Why throw away 'WASTE' when you can make food out of it?
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Fascination and problem statement
The urban and rural population of the world, 1950–2030

- **World, total population**
- **World, urban population**
- **World, rural population**

Population (thousands)

- 1950
- 1955
- 1960
- 1965
- 1970
- 1975
- 1980
- 1985
- 1990
- 1995
- 2000
- 2005
- 2010
- 2015
- 2020
- 2025
- 2030

Research
Samenstelling huishoudelijk restafval

Bron: Agentschap NL, CBS.

www.compendium-voordeelformering.nl
Proposed solution
Location:
Design location
Location produces 800 tons of sludge
3000 m² Arable land required. 800m² for Greenhouse
Enough food for 40 pp equals 400m² restaurant
Design
Restaurant

Waste treatment

Food production
The building in its surrounding as it will appear when finished.
Waste treatment
Food production
Kitchen & restaurant

Greenhouse Placement placed in the South to receive maximum natural light.

Mechanical area placed in the North in proximity of industrial area.

Restaurant placed in North East for connection with access route.
Form & Program

Organic waste & Waste water

Waste coming in from outside building

Waste from food production

Waste from surrounding and visitors

How the system work:
Interface of the 3 elements
Interface of the 3 elements
Interface of the 3 elements
Interface of the 3 elements
Interface of the 3 elements

Kitchen & restaurant
Waste treatment
Interface of the 3 elements
Interface of the 3 elements

Food production
Waste treatment

O2Net Kantoor
7000
Objects and experience
Objects and experience
Objects and experience
Objects and experience
Technical aspects
Loadbearing structure

Stainless steel pipeline

Re-enforced insitu concrete.

Re-enforced insitu concrete.
Loadbearing structure

Special structure made from re-enforced insitu concrete.

Re-enforced insitu concrete columns

Re-enforced insitu concrete roof
Limestone masonry

Hollow section steel columns

Hollow core slab floors
Loadbearing structure

Hollow core slab roof

Hollow section steel columns with Joist beams in short span and wide flange section beams in long span
Floor heating in restaurant and waste treatment offices. Offices also use radiator panels on walls.

Fully mechanical ventilation system in restaurant that also serve as heating. Offices have natural intake and mechanical exhaust.

Greenhouse have operable panels on the roof for natural intake.
1 person generates 2.5 m³ sludge resulting in \textbf{423 MJoule} energy. 12476 inhabitants can create approximately \textbf{5300 GJoule} energy.

Design requires: \textbf{430 GJoule} for heating and cooking, 140000 kWh or \textbf{500 GJoule} for electricity.

\begin{itemize}
  \item Note: Utility buildings from 500 m²-10000 m² require 455 MJoule/m² for heating and 305 MJoule/m² for electricity
  \item Note: 1 household uses 5000 kWh electricity
\end{itemize}
Greenhouse: transparancy

Restaurant: transparent in the middle stroke

Waste treatment: massive volume with thin vertical openings
Facade construction

1 : 20