What it takes to DRIVE the CHANGE

.....paving way to mainstream higher sustainability targets

ADOPTION OF SUSTAINABILITY CHANGE

XECURING TARGET OWNERSHIP FOR CHANGE

DRIVING INNOVATION CHANGE

(PROJECT SPOTLIGHT)

THE TREND

Adoption of Sustainability Change

...this is where we are now

Incentives

Compliance

Adoption of Sustainability Change

∎∎∎*this is where we are now*

Boss Said So

Peer Challenge

Xecuring Target Ownership for Change

———

Focus on the _people_ not ONLY technology
(people aid the technology)

Need people to DRIVE sustainable change and BE the change

Organizational Drivers

People , Planet, Profit

What happen to the people and planet ?

Over focus on saving $ / lack emphasis on the people /planet outcome

Choose a Good team
It will make a difference

Driving Innovation Change

Project similarities / Challenges
co-mingled projects with different organisational approach

Similarities	Digital / IOT/C – lever	PV /BAPV
Challenges	Thermal Comfort	Perceived comfort
Perceived room for innovation (single use)	Familiarity vs adaptation	Don't see a need for change

You cant improve what you cant measure

- Overused and out of context / more is not merrier
- Reflection and understanding what to do with the data is important
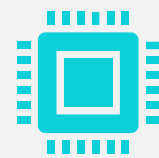- sometimes less is more

Driving Innovation Change

We need to inculcate a mind that accepts innovation can be imperfect for perfection to happen

And

Innovation is not only about a singular product technology it's about the harness of different technologies/sectors coming together that brings the best of it – open innovation

PSA Singapore's First
Super Low Energy Building

...consists of 8 buildings which includes an operations centre which will manage all ...hitects

Active Design Strategies - Admin Block - Aircon, Smart Control & Renewables

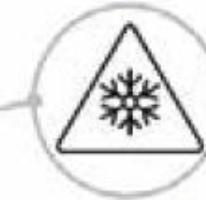**Smart lighting** with occupancy sensors in translent & functional spaces

Building attached PV panels on East, West & North Facade

- **Efficient chiller**
- **Precision Secondary Pumping** system for whole Admin block

- **BMS controlled systems &** monitoring
- **Model predictive Control** for ACMV Optimisation
- **IAQ sensing** – Monitoring, trending

- **Passive Displacement** Thermosiphon beam for L2,L5,L6 of Admin Building
- **VAV thermal Diffusers** for L1, L4 office areas

- **Hybrid evaporative cooler** with fan assisted cooling for L1 Canteen

PSA Maintenance Base – Admin Building

GREEN MARK DISTRICT (PROVISIONAL)
Only in Africa

Energy

To encourage energy efficiency by creating optimal conditions for the use of passive and active solar strategies.
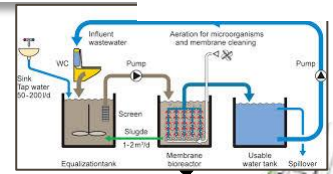
Quality of Life

Community Services within the District : Hospital, School, Retail, Offices.

Materials

Recycling Igloos for material collection and storage (Glass Products)

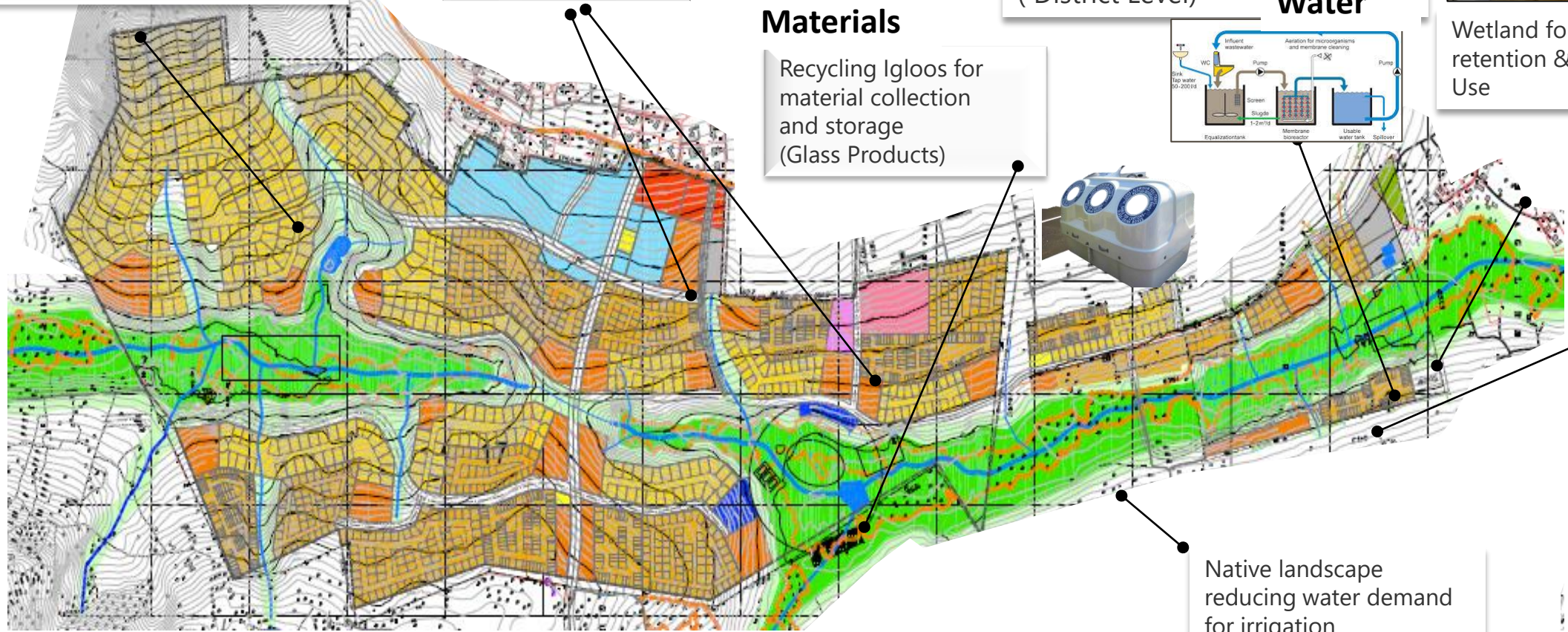Wastewater Treatment Plant (District Level)

Water

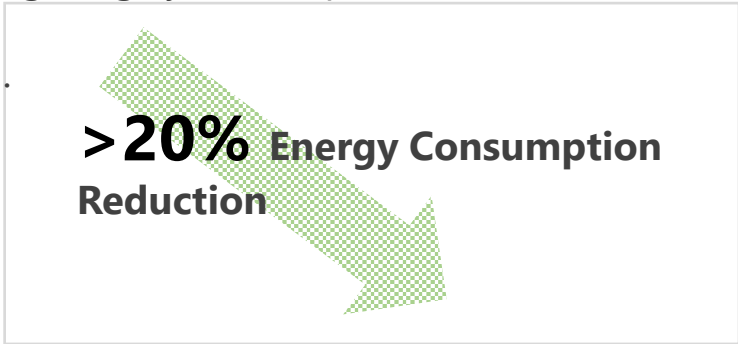Wetland for storm water retention & Recreational Use

Regional Materials

Native landscape reducing water demand for irrigation
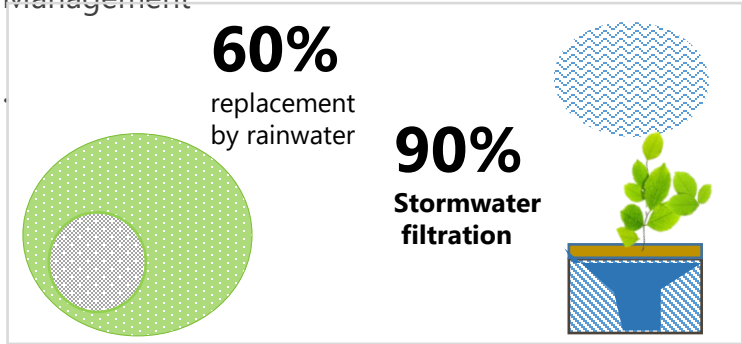
KEY ENVIRONMENTAL STATISTICS

Energy
Energy efficiency for the exterior lighting system & public Infrastructure

>20% **Energy Consumption Reduction**

Water
Wastewater Treatment Plant an rainwater collection for non-portable Proposes / Storm water Management

60% replacement by rainwater

90% Stormwater filtration

Material and Waste
50% cut and fill soil will be reused.

50% reuse

Cut and fill earth work

Planning
Green and blue spaces for recreation / Optimized solar orientation design

30% of the Site is Greenery

Covered Walkways

35 Ha of Wetland
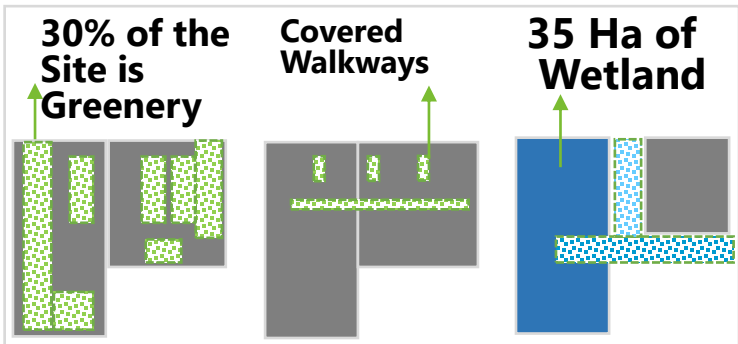
Green Design
Green Urban Design Guidelines & Green Transportation strategies

AREAS - PLANTED AS SPRIGS

DETAILED PLANTING TO SLOPE AND FOCAL AREAS

HEDGE/CREEPER PLANTING AS VISUAL SCREENING

Community & Innovation
Shared facilities and Public Amenities for the Community

Community Involvement

Public

Public awareness, education and community

Lubowa

GreenA Consultants
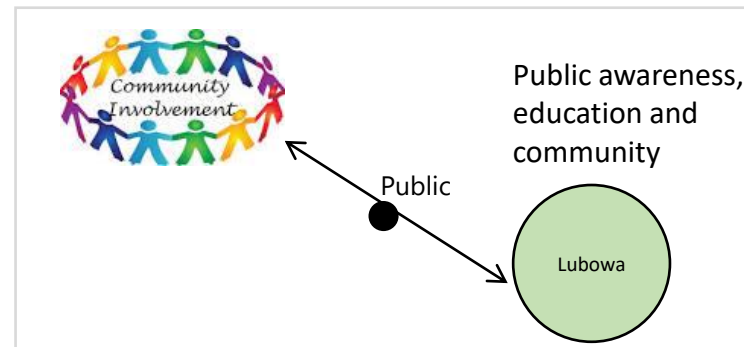
Sustainability in Other countries

Driven by Resource Scarcity instead of all the below
Environmental message is deeper

Incentives

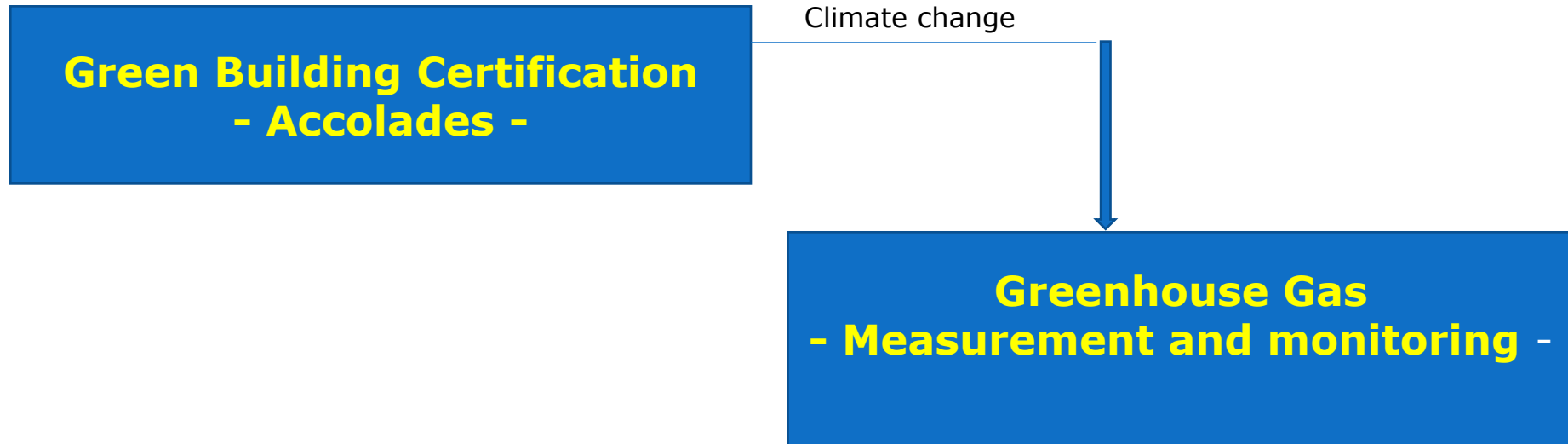**Compliance**

Boss Said So

Peer Challenge

The Trend

**Green Building Certification
- Accolades -**

Climate change

**Greenhouse Gas
- Measurement and monitoring -**
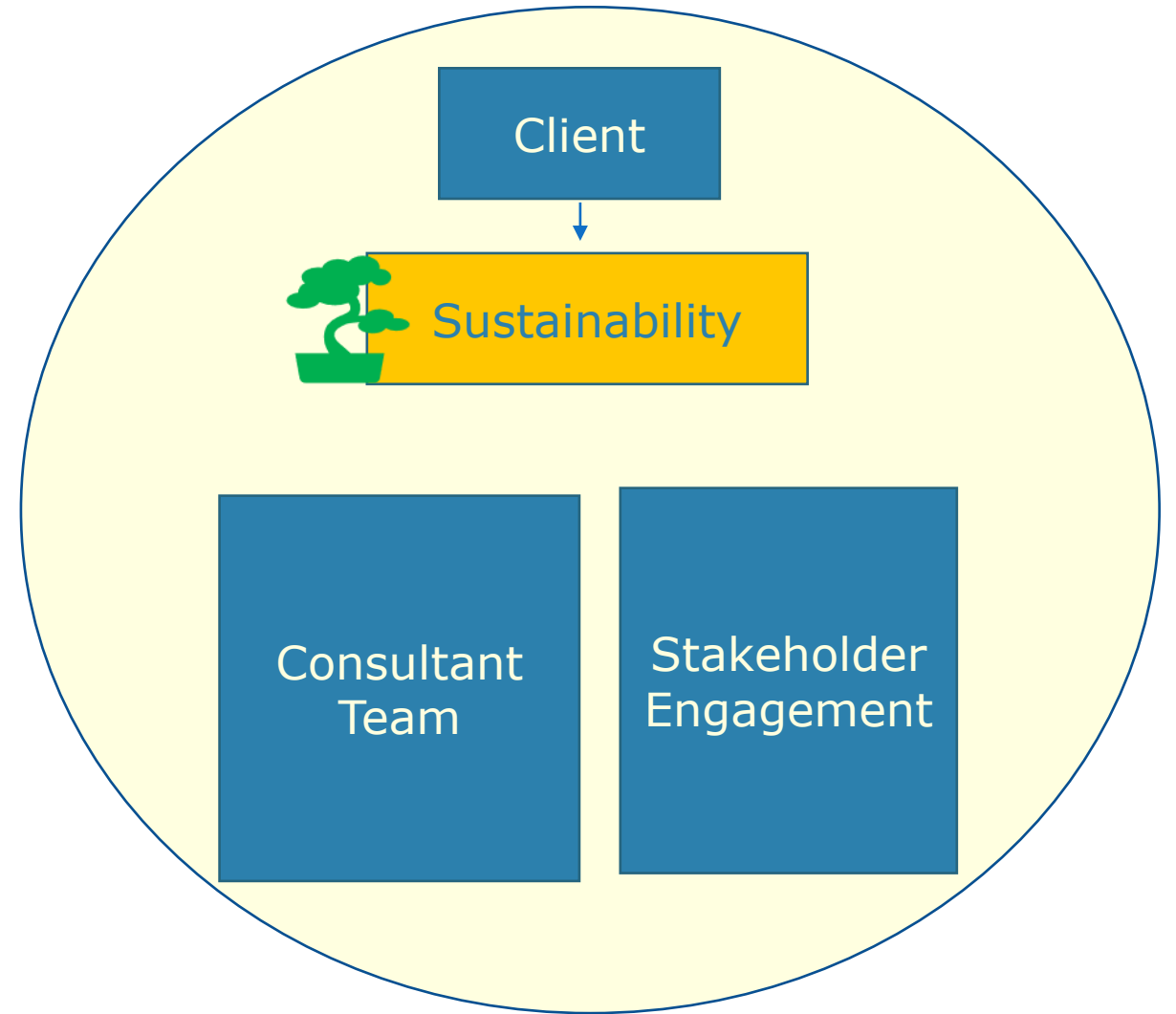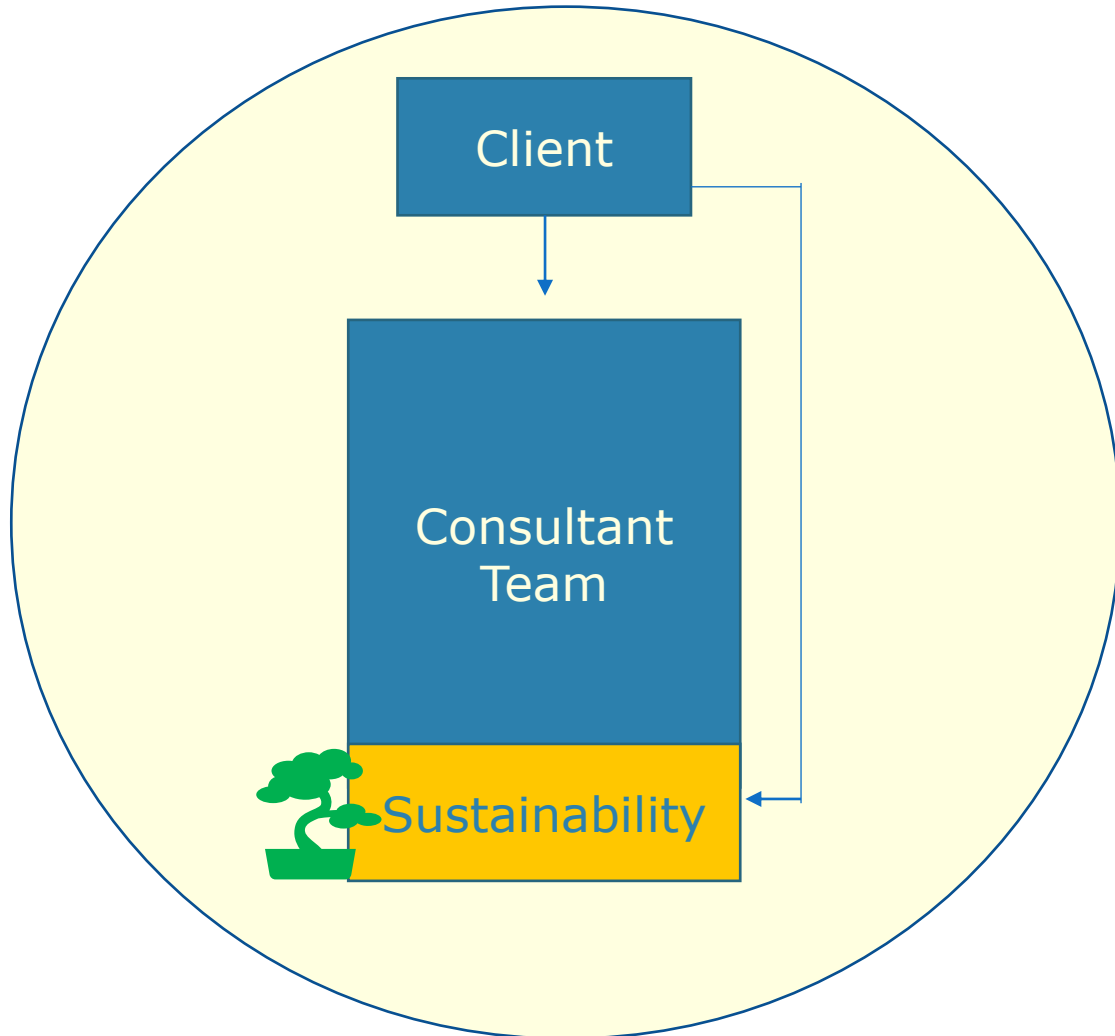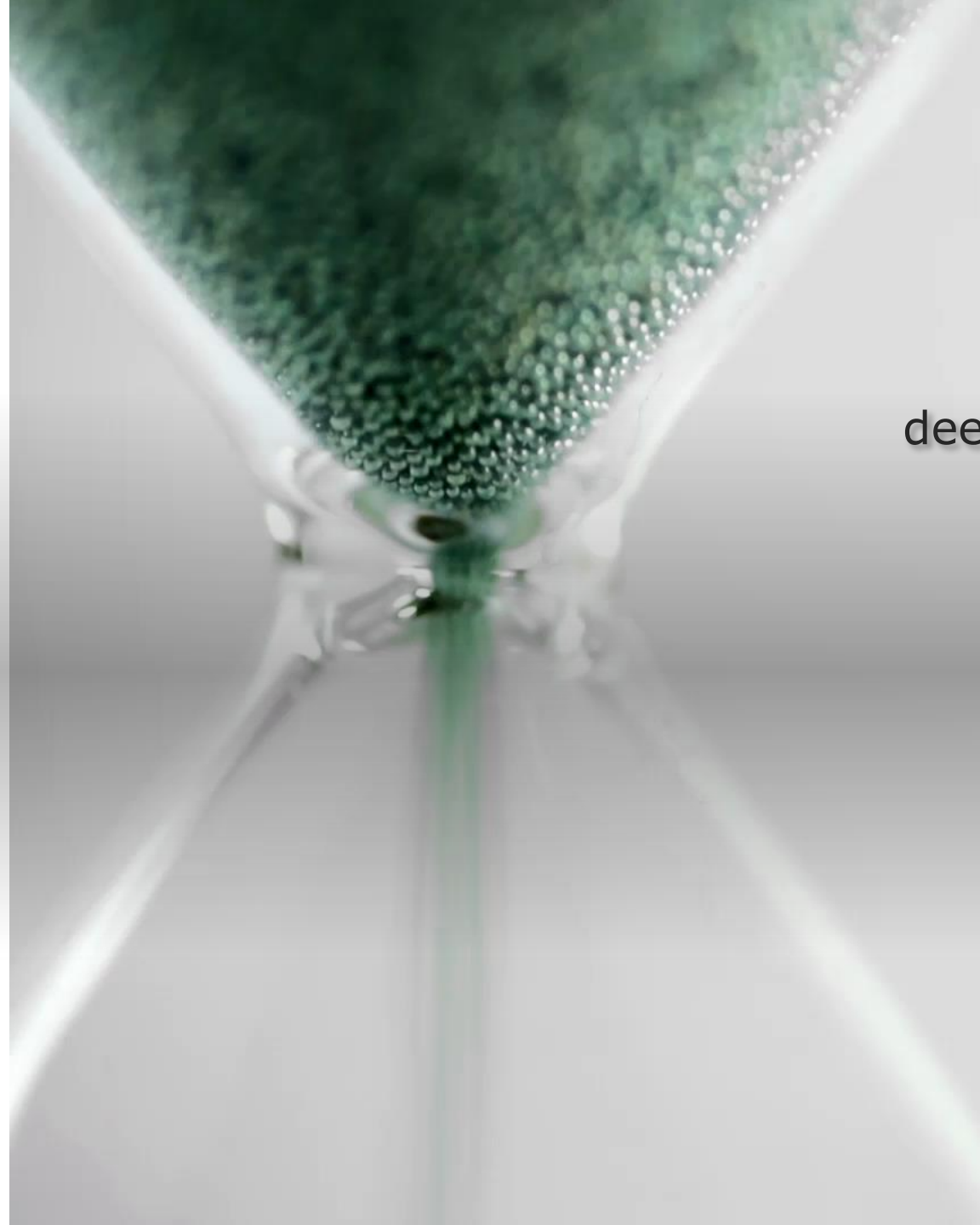
Everyone comes up with a plan / roadmap /etc but..
If you don't have ***a realistic*** plan – you still fail

The Trend

Interesting shift in Project management (sustainability at forefront)

With appreciation for the environment comes deep change to mainstream higher sustainability targets

Farizan d'Avezac de Moran
GreenA Consultants Pte Ltd
farizan@greenaconsultants,com

GreenA
Sustainability
reducing carbon worldwide...