



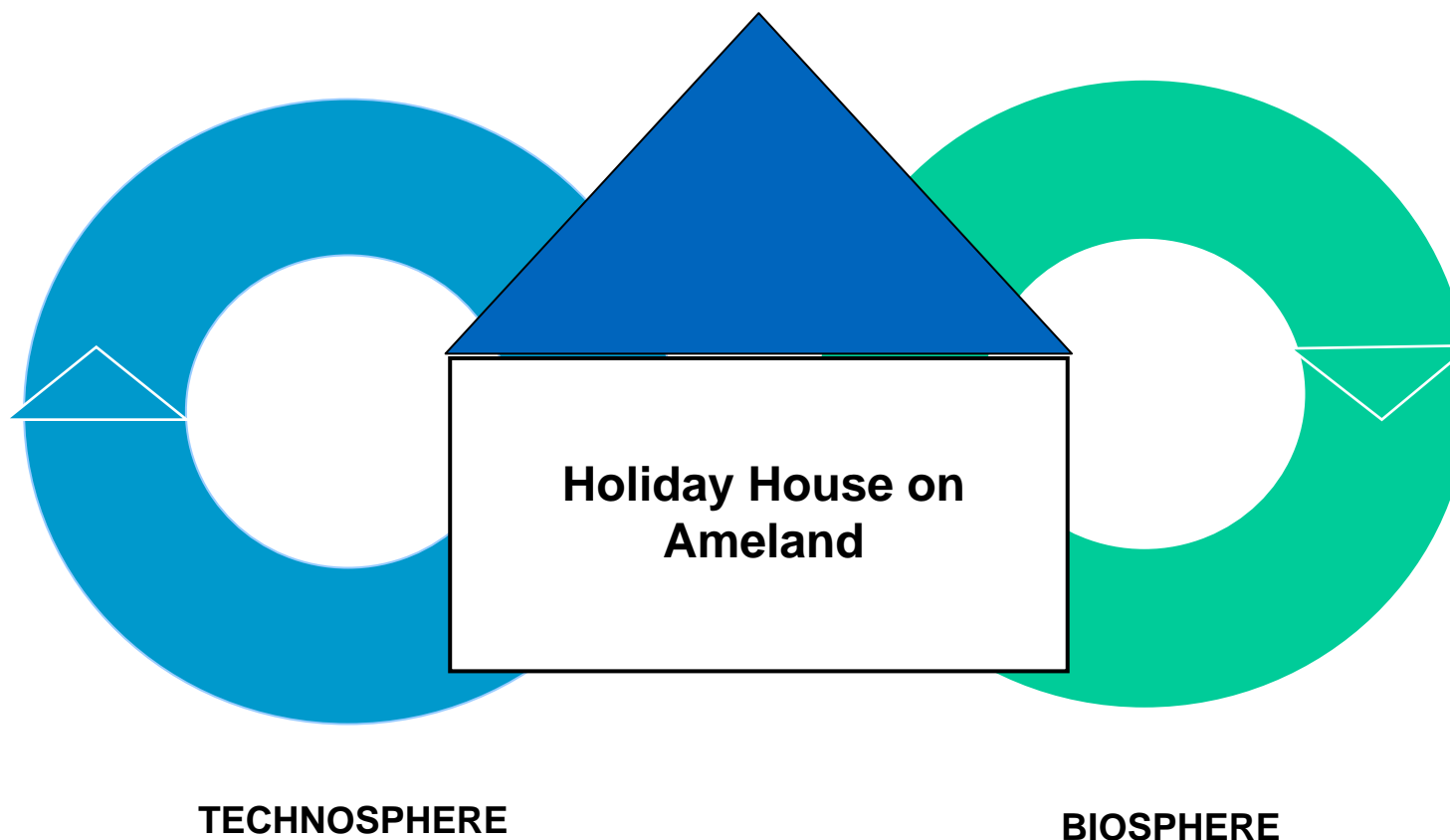
Eternal Holiday House Ameland

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combining scientific excellence with commercial relevance

Renovation of holiday house on Ameland



Main goal:

Transform and rebuild an existing holiday house on Ameland into an eternal holiday house that will be energy- and water positive without decreasing the level of comfort and health standards of today and the future and taking material choice into consideration.

The holiday houses



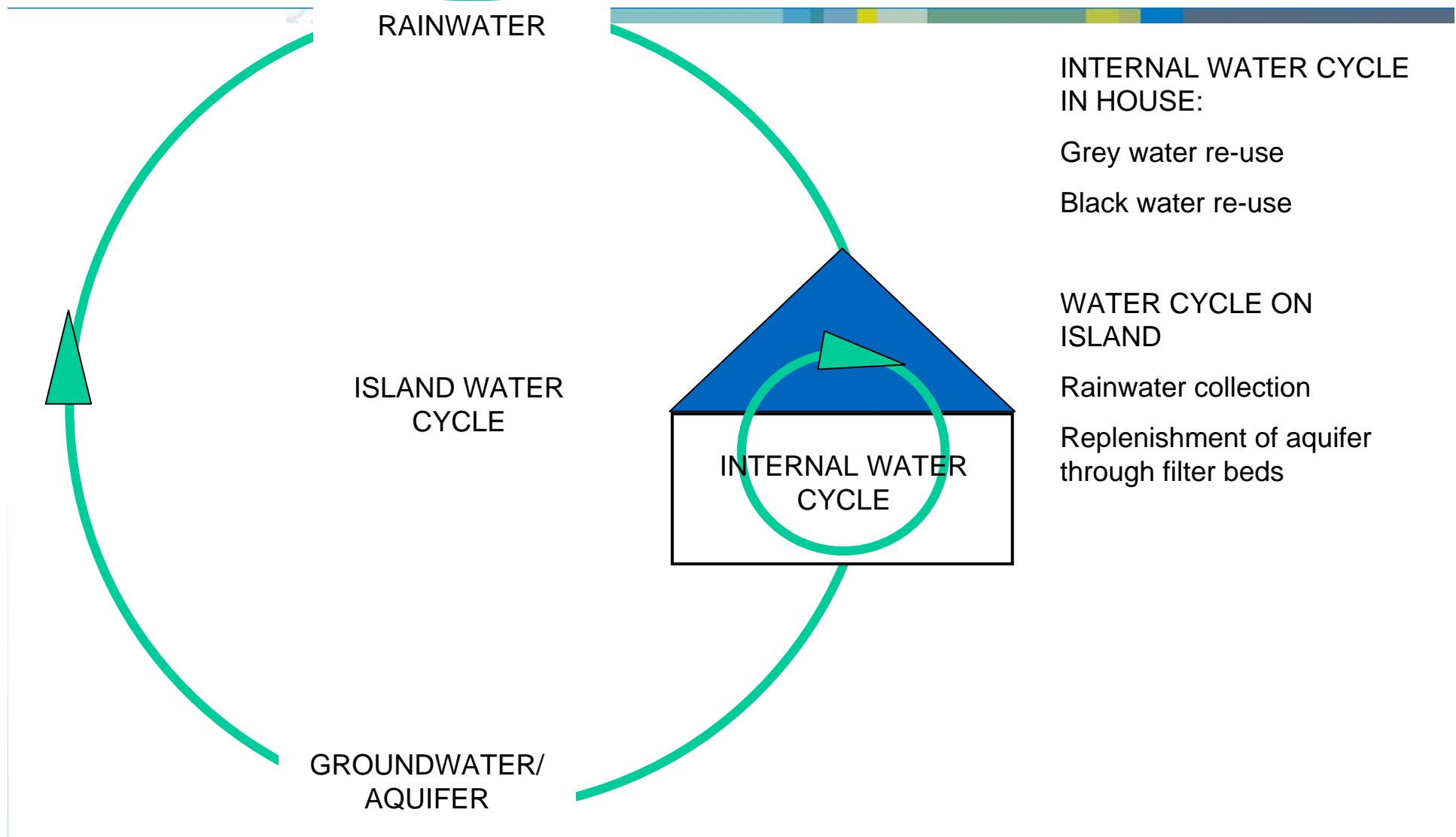
Bambi for testing



Aquarius for reference

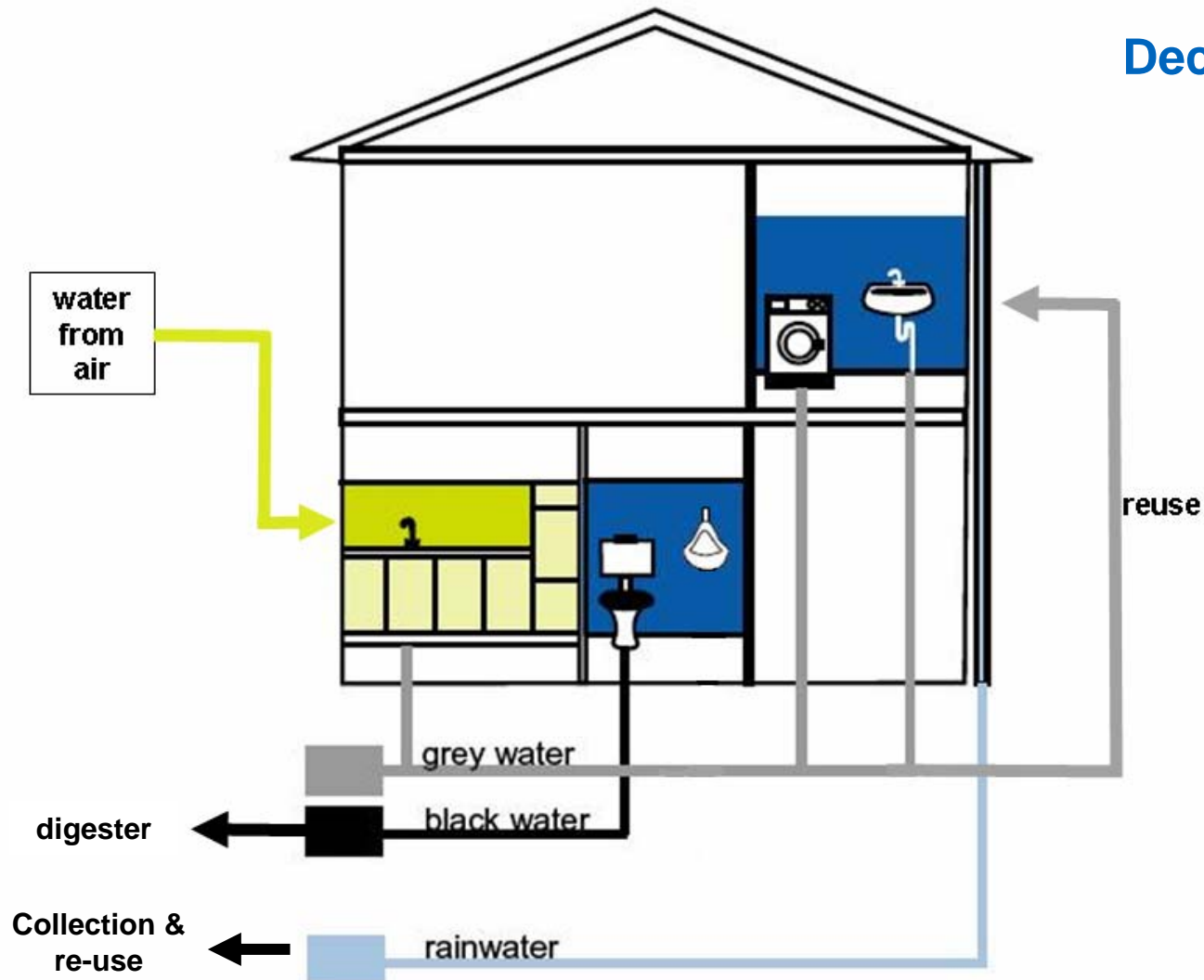
WATER CYCLE

BIOSPHERE



Step 1: focus on water (2010)

Decentral water vision



Saving

- vacuum toilet
- vacuum grinder
- water efficient cloth washer

Reuse

- shower direct loop
- grey water reuse

New source

- water from air

Installing Jets vacuum toilet – kitchen grinder – black water treatment (period April-May 2010)

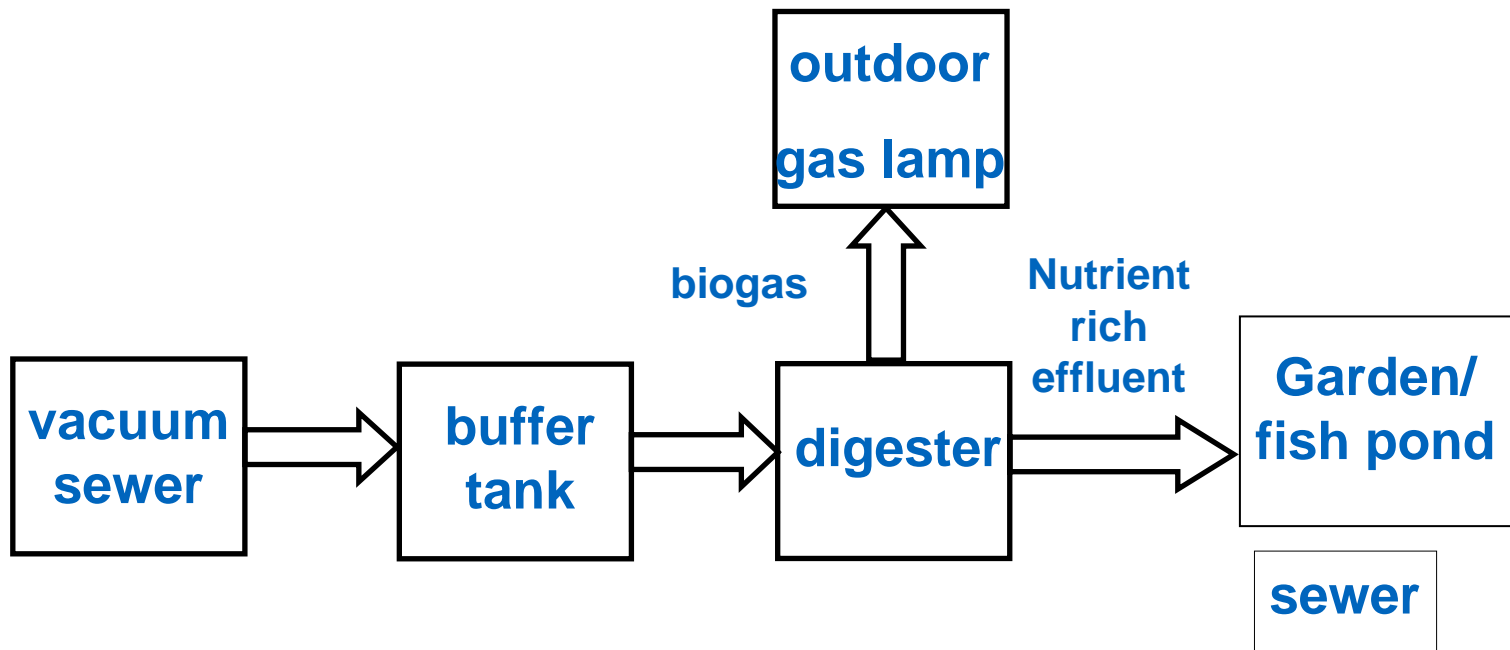


Jets vacuum toilet

Installing Jets vacuum toilet – kitchen grinder – black water treatment (period April-May 2010)



Nutrient recovery from black water treatment





Installing recycle shower (end 2010)



Source:

sealskin[®]
THE FINISHING TOUCH FOR YOUR BATHROOM

Producing water



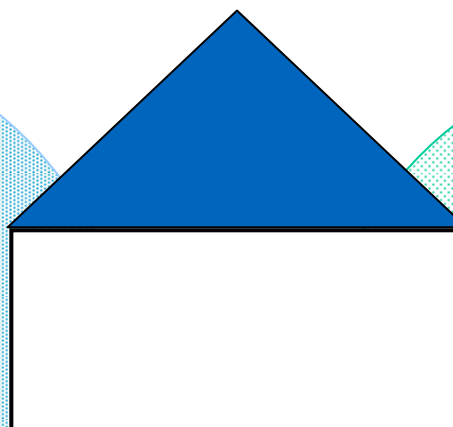
Energy Ball



Water maker

TECHNOSPHERE MATERIAL CYCLE:

- furniture, carpets,
- bathroom tiles, shower, vacuum toilet
- electrical equipment, electronics - washing machine, grinder etc



BIOSPHERE MATERIAL CYCLE :

- shampoos, detergents, household cleaners
- Toilet paper, food
- water

- **Promote products which fit in the biosphere, e.g.:**
 - Aveda shampoos,
 - Van Houtum toilet paper,
 - Method household cleaners etc.
- **Most of these products end up in the water cycle so the theme clusters are linked!**

- **Promote products which are designed for the technosphere, e.g.**
 - toilet, shower etc. are clearly defined in terms of the materials used,
 - designed for disassembly and reuse
 - explore service concept with manufacturers
- **Renovation of the Bambi-house with f.e.**
 - Mosa bathroom tiles,
 - Desso carpet,
 - C2C towels etc.



**Bambi
Holiday House**

Water

Electricity

Gas

Aquarius reference house

**Measuring total use from main water
and energy meters**

Water



Measure water use shower

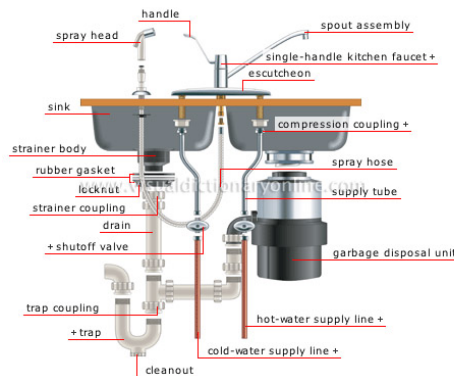
Measure total m3

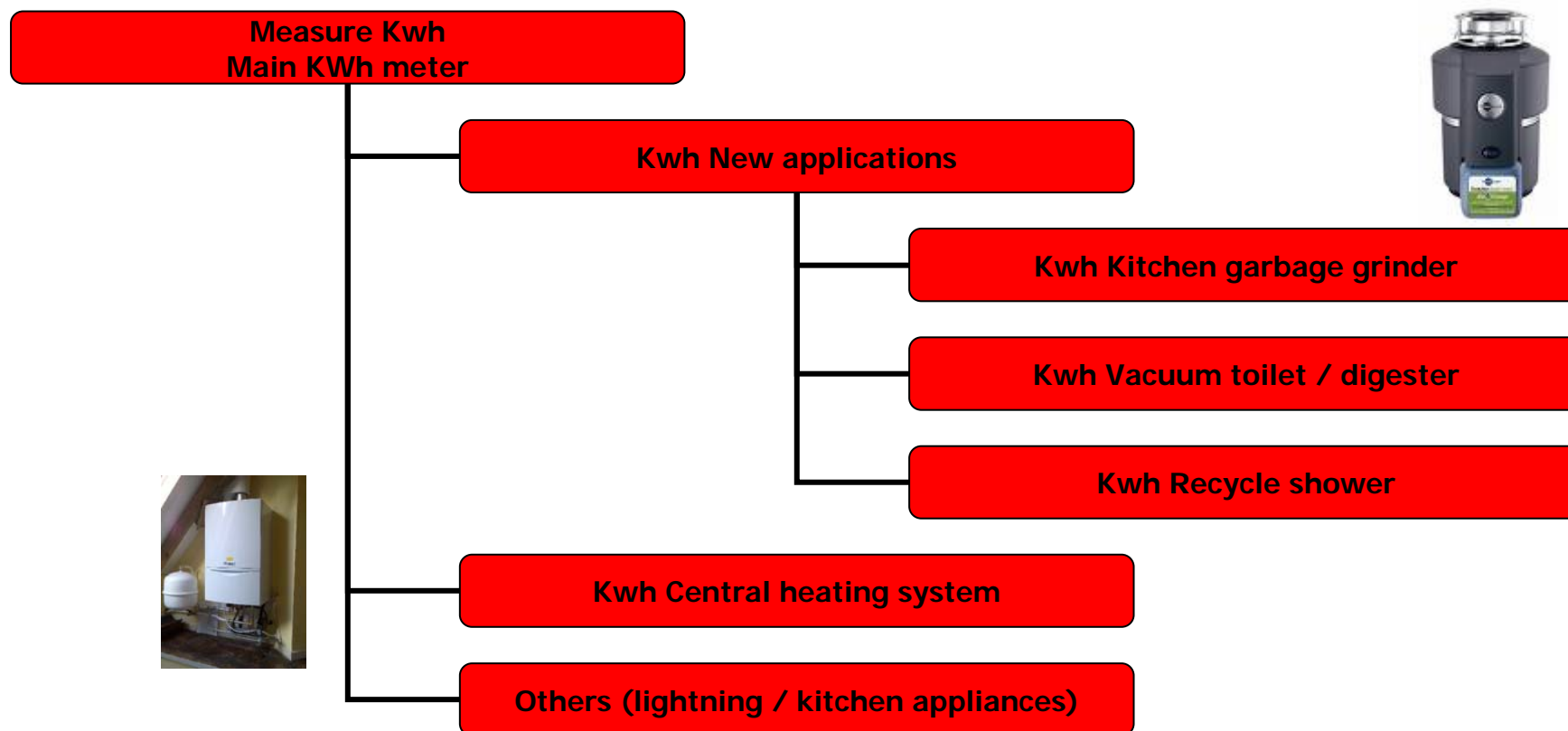


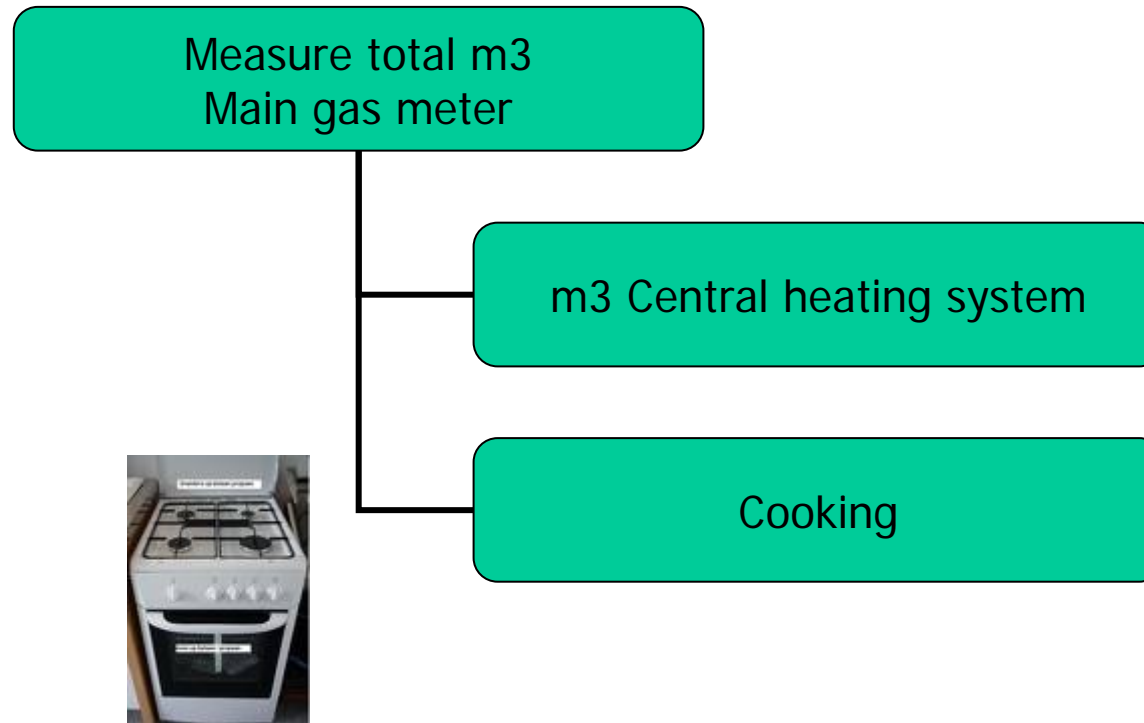
Measure water use vacuum toilet



Divide main use by others



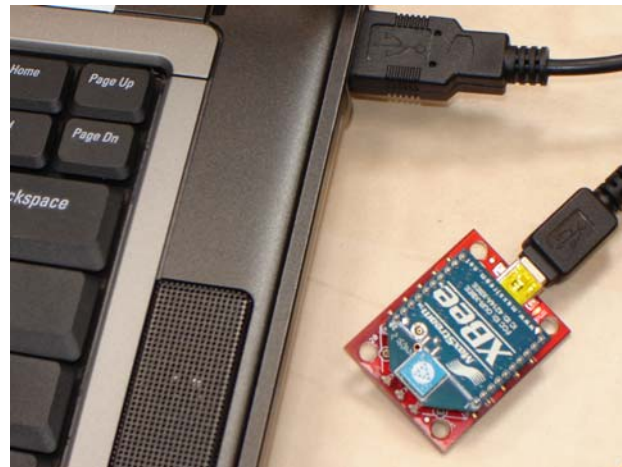




Make use of xbee radio frequency modules to measure wireless. Together with mini laptop and gprs dongle capable of analyzing data world wide



Extendable to more than 50 data collection points



Information/communication to tenants:

- Don't force them to do things differently, but engage those who are interested by telling them the story about the renovation with the various aspects:
 - The water cycle in the house and on the island + how they can help Ameland to reach their ambition
 - What happens to the things that are flushed down the drain?
 - Why the use of certain products is encouraged?

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