How?

**What?**
What is the best balance between the three layers of multi-layer safety that enhance the quality of the built environment and physical water safety?

1. **What is imaginable in terms of interventions?**
   - How do you make a proper comparative assessment?
   - What is the specific context of the proposed measures, and how can they be translated to several alternatives for the context of the southern Flevopolder?

2. **What is possible at this test location?**
   - What is the specific context of the proposed interventions, and how can they be translated to several alternatives for the context of the southern Flevopolder?

3. **What is desirable?** How do you make a proper comparative assessment?
   - What criteria and indicators can be used to balance the different measures? How to operationalize these criteria?
   - To what extent can different types of interventions be distinguished?
   - Which interventions in these factors can reduce flood risk?

**Why?**

In the Randstad and the major cities in the Netherlands still remains a task of densification, mostly in areas with a high flood risk.

Special example of this are the plans for the Schiphol Airport Area. A choice for new dwellings for a growth to 3.5 million residents and uses new plans for the future is a deep political discussion or these water safety ambitions. From another type of multi-layer safety (MLS) might provide more integral solutions than the mere birds with one stone.

Goal of this graduation project is to develop a framework for comparative assessment to help apply multi-layer safety, with the focus on spatial interventions, in areas with a major development task.

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**How?**

1. **0-alternative | continuing current practice**
   - 1.0 Prevention
   - 2.0 Impact reduction (by sustainable spatial planning)
   - 3.0 Disaster mitigation

2. **Alternative 1 | compartmentalization, superdike & water storage**
   - A multi-criteria analysis will indicate how the different proposed alternatives can be ranked against each other in terms of sustainability, flexibility, spatial quality, governance, feasibility, and policy. This will provide insights regarding previous steps, and eventually regarding the best balance between the three layers.

3. **Alternative 2 | Flood-proofing vulnerable & vital objects, evacuate**
   - A multi-criteria analysis will indicate how the different proposed alternatives can be ranked against each other in terms of sustainability, flexibility, spatial quality, governance, feasibility, and policy. This will provide insights regarding previous steps, and eventually regarding the best balance between the three layers.

**So...**

- Choosing the most suitable balance between the three layers MLS will always be a human consideration of the different aspects of the framework, based on case specific circumstances, there is no rule of thumb.
- For this framework,
  - Alternatives might cost a bit more, but are indubitably attractive, effective, and also sustainable. It means an upgrade of the current design to a much more pleasant and safer living environment.
  - Alternatives are less expensive, also potentially provides opportunities for enhancing spatial quality and flexibility, but is difficult to implement in areas of government flood risk and at scale.

Imitating the process:
- Making a proper comparative assessment can be done by a combination between a scenario approach with different alternatives and a framework for comparative assessment on multiple criteria.
- Strategic of the new layer. Taking into account a scenario approach to work from layer 2 and layer 3 automatically integrated because all possible interventions are considered. This is contrast to the common cost engineering approach, in which only layer 1 is considered for the necessary.