





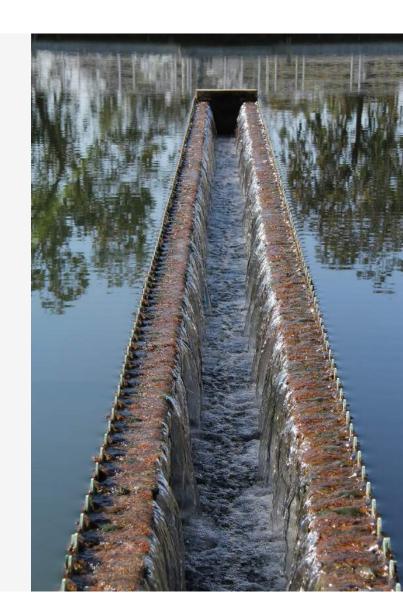
## Content

Hydrologic consultancy, design and construct

Project examples

How to?

Working across borders



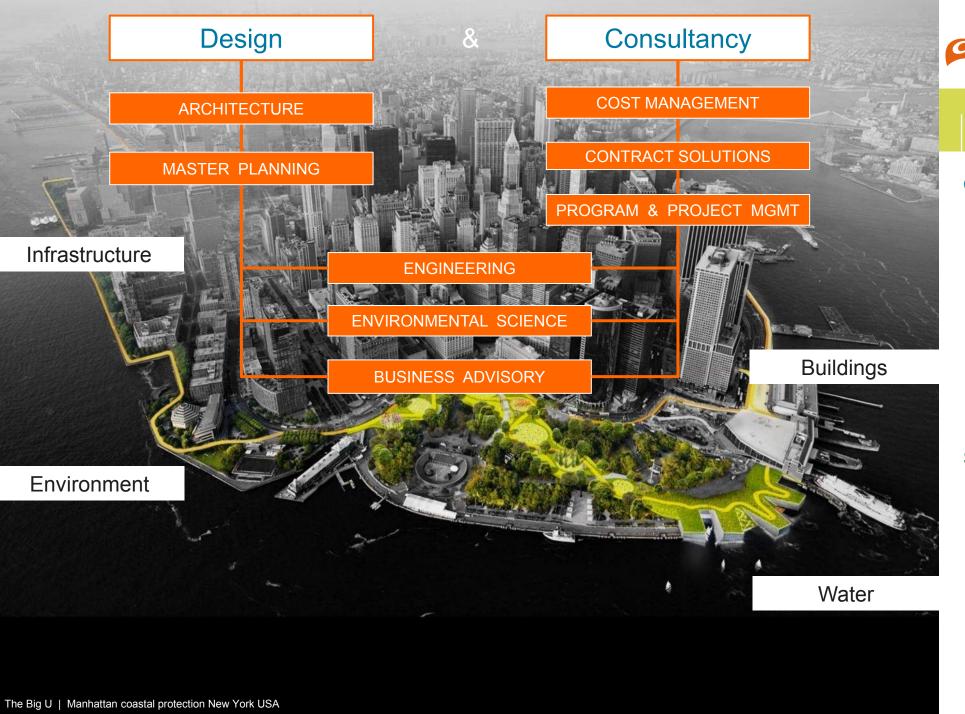


Hydrologic consultancy, design and construct

Water projects and studies

- Water quality improvement studies
- Monitoring improvement studies
- Groundwater management capacity development projects
- Saltwater intrusion in coastal regions
- Assessment of drinking water treatment facilities
- Economic analyses within river basin management plans
- Water efficiency aspects projects
- Flood management plans capacity improvement studies
- Dutch Risk Reduction Team (DRR): Mexico, Panama, Costa Rica, Uruguay, Myanmar, Guyana, Servië en Argentinië



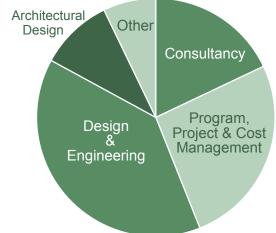




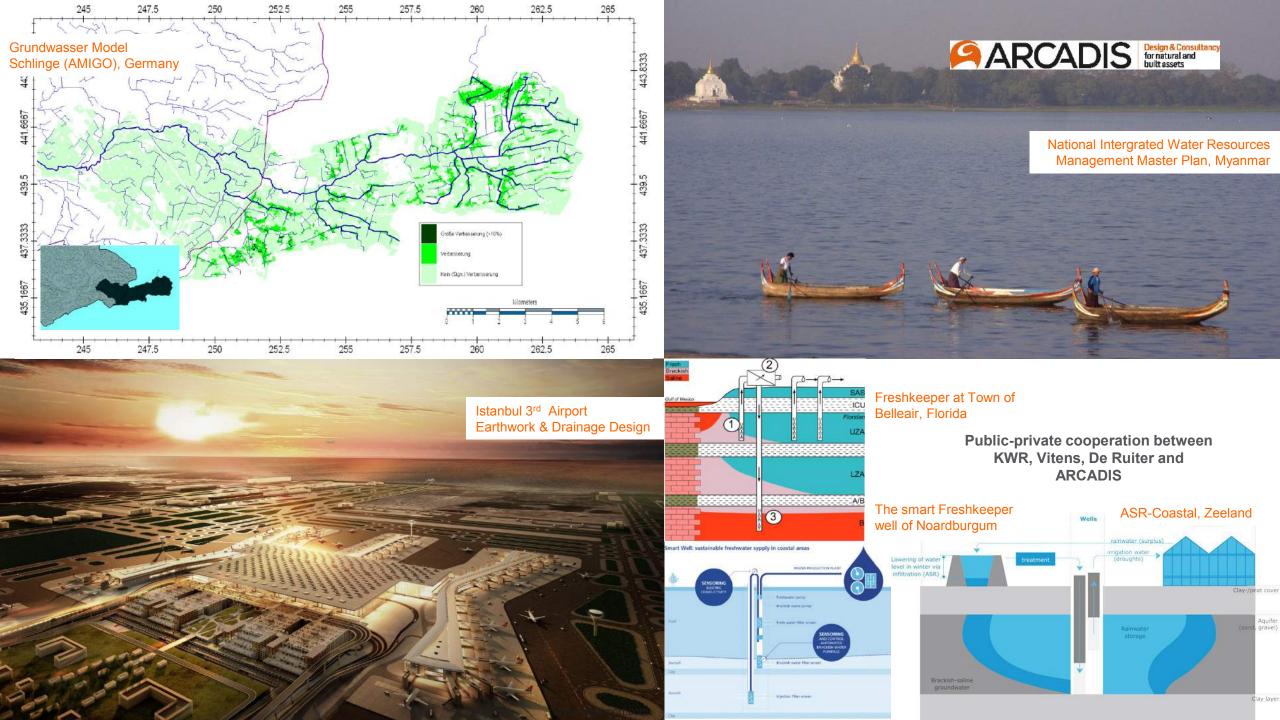
# Design & Consultancy for natural and built assets



#### Services

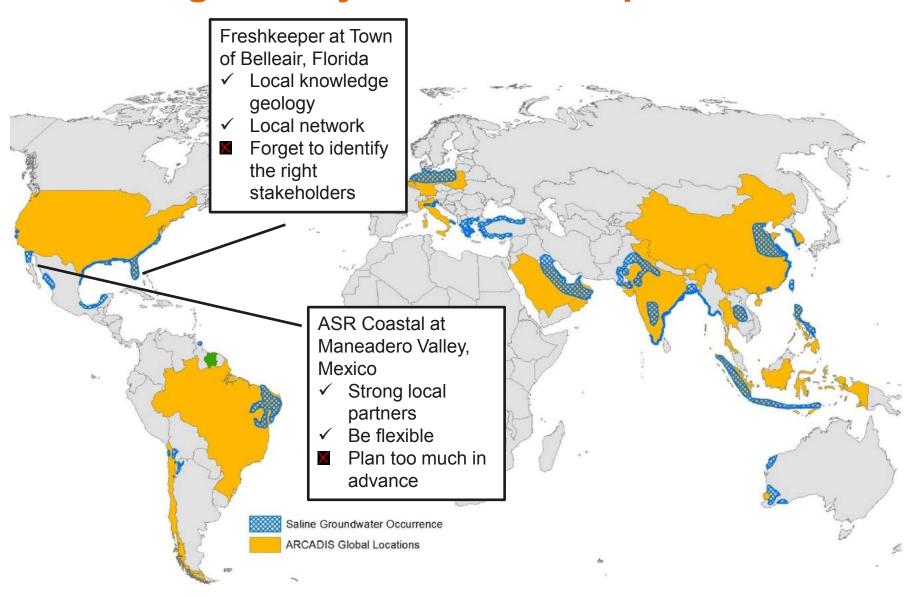






### Increasing salinity a world wide problem KWR ARCADIS Of the problem Increasing salinity a world wide problem KWR ARCADIS Of the problem of th





1.1 billion people live in areas with groundwater salinity at shallow and intermediate depths

Covering 16% of total land area on earth

#### Affecting:

- >500 drinking water companies have to face these issues in the next decades
- 30% agriculture
- 10% industry



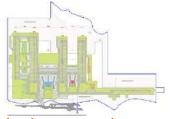
**Earthwork & Drainage Design** 

Istanbul 3<sup>rd</sup> Airport

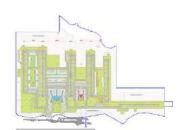


Main objective of the drainage design is to protect the embankments from groundwater and surface water.





In the original drainage design a maximum flux/discharge of 1 mm/d of groundwater is assumed in the airport area for the sub base drainage layer.



200 MILLION PASSENGER CAPACITY **6 DISTANCED** PARALLEL RUNWAY 1.3 MILLION M<sup>2</sup> 90 MILLION PASSENGER

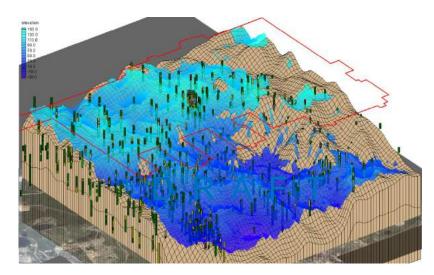


www.iagairport.com

The research objective of the groundwater study is to validate the assumed groundwater discharge (seepage) towards the planned working plateaus and drainage design.









## Modelling guidelines

Choosing the suitable tools for every stage of the project

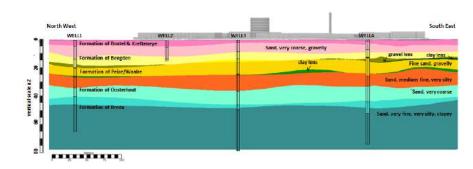
Start with a simple (conceptual) model translation

Choose the most suited model

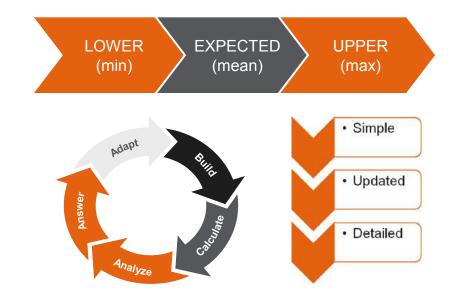
Bandwidths answer a lot of questions!

Adapt the conceptual model according to new findings

Adapt the numerical model according to the updated CSM



"The purpose of models is not to fit the data but to sharpen the questions" - Samuel Karlin





### How to

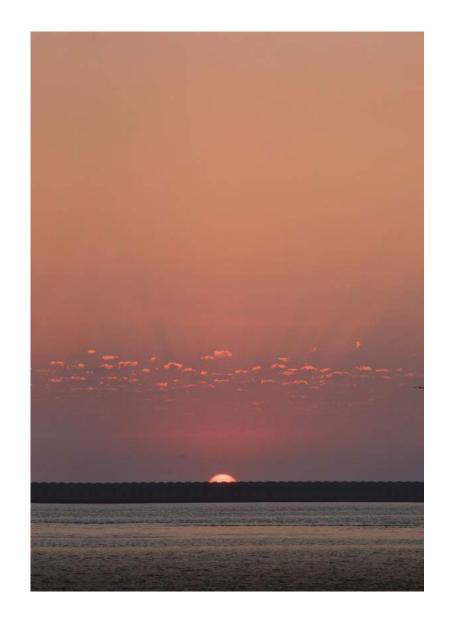
Get in contact, keep in contact, share your contacts

Build a network (Opco's, clients, partners)

Public tenders (World Bank, ADB, etc.)

Embassy's and general government (RVO, G2G, K2K)

Conventions, internet forum, social media, publicity





## Working across borders

Learn, from each other and from mistakes

- Look further than your own backyard (beyond borders)
- Immerse yourself in the customs and habits
- Learn the language (at least 'please' and 'thank you')
- Take adequate time to get acquainted (be patient)
- Be flexible in working times, hours and customs
- Be polite and do not propagate "The Netherlands"
- Dutch/European standards are not The Worlds standard!
- Know when to be humble and when to be strong

