Triangulum

Demonstrate
Disseminate
Replicate

Bauke de Vries

DEMONSTRATE • DISSEMINATE • REPLICATE

TU/e Technische Universiteit
Eindhoven
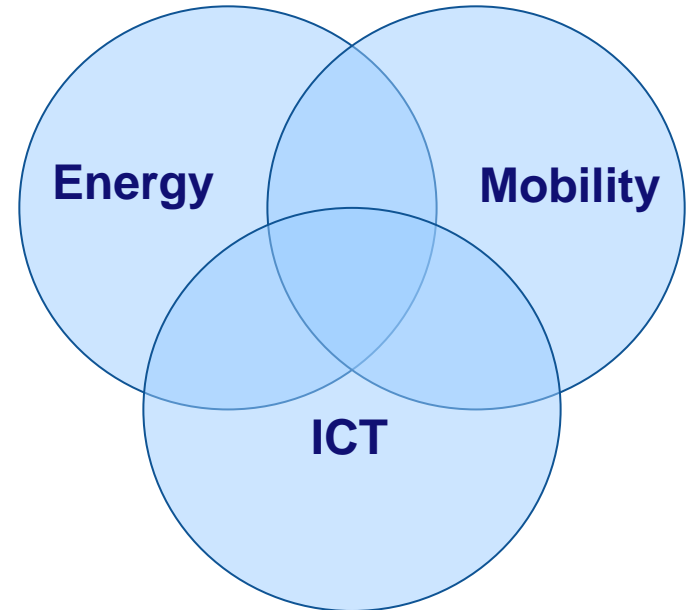University of Technology

Where innovation starts

EU project

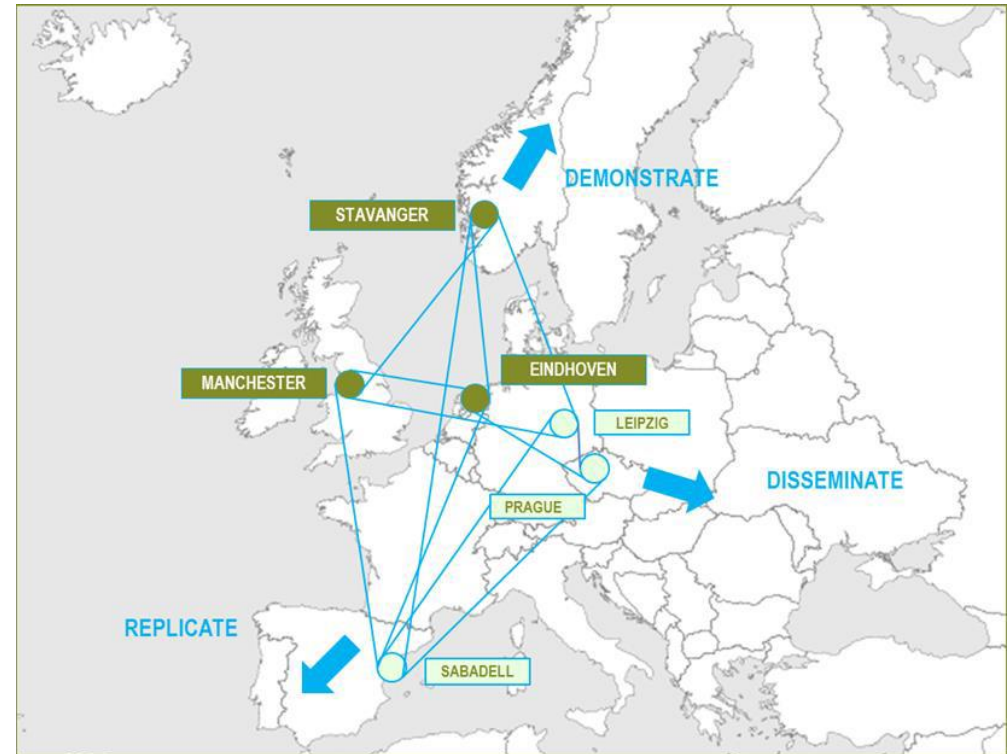- **Mobility**
- **Energy**
- **ICT**

Strategic orientation for Smart Cities at EU level

- **Integrated approach to complement sectoral policies**

  o **Energy, Mobility and ICT**

  o **Focus on intersections**

- **20-20-20 targets: energy-efficiency & low-carbon development as drivers**

- **Roll-out of mature innovative technologies at large scale**

- **Key roles for cities and industries**
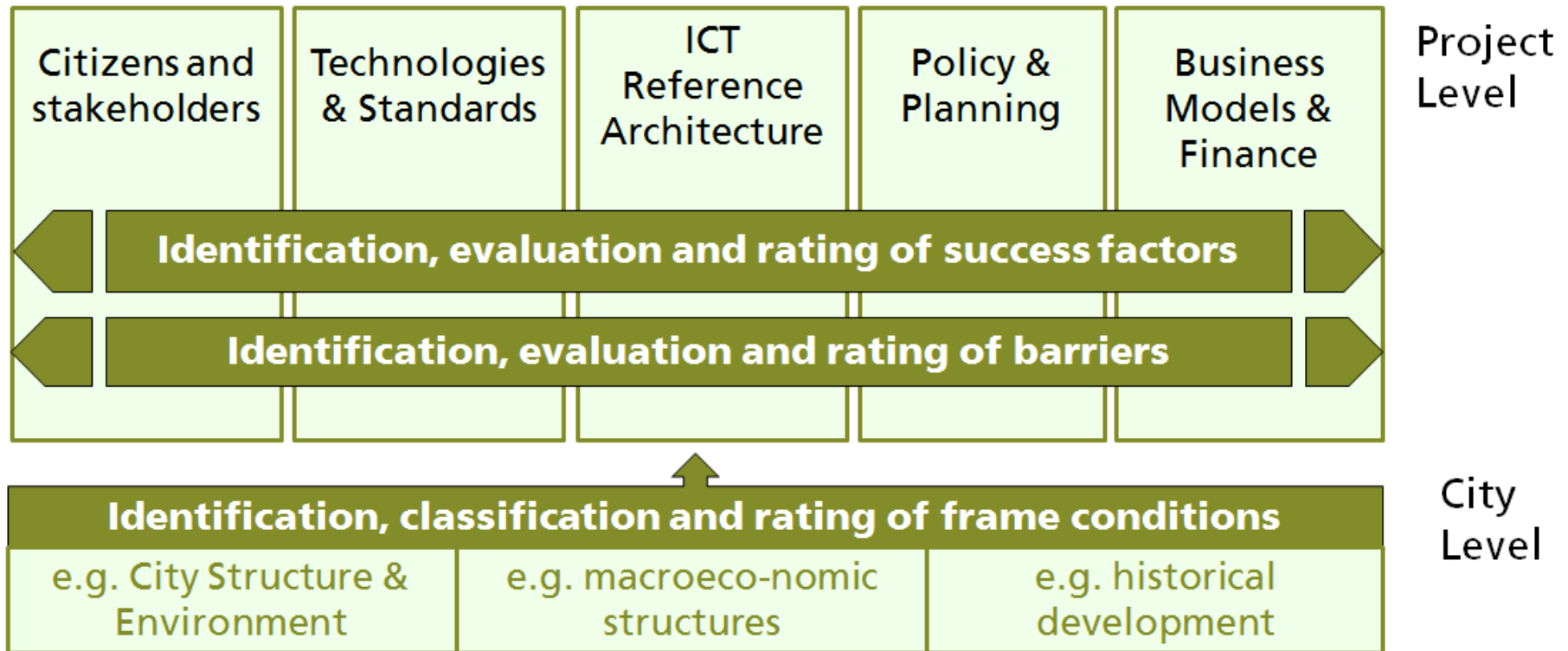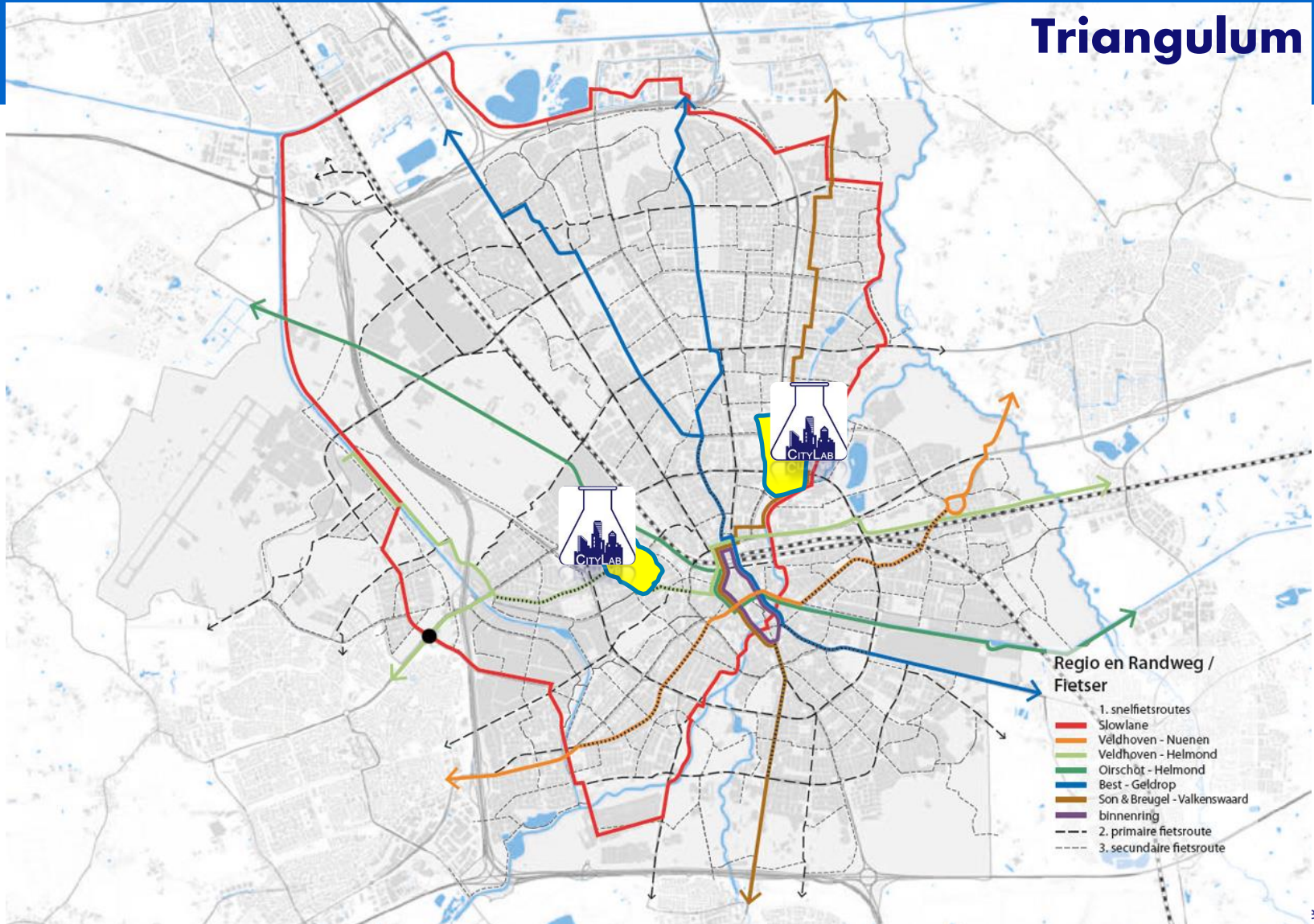
Energy

Mobility

ICT

Triangulum

- Horizon 2020 Project, 2015 to 2020, €25m

- Coordinated by Fraunhofer Society

  (Project Coordinator: Damian Wagner)

- Manchester, Eindhoven, and Stavanger

- Development of low-carbon smart districts

- 25 core partners

- 7 countries

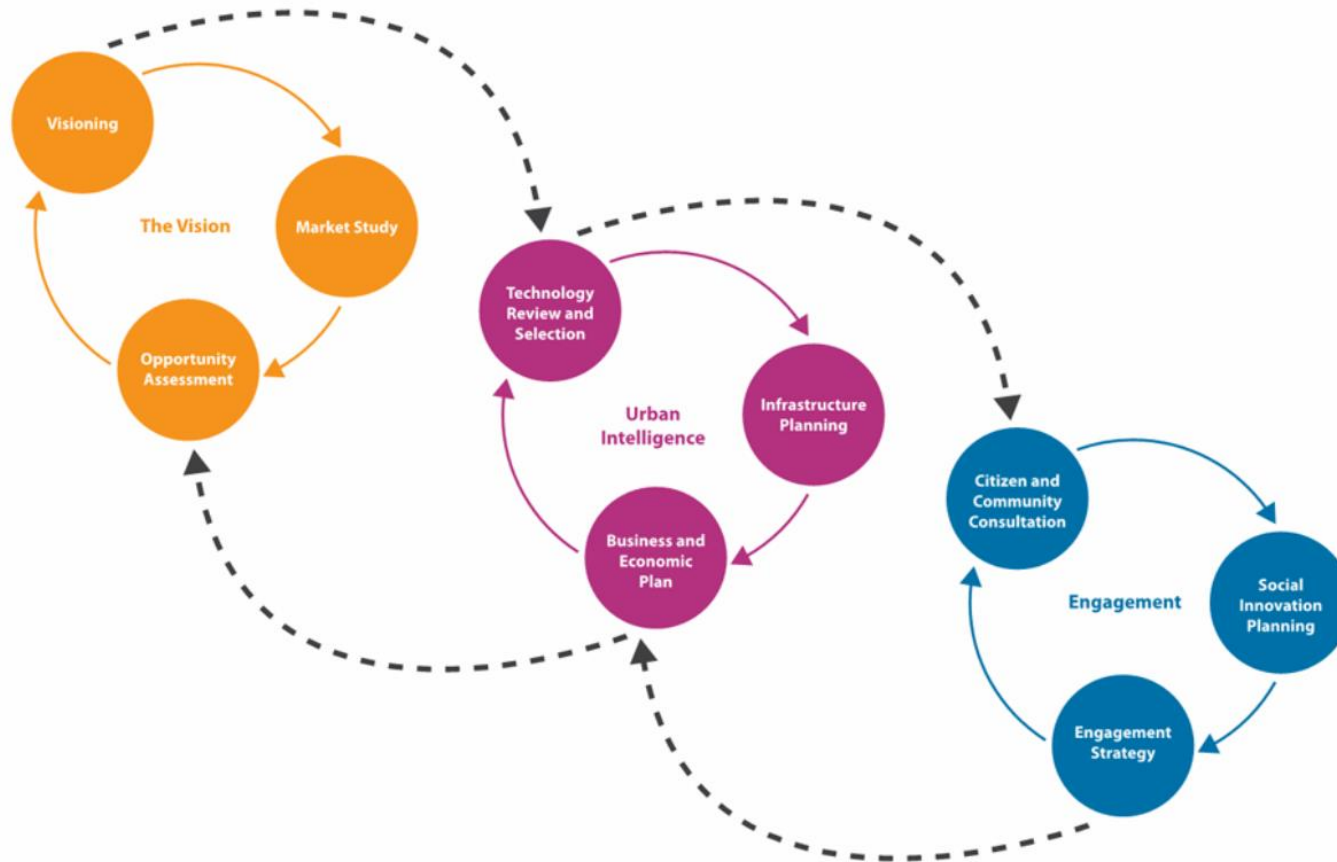# Triangulum Framework

City Lab

Regio en Randweg /
Fietser

1. snelfietsroutes
Slowlane
Veldhoven - Nuenen
Veldhoven - Helmond
Oirschot - Helmond
Best - Geldrop
Son & Breugel - Valkenswaard
binnenring
2. primaire fietsroute
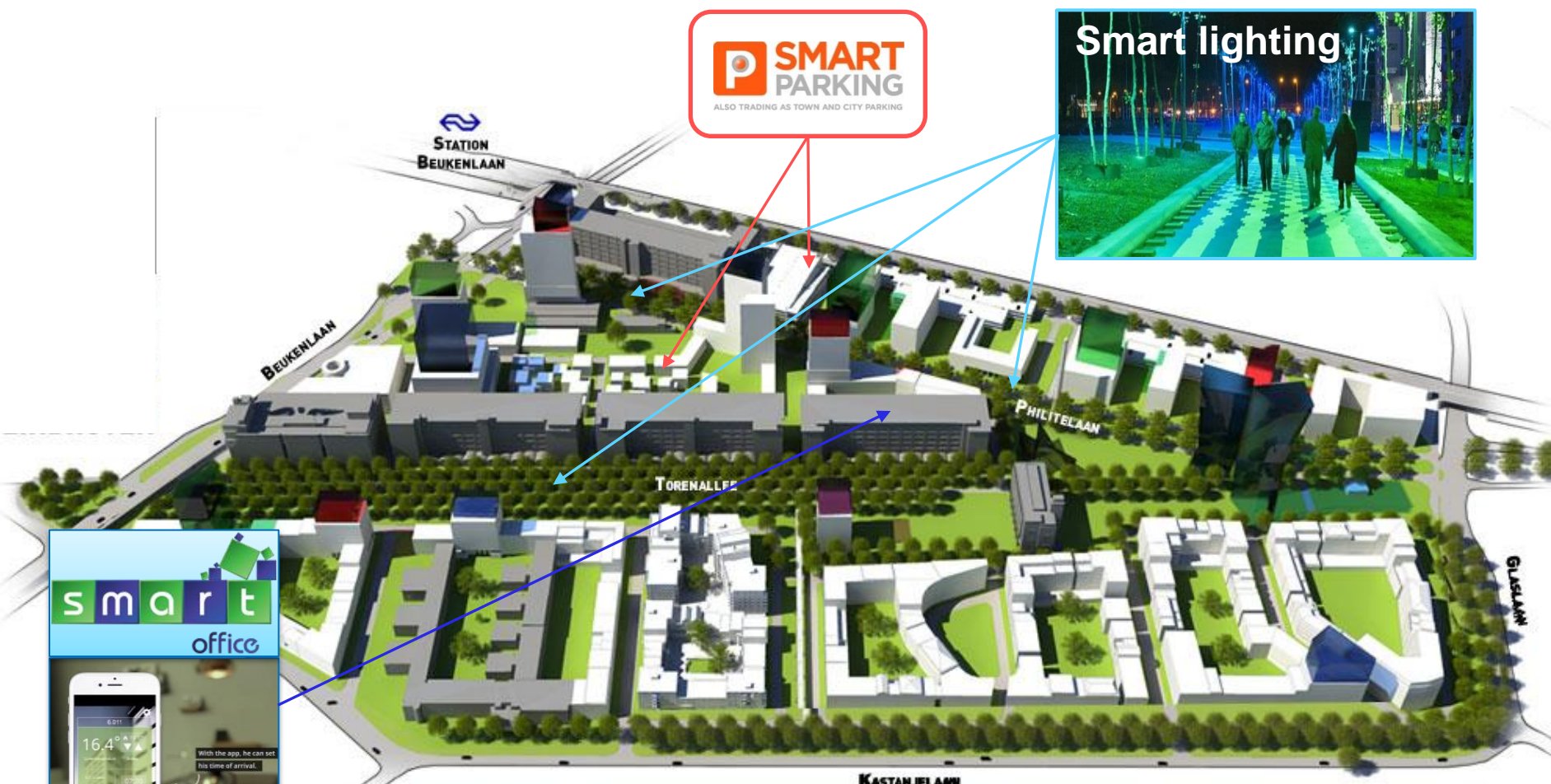3. secundaire fietsroute

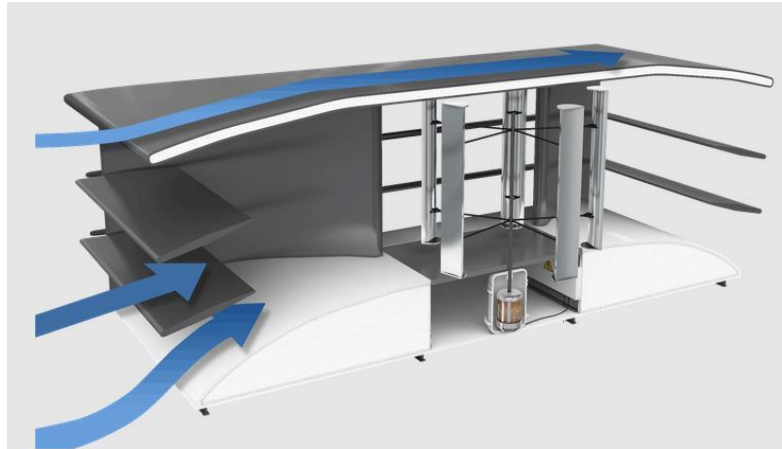# Quadruple Helix: Citizen, Government, University, Industry

Eindhoven consortium

- **Volker Wessels (RE developpers and construction)**
- **Park Strijp Beheer (PPP)**
- **KPN (Telecom)**
- **Woonbedrijf (Housing association)**
- **TU/e (University)**

Triangulum Strijp-S

Smart lighting

SMART PARKING
ALSO TRADING AS TOWN AND CITY PARKING

smart office

STATION BEUKENLAAN

BEUKENLAAN

PHILITELAAN

TORENALLEE

KASTANJELAAN

GLASLAAN

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Eindhoven
University of Technology
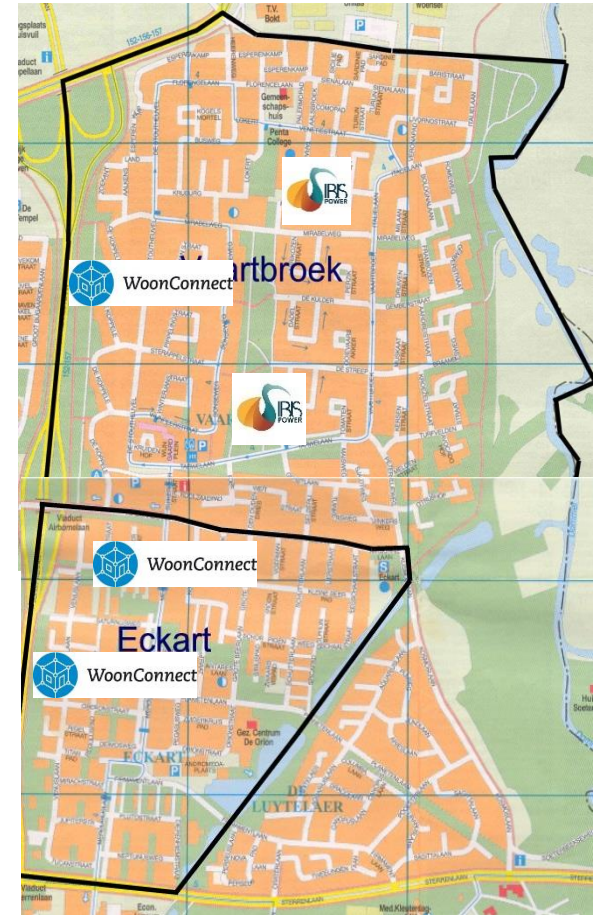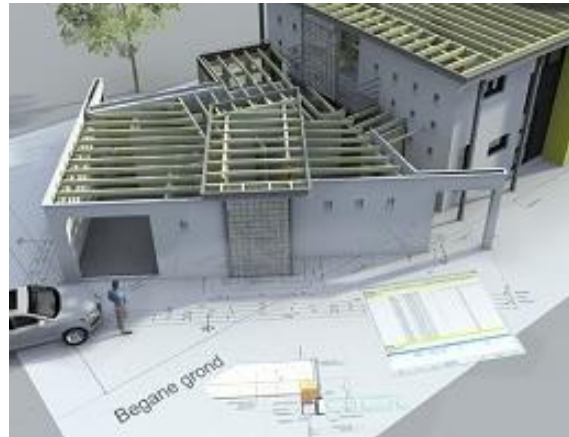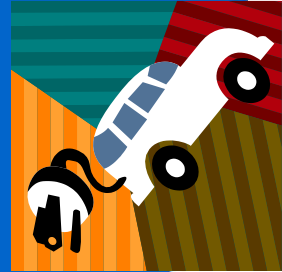
Triangulum Eckart-Vaartbroek

Energy

- **Integration of sustainable energy supply and soil cleaning (Strijp-S)**

- **Renewable energy based CHP for office and industry buildings (Strijp-S)**

- **Intelligent work place lighting/heating control (Strijp-S)**

- **Retrofitting 200 houses with user assistance (Eckart/Vaartbroek)**

- **Installation of PV, Wind turbines and distribution through Local Energy Cooperative (Eckart/Vaartbroek)**

Mobility

- **Smart charging and parking management systems for e-vehicles (Strijp-S)**
- **Mobility management (Strijp-S):**
  - **Routing and signing**
  - **Guidance and payment**
  - **Green alternatives to car transport**
  - **Stimulation of car sharing**

TU/e Technische Universiteit **Eindhoven** University of Technology

ICT

- **Further development of the Eindhoven Socrata open data platform**

- **Woonconnect tool application: 1300 privatly owned houses, 2653 rental houses (Eckart/Vaartbroek)**

- **Integration of fibre-optic data infra structure: intelligent public lighting, parking, domotica, entertainment (Strijp-S)**

- **Development of new services/applications**

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Eindhoven
University of Technology

Triangulum Outlook

- **Real-life demonstrators at neighborhood level**
- **Boost start-ups**
- **Strengthening reputation Eindhoven**

TU/e Smart City Center

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