


# How to operate a Soil Bank ?

**Henri Groeneveld**

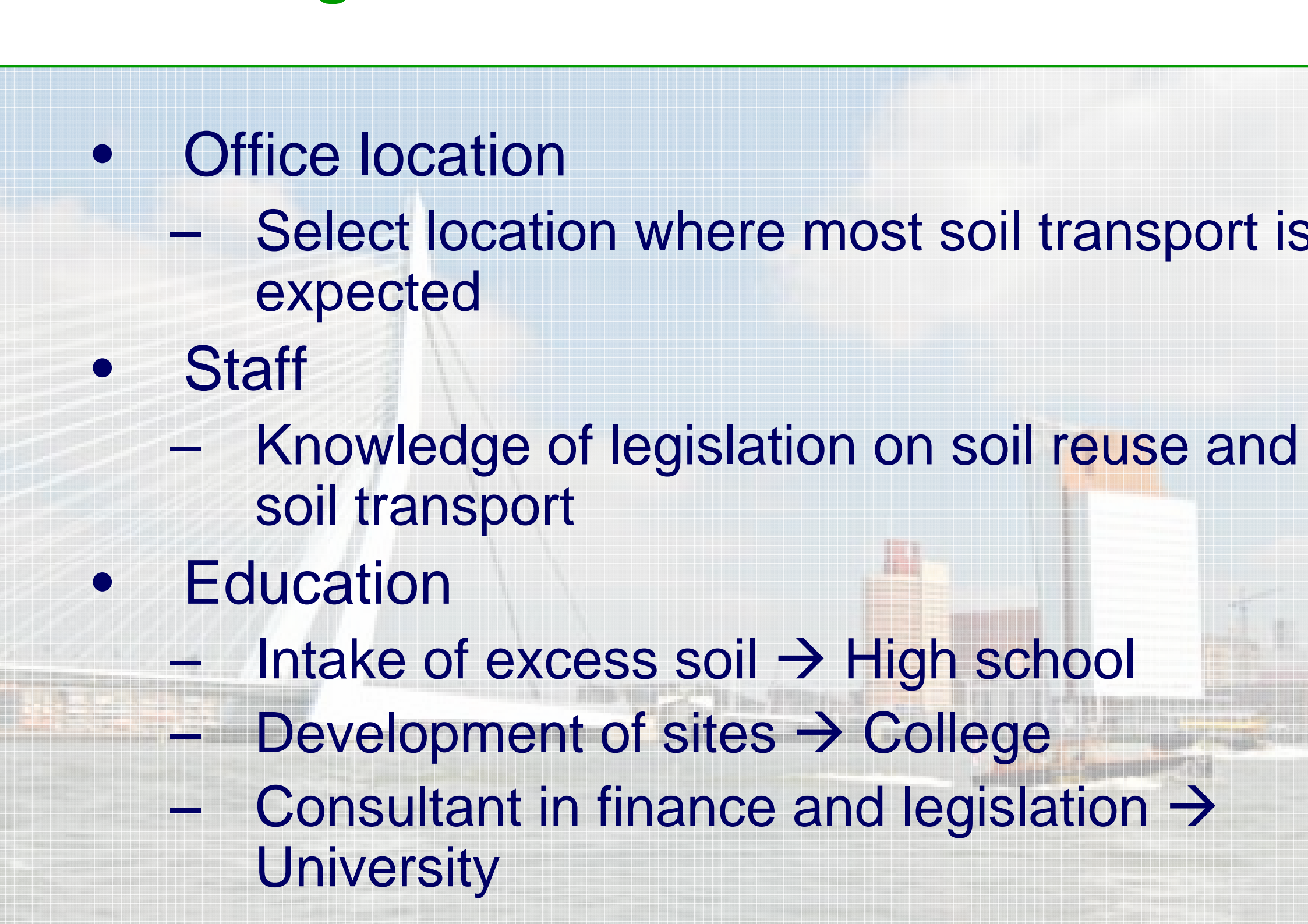
**City of Rotterdam – Soil Bank**





- 
1. Organisation
  2. Consultant in Finance and Legislation
  3. Intake of excess soil by the Service Desk
  4. Development of sites for excess and demand
  5. Lessons learned



- 
- Office location
    - Select location where most soil transport is expected
  - Staff
    - Knowledge of legislation on soil reuse and soil transport
  - Education
    - Intake of excess soil → High school
    - Development of sites → College
    - Consultant in finance and legislation → University



Soil Bank Rotterdam



```
graph TD; A[Soil Bank Rotterdam] --> B["Consultant/manager in Finance and legislation (1 fte)"]; B --> C["Service Desk (2,8 fte)"]; B --> D["Development sites for surplus and demand (2,6 fte)"]; D --> E["Manager Temporarily storage sites (1 fte)"]; D --> F["Supervisor sites (1 fte)"];
```

The diagram is an organizational chart for 'Soil Bank Rotterdam'. It starts with a yellow box at the top, followed by a light blue box, then two light green boxes branching out, and finally two light blue boxes at the bottom branching from the right-hand green box. Arrows indicate the flow of the hierarchy.

Consultant/manager in Finance and legislation  
(1 fte)

Service Desk  
(2,8 fte)

Development sites for surplus and demand  
(2,6 fte)

Manager Temporarily storage sites  
(1 fte)

Supervisor sites  
(1 fte)



GROND- EN RESTSTOFFENBANK









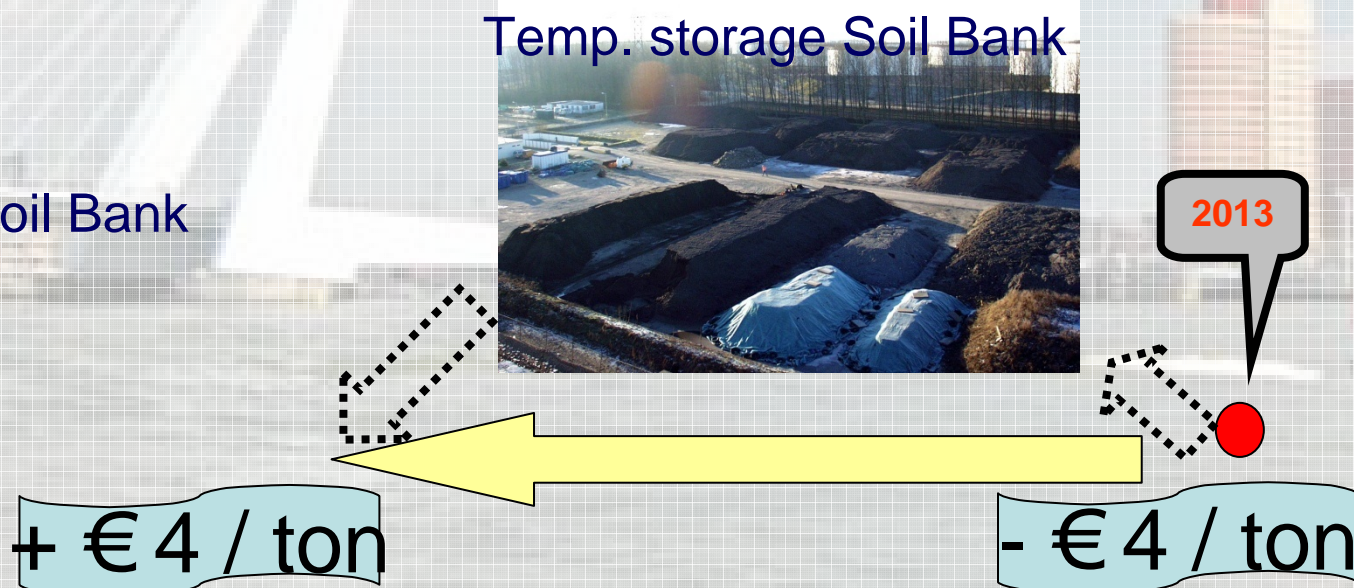
- Reuse of soil (2011)
  - 6 demand sites developed by Soil Bank Rotterdam or in co-operation with private parties. Total reuse 700,000 tons
  - Matching between demand and excess sites 300,000 ton
  - Mediate between 80 batches each month
  - From small (5 tons) to large amounts (100,000 tons)
  - Small batches are mixed with organic material (compost) to improve for reuse in the parks



aneous demand



created by Soil Bank





- Fee: for every ton we deliver to a demand site we receive € 0.40 per ton, to compensate for administration, registration, mediation and matching activities

or

- For the matching between 2 projects there is a fee of € 1,200 per match
- Non profit organisation



- Annual reports Soil Bank (quantities, qualities, origin, destination and financial data)
- Annual reports for every demand location (quantities, qualities, origin, exact destination of reuse and financial data)
- Annual reports for soil treatment facilities, and landfill (quantities, qualities, financial records, origin, soil treatment method)



# Responsibilities

- Registration and Reporting
  - Volume reused (clean, lightly contaminated)
- Sign contracts between parties
- Manage department: Service Desk
- Manage department: Development sites
- Advice on policy and legislation in order to make reuse possible
- Detect excess or demand in the Service Area



## Task Service desk:

- Check if match making is possible by using the Decision Model
- Register demand and excess
- Intake of excess soil
  - Verification with legislation
  - Verification with the requirements of demand side
- Establish contract between disposer and receiver
- Establish tenders for soil treatment or landfill





## Task Service desk:

- Facilitation/registration transport documents
- Keeping up files, archiving
- Financial aspects like billing
- Logistics process
- Statutory reports (before use)
- Mediating in case of problems during transport on demand or excess sites



Quality  
(chemical)

Quality (fysical)  
wet/dry

Quality  
(geothechnical)

Amount

Distance

Name

Price

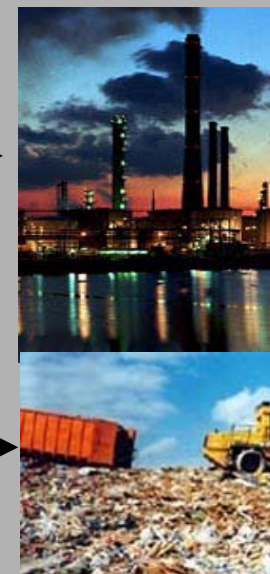
Additional  
substances (e.g.  
stones, debris)

Treatment  
possible ?

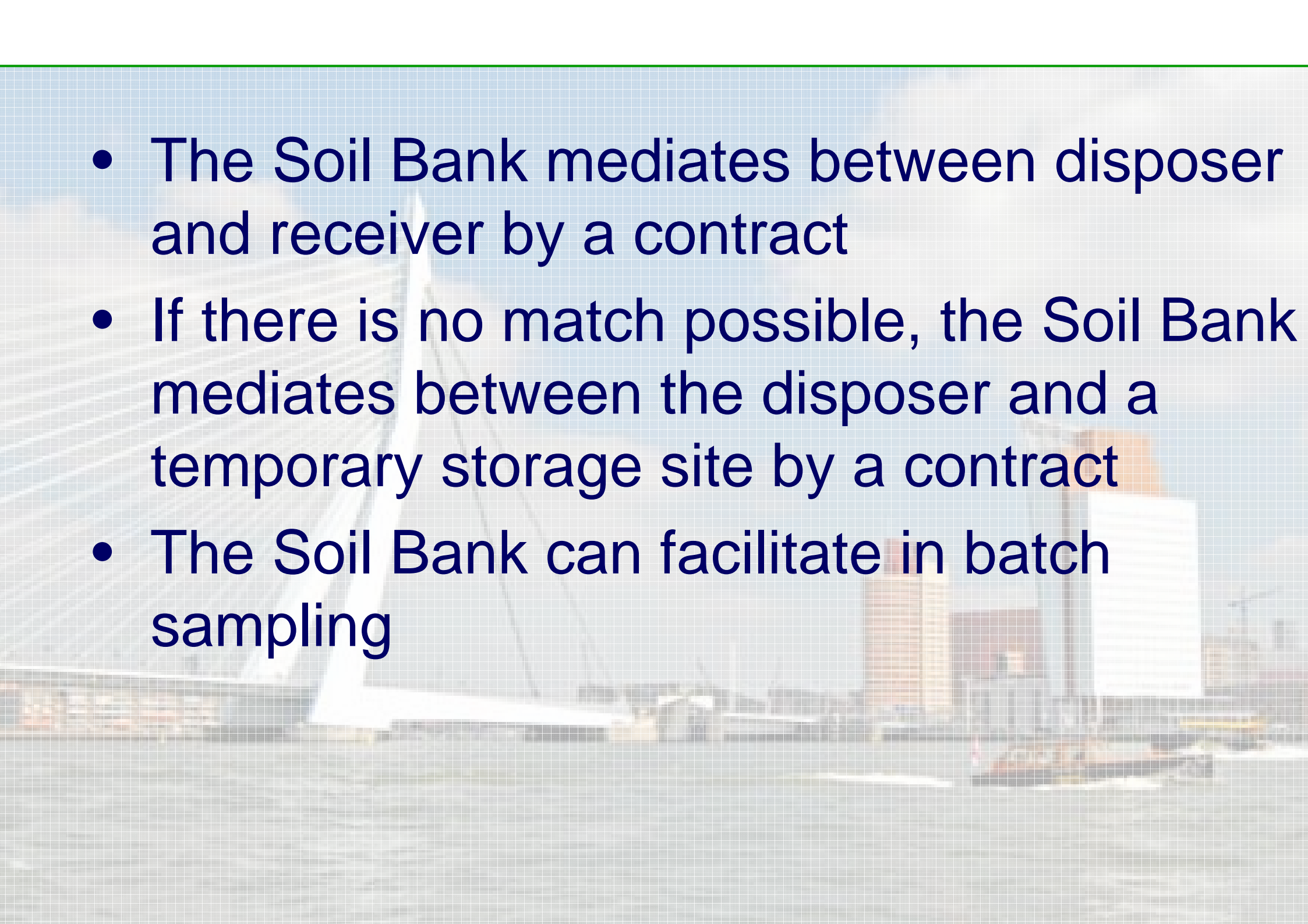
Tender

Soil Washing  
(e.g. Boskalis)

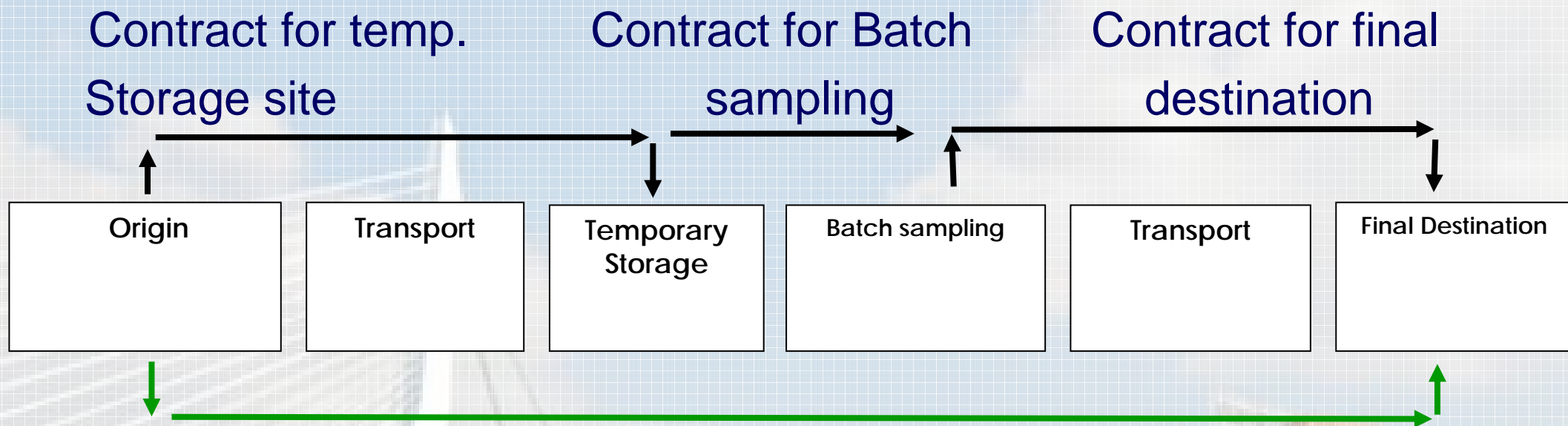
Landfill





- 
- The Soil Bank mediates between disposer and receiver by a contract
  - If there is no match possible, the Soil Bank mediates between the disposer and a temporary storage site by a contract
  - The Soil Bank can facilitate in batch sampling





Contract to final destination when quality is established and allowed

Quality must always be secured (standards)



Enforcement covers the whole chain



# Some examples of demand and excess situations






# (fictitious example)





- 
- The background of the slide is a photograph of a cable-stayed bridge with a tall white pylon and numerous white cables. In the distance, a city skyline is visible under a blue sky with light clouds. The water in the foreground is calm.
- Create demand locations
    - By co-operation with market
    - By Soil Bank itself
    - In co-operation with authority (Public Soil Bank)

See some examples























# (fictitious example)





- 
- The background of the slide is a photograph of a cable-stayed bridge with a white pylon and numerous white cables, set against a blue sky with light clouds. In the distance, a city skyline is visible, including a prominent red brick building and a tall white tower. The water in the foreground is greyish-blue.
- Create excess sites
    - By co-operation with market
    - By Soil Bank itself
    - In co-operation with authority (Public Soil Bank)

See some examples









14/09/2012








(fictitious example)





- 
- The background of the slide is a photograph of a harbor scene. In the foreground, there is a body of water with some small boats. In the middle ground, a large white bridge with many cables is visible. In the background, a city skyline with several tall buildings is visible under a clear sky.
- Transport to Temporary Storage Site. Look at timeframe. Can you delay a project or can you start earlier.
  - Make soil suitable for its destination, e.g. by improvement of soil characteristics (sludge, dehydrate, chalk, mixing)
  - Adjust requirements at the destination project







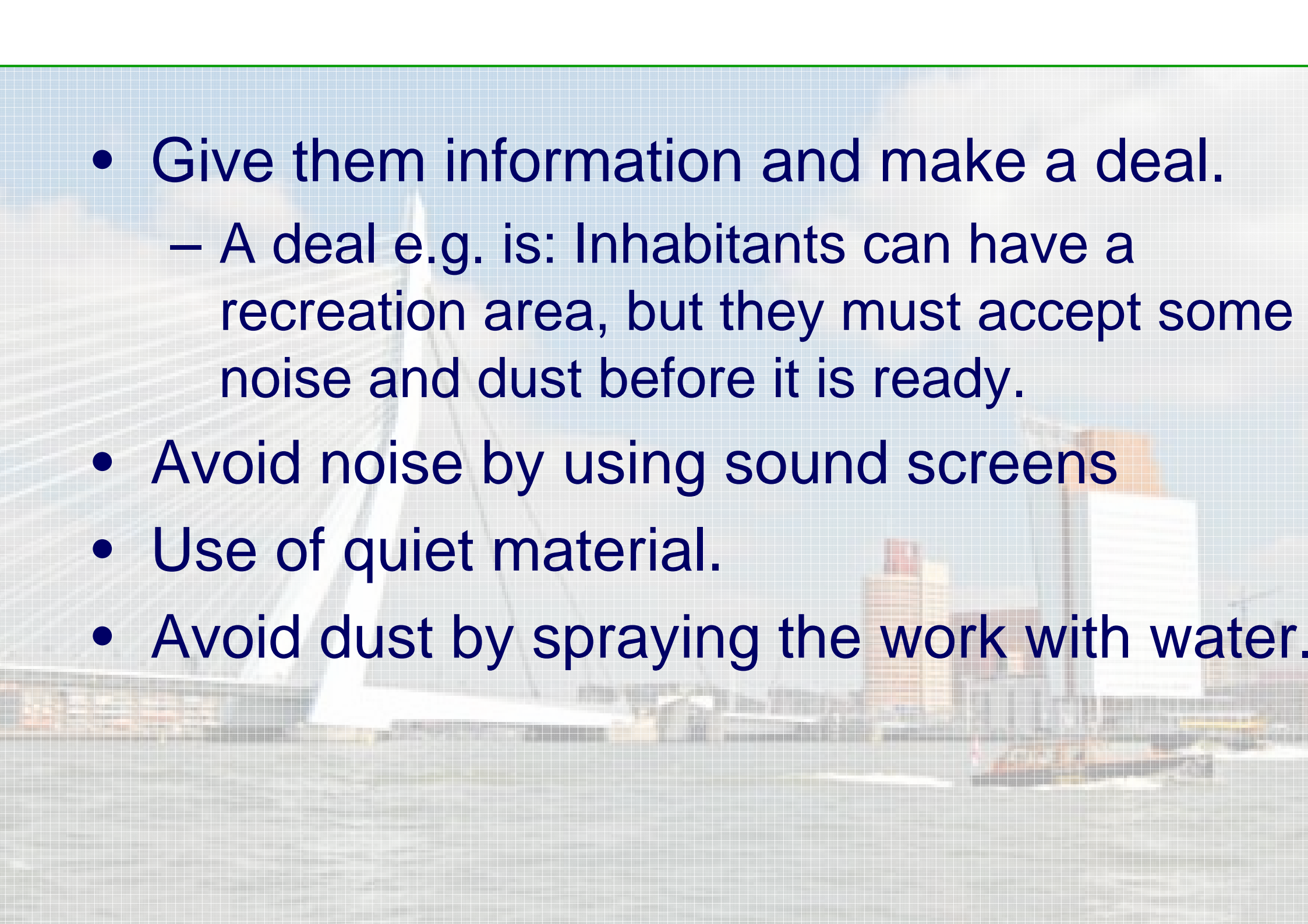




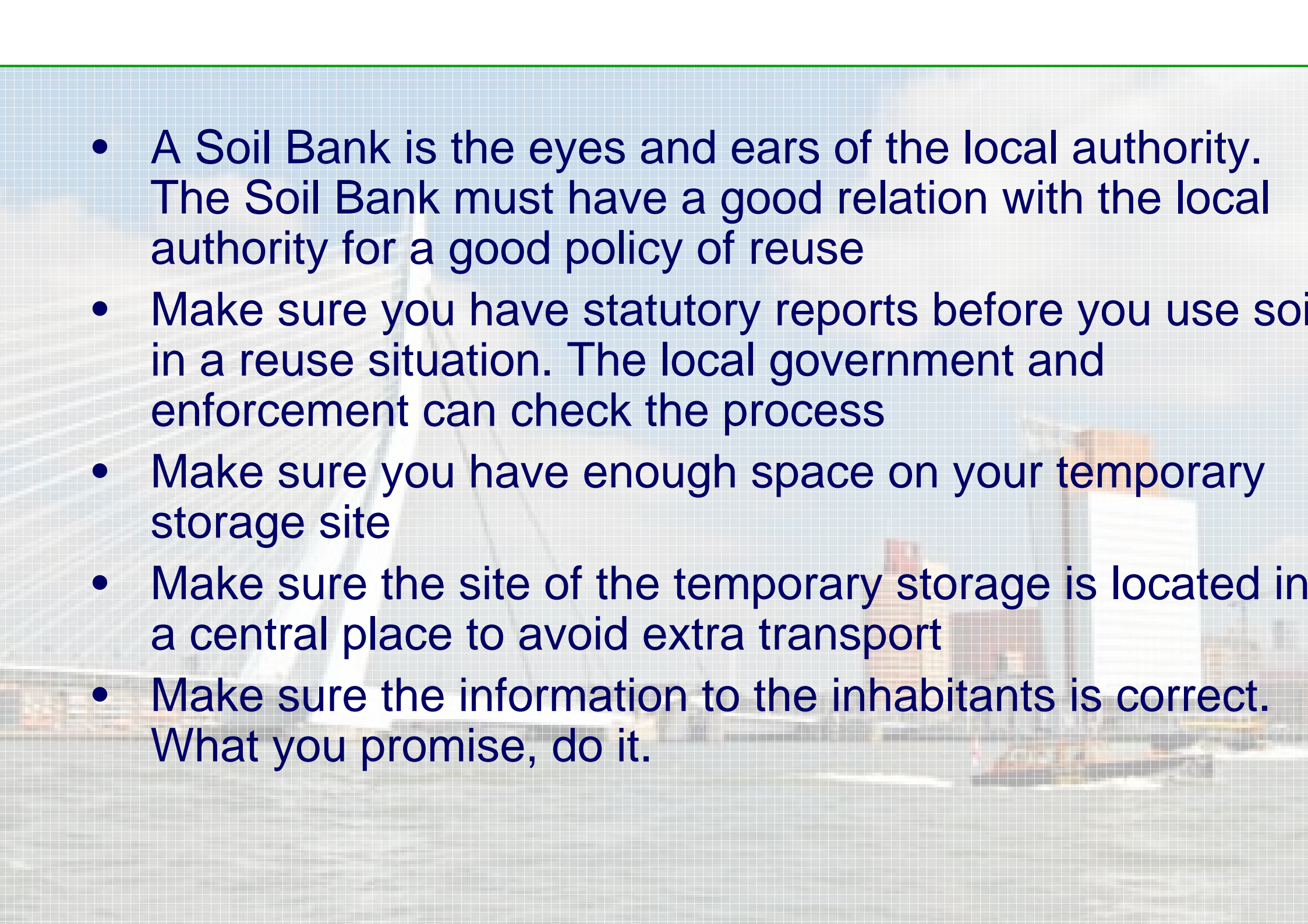
or demand)

- Manage the development sites
- Manage the temporary storage sites
- Establish tenders to operate the sites
- Establish contract between site and disposer
- Manage the supervisor at development site
- Inform the inhabitants around the development sites (special person who communicates with the inhabitants)



- 
- Give them information and make a deal.
    - A deal e.g. is: Inhabitants can have a recreation area, but they must accept some noise and dust before it is ready.
  - Avoid noise by using sound screens
  - Use of quiet material.
  - Avoid dust by spraying the work with water.



- 
- A Soil Bank is the eyes and ears of the local authority. The Soil Bank must have a good relation with the local authority for a good policy of reuse
  - Make sure you have statutory reports before you use soil in a reuse situation. The local government and enforcement can check the process
  - Make sure you have enough space on your temporary storage site
  - Make sure the site of the temporary storage is located in a central place to avoid extra transport
  - Make sure the information to the inhabitants is correct. What you promise, do it.