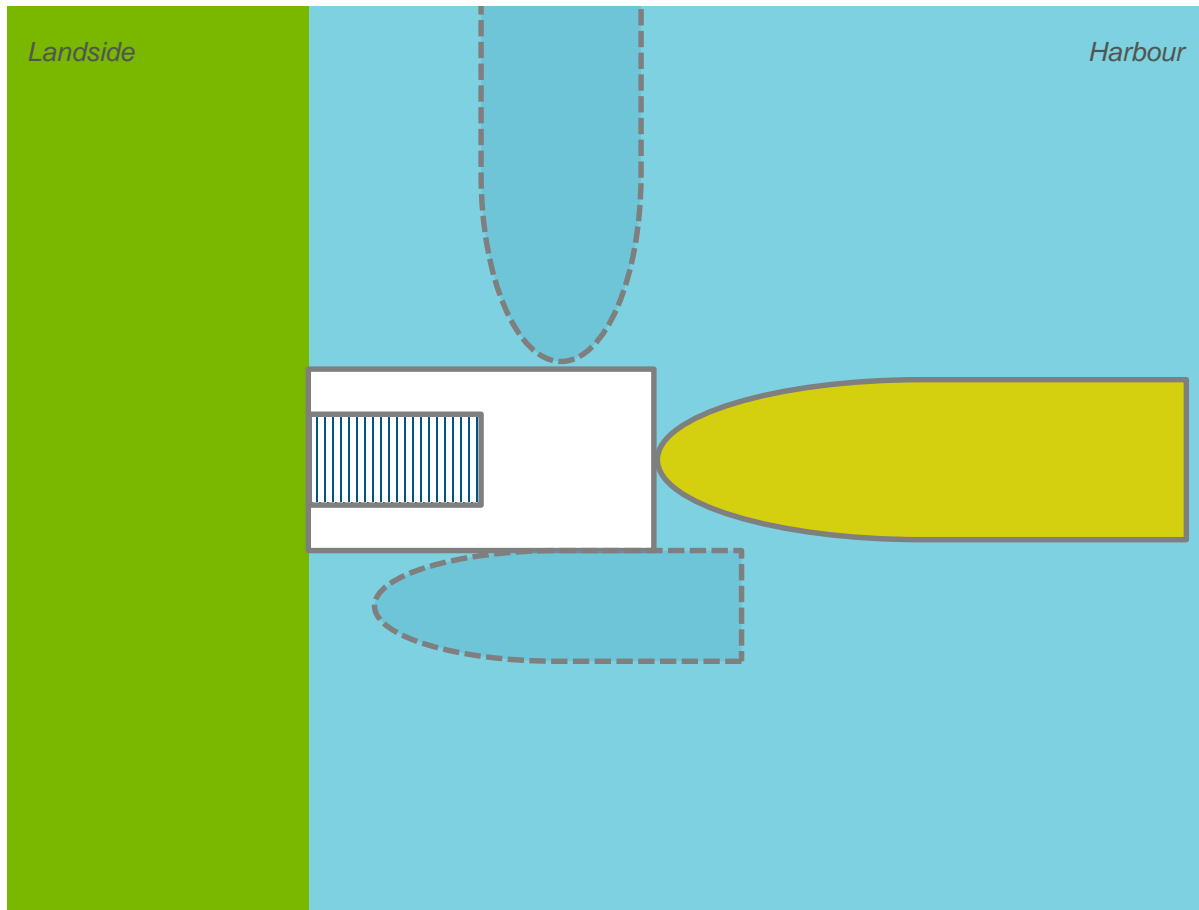


A conventional pontoon would be installed and connected to the seawall via wishbone supports that allow it to move with the tide.

A short ramp/steps would be required to access the pontoon.

The form of the pontoon would be designed to minimise wave motions.

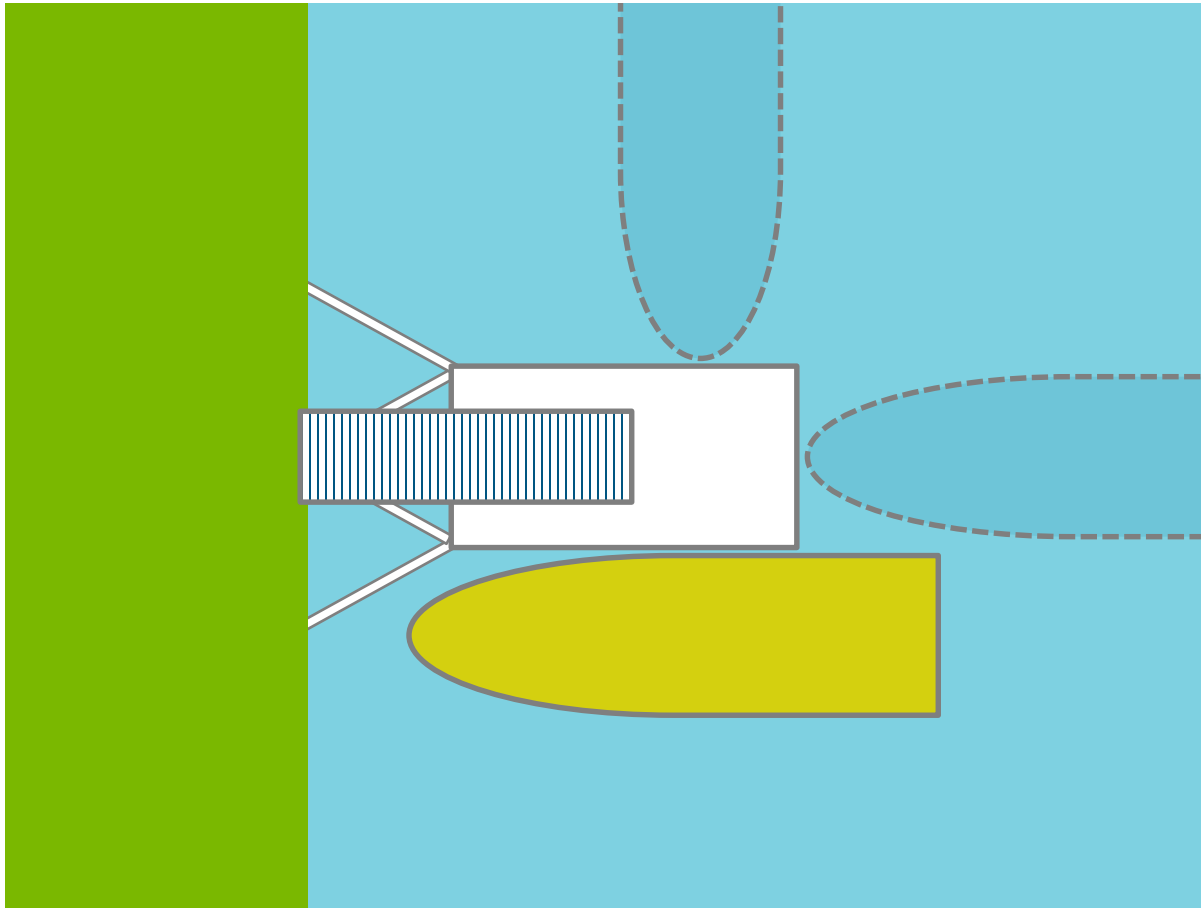
Option G – Pontoon, Perpendicular, @ Seawall



This is essentially a seaward a re-orientation of Option E.

It can be seen that it restricts alongside berthing to small vessels only, unless the pontoon is extended.

Option H – Pontoon, Perpendicular, Offshore



This is an improved Option H, where the relocation of the pontoon seaward improves access to the structure.

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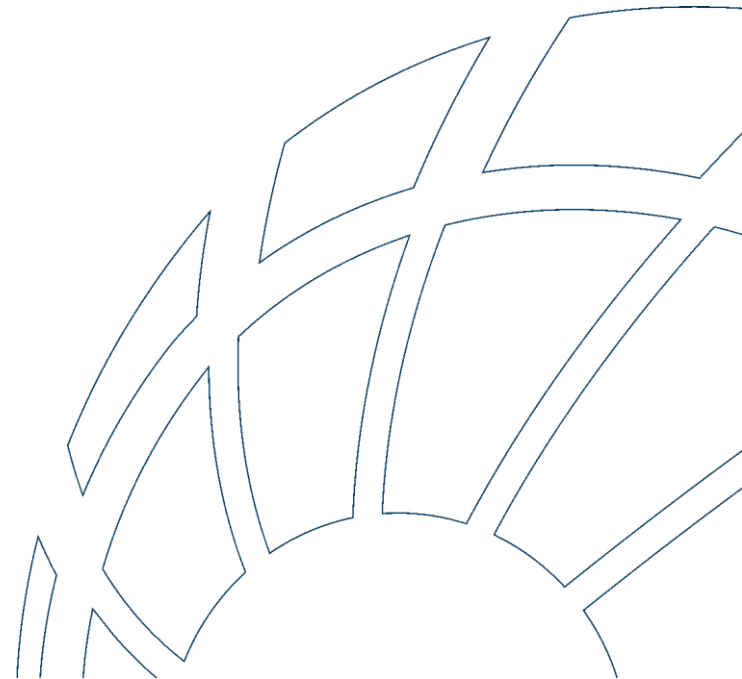
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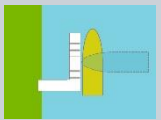
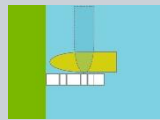
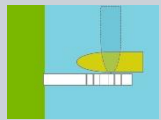
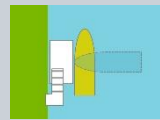
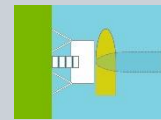
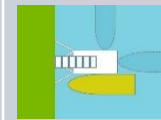






































Criteria

The following criteria may be adopted to conduct a preliminary screening:

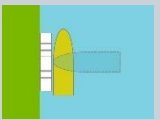
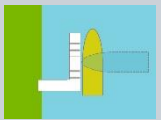
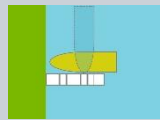
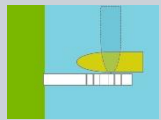
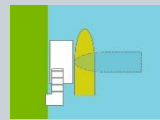
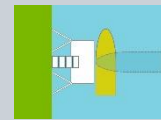
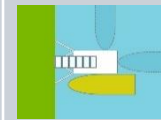






- **Vessel Access** – Options that require difficult or potentially hazardous vessel manoeuvres (bow stern in to seawall) will be marked down
- **Transfer Comfort** – Waves (typically from marine traffic) may act parallel to the seawall. Options that require the vessels to berth parallel and close to the seawall maximise vessel roll and will be marked lowest.
- **Extension** – Options that extend into the harbour are least favoured due to potential marine traffic impacts
- **Reclamation/Permanency** - Options that provide larger permanent structures will be adversely scored.
- **Cost/Installation Speed** – Highly qualitative at this stage, but larger fixed construction options will have higher costs and longer construction durations

Ranking

Option	A	B	C	D	E	F	G	H
								
Vessel Access								
Transfer Comfort								
Extension								
Permanency								
Cost								

Note: Full circle represents most preferred, while empty circle represents least preferred.

Shortlisting

Option	A	B	C	D	E	F	G	H				
												
Vessel Access												
Transfer Comfort		<p><i>This concept would be applied for vertical seawalls only.</i></p>						<p><i>This concept may have value for both vertical and sloping seawalls</i></p>				
Extension												
Permanency												
Cost												

Shortlisting assumes criteria have similar importance.

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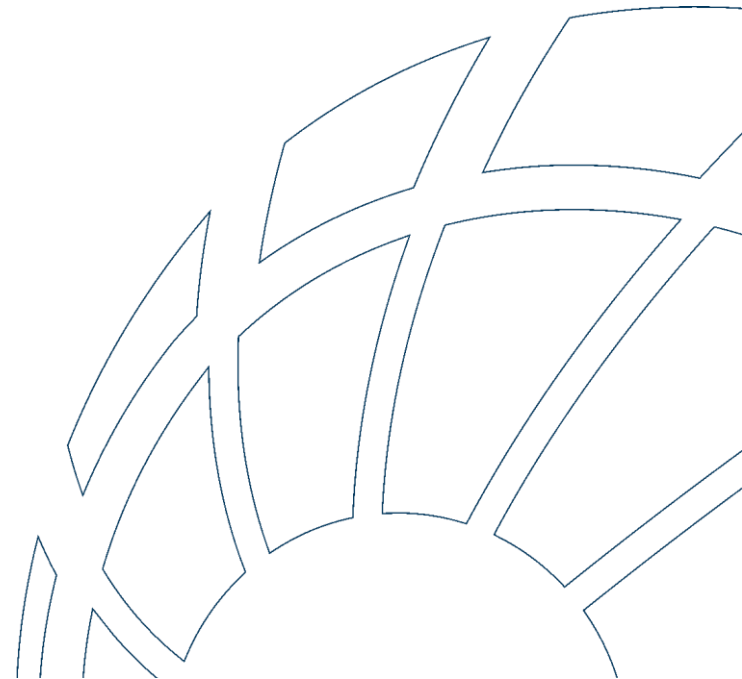
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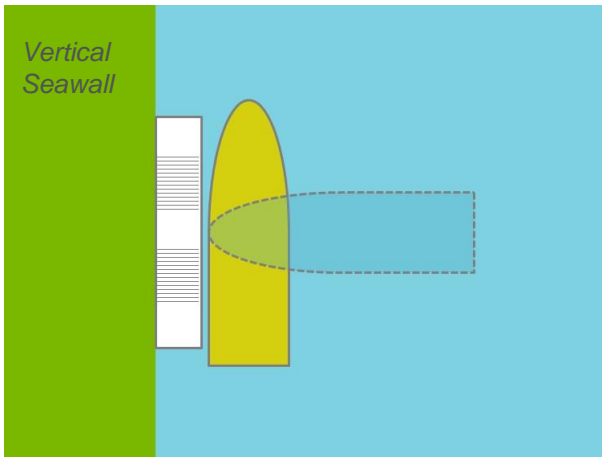
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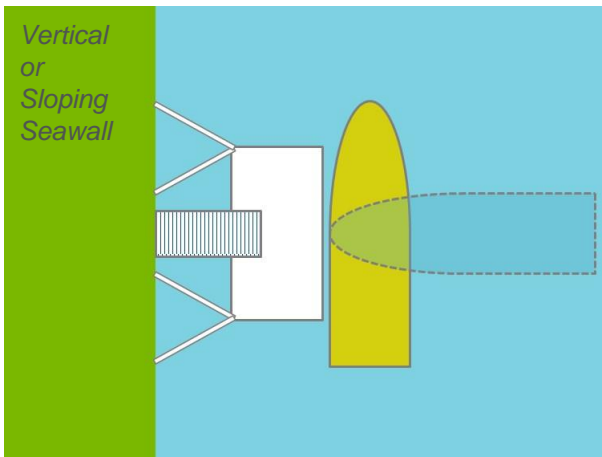
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Shortlisted Candidates

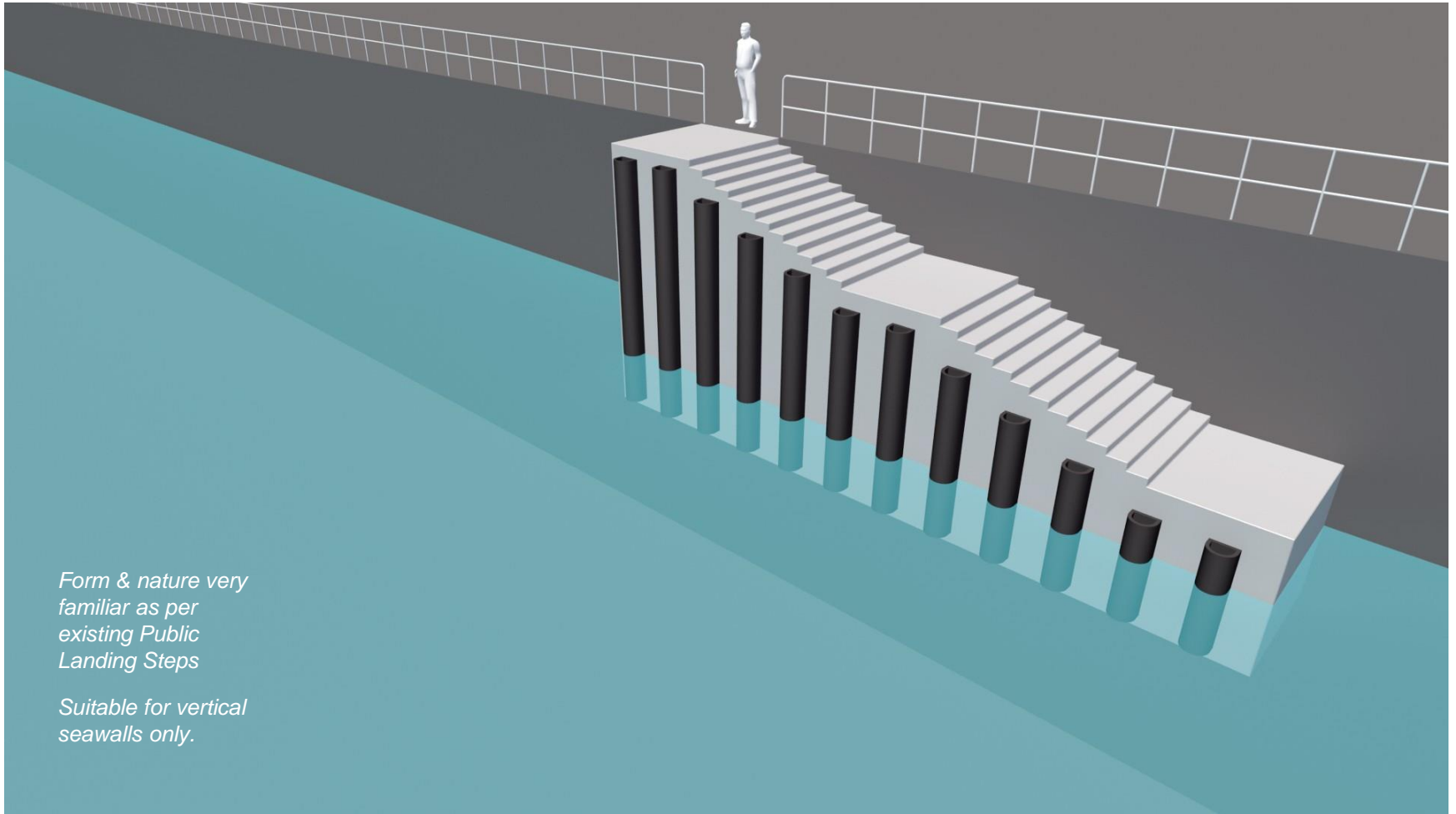


Fixed (12.2m x 2.4m, as per 40' ISO Container) - This “box extension” projects the familiar Public Landing Steps seaward from the existing wall. Mountings could be predrilled and the PLS installed by standard derrick barge crane. Design issues include materials, corrosion protection and the ballasting of the steps to ensure they did not move in storms; otherwise this is a simple solid structure.



Pontoon (10m x 5m?) – A pontoon structure (potentially developed with “semi-submersible” float elements for maximum stability) would be set off the seawall with “wishbone” supports ensuring position maintained and berthing loads transferred. Marine gangway connected to shore with self levelling steps. The design focus will be on developing robust connections for reliable ops’.

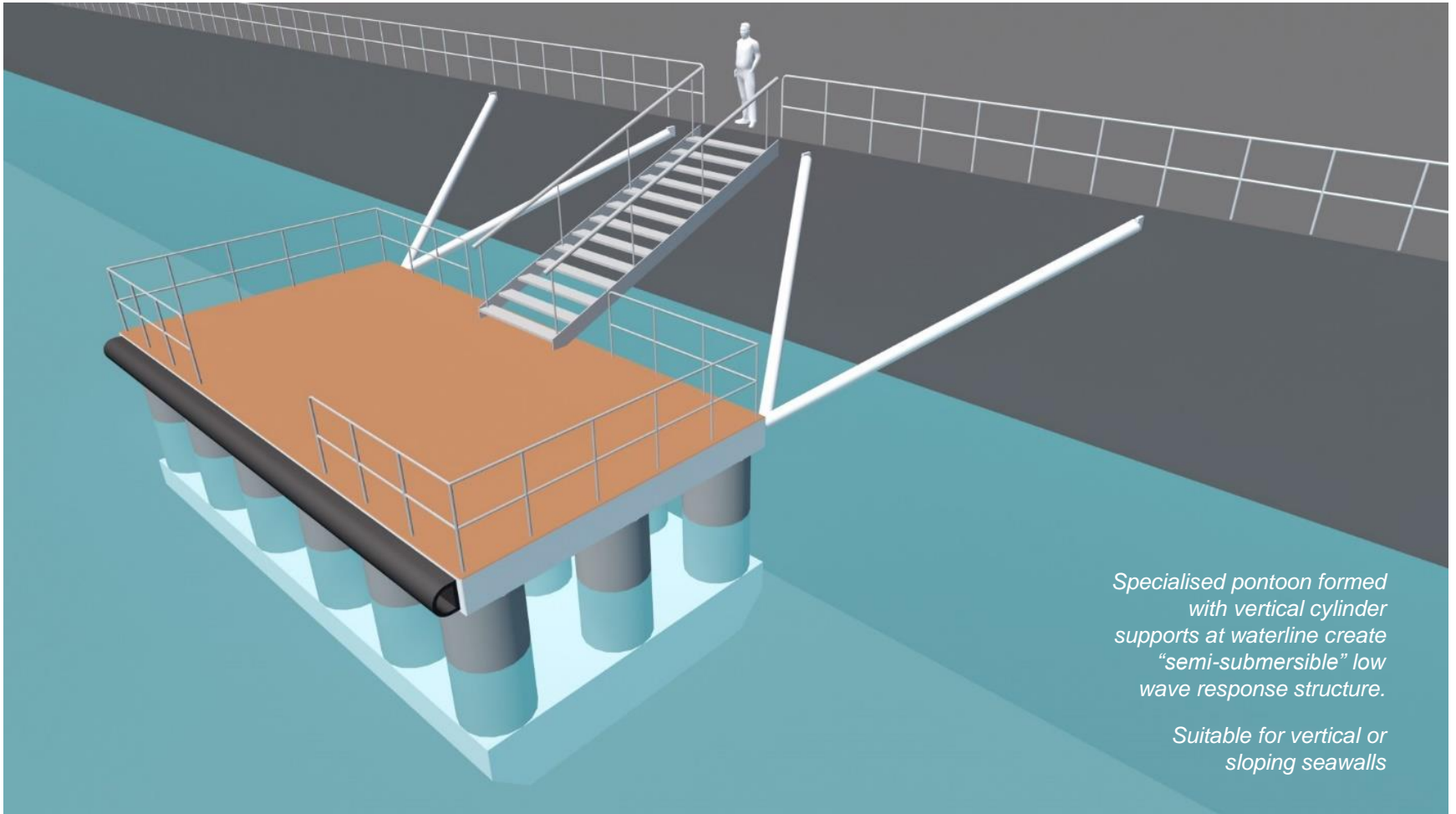
Illustration of Fixed Concept



Form & nature very familiar as per existing Public Landing Steps

Suitable for vertical seawalls only.

Illustration of Pontoon Concept



Specialised pontoon formed with vertical cylinder supports at waterline create "semi-submersible" low wave response structure.

Suitable for vertical or sloping seawalls

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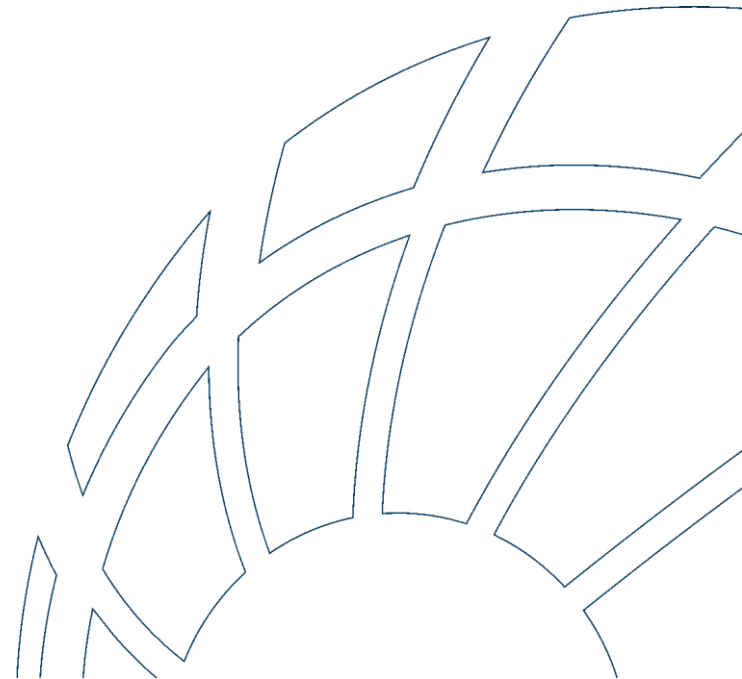
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Summary

- The Harbour is most valuable when it is most accessible, but current untested constraints restrict the development of more Public Landings which could permit greater water taxi and recreational activity.
- A structured design development exercise has been undertaken to review options for creating small scale Public Landings
- A Fixed and Pontoon concept have been developed, which could be implemented without technical impediments.
- These options are presented to assist stakeholders identify the opportunities that exist to enrich the Harbourfront.



Thank You

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