



**HOGESCHOOL
UTRECHT**

WSBE Regional developments

The Netherlands

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Scope – The Netherlands

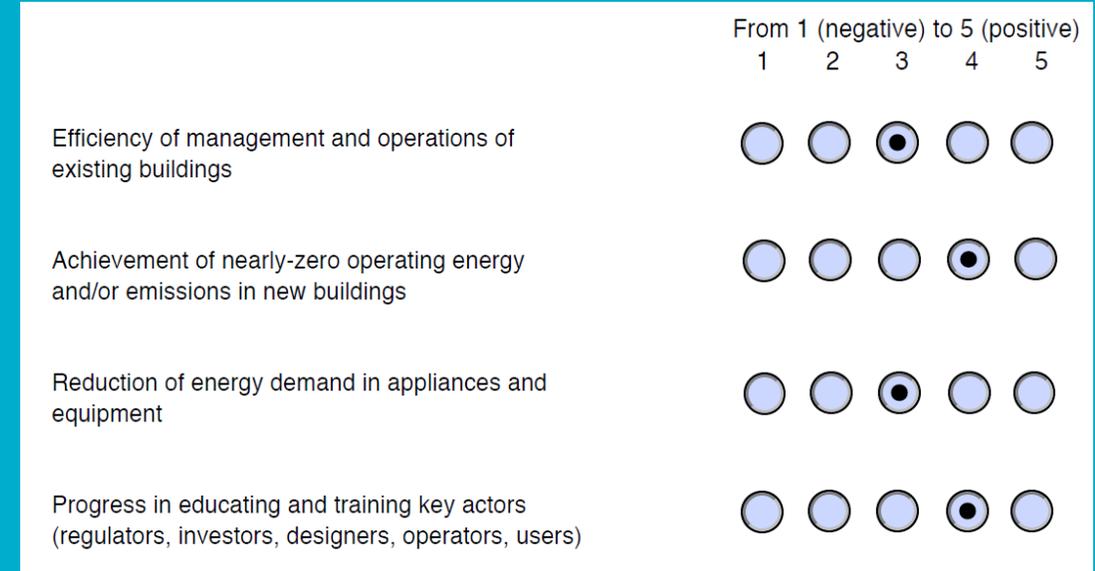
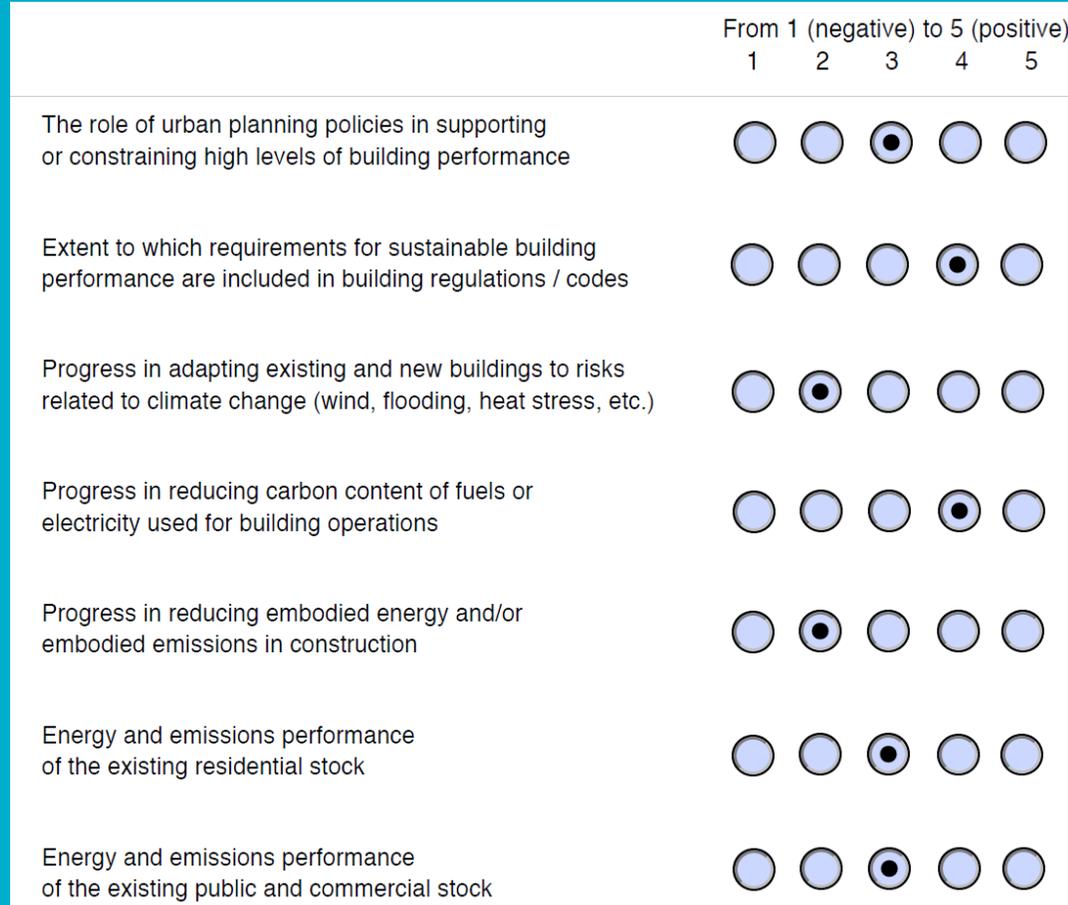
- State of the Built Environment
- Policy
- Current Practice
- Best Practice: SBE16 Conference “Transition Zero”

State of the Built Environment The Netherlands



- Population:
 - 17 Million
 - 498/km²
- Climate:
 - Average temperature: ≈ 10 °C (50 °F)
 - HDD ≈ 3000
 - Global warming -> flooding
- Building industry
 - New built $\approx 55.000-70.000$ per year
 - Renovated $\approx 100.000-150.000$ per year
- Energy costs, (per kWh_e)
 - Electricity price $\approx 0,21$ € (0,24 \$) per kWh_e 0,066 € (0,074 \$) per kWh_{th} (gas)
 - Energy bill $\approx 7\%$ of average income

State of the Built Environment The Netherlands



Policy: National Energy Agreement 2013



- Short term Overall Goals
 1. 100 PJ energy savings by 2020
 2. 14% share of Renewable energy by 2020
 3. 16% share of Renewable energy by 2023
 4. 1,5% energy savings per year
 5. Increase of jobs to the amount of 15.000
- Short term Built Environment Goals
 1. 2014: All houses have energy label
 2. 2016: At least 1000 Zero-on-the-Meter houses
 3. 2020: Social housing average label B, 80% label C or better
 4. Local authorities leading energy saving campaigns
- Long term: 2050 built environment:
 - Fossil free/No natural Gas used in buildings
 - ≈ Energy neutral

Current Practice

- Short term goals
 1. 100 PJ energy savings by 2020
 2. 14% share of Renewable energy by 2020
 3. 16% share of Renewable energy by 2023
 4. 1,5% energy savings per year
 5. Increase of jobs to the amount of 15.000
- Short term Built Environment Goals
 1. 2014: All houses have energy label
 2. 2016: Approximately 750 Zero-on-the-Meter houses
 3. 2020: Social housing average label B, 80% label C or better
 4. 2020: 50 PJ energy savings
- Long term: 2050 built environment
 - Fossil free/No natural Gas used in buildings
 - ≈ Energy neutral

within reach

Extra effort

Extra effort

On track

On track

On track

ambigue

Realised

On track

Difficult

Difficult

problematic

Unclear

40-50%



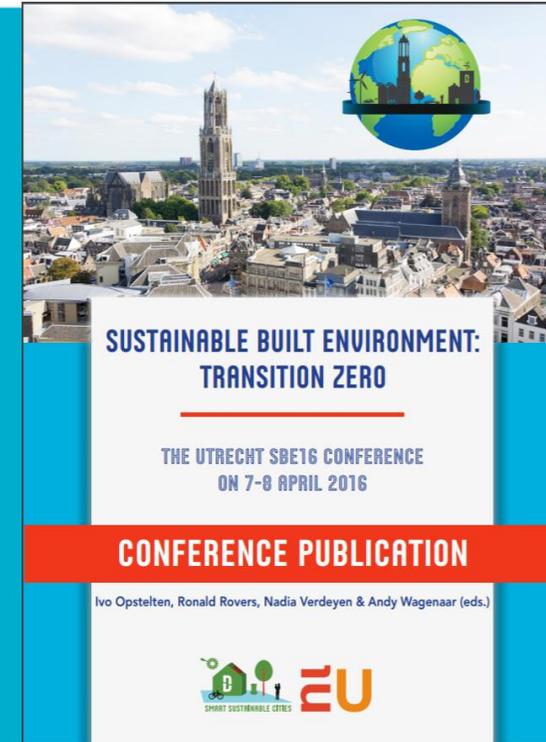
Best Practice: SBE16 Conference 'Transition Zero'



- Topics

- Upscaling: from prototypes to mass-market
- Governance
- Small Urban Area
- Circular Processes

- Common thread: Development of Zero-on-the-Meter houses
 - New Built & Renovation
 - Social housing and private home owners



Reframing energy & environment...



Woudn't it be nice?

- After a holiday week, your house
 - Is equiped with future-proof technology
 - Has a higher comfort level
 - Has an improved (exterior) appearance
 - Has an increased market value

All that, without increased (total) living expenses!



Best Practice: Smart Sustainable Renovation in 1 day



Payed for with the energy bill



Energy bill

175 € / month (196 \$/month)

=

Investment potential

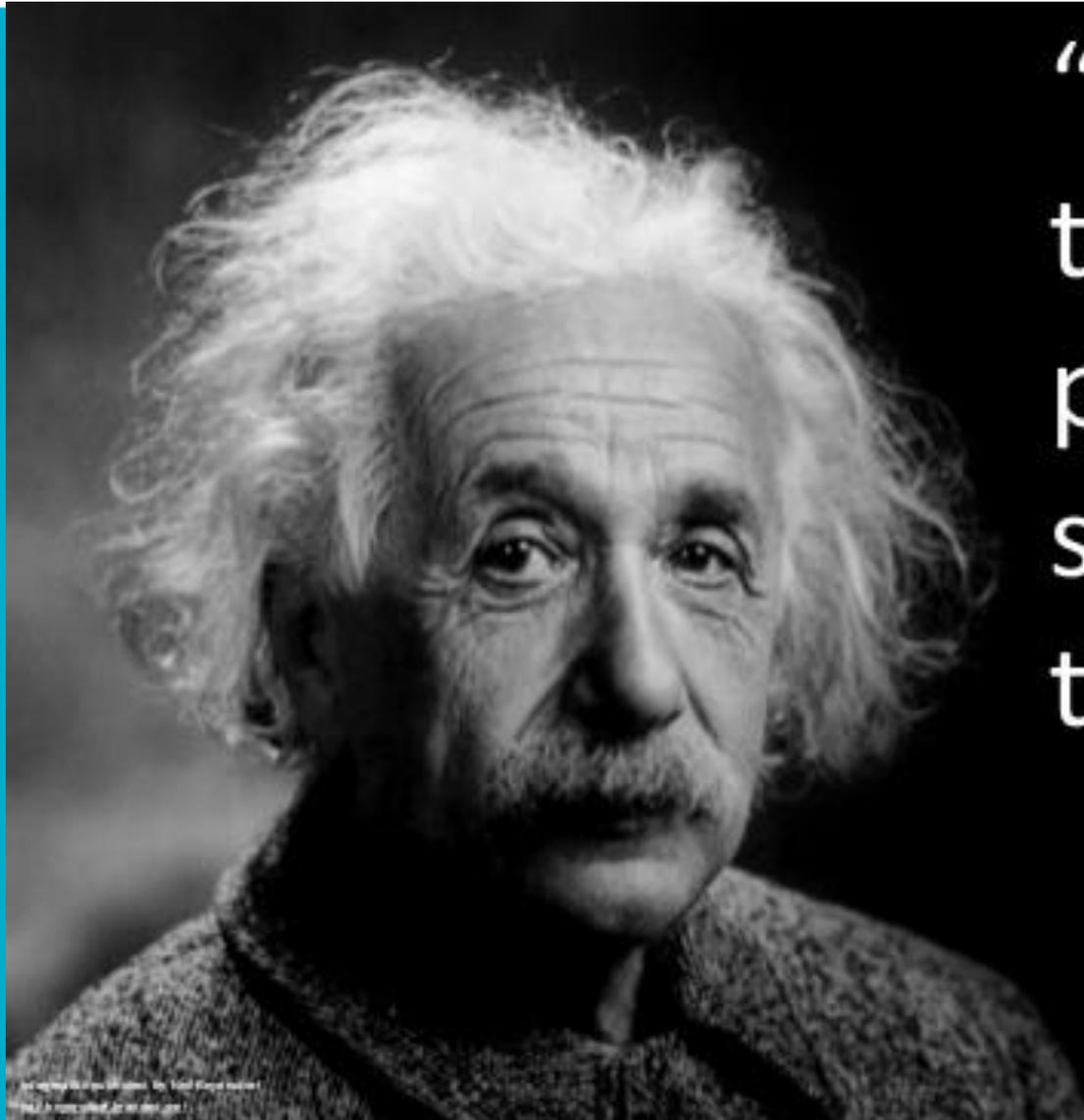
45.000 € (50.500 \$)

Best practice is ramping up..

- Ø–on-the-meter for new built houses > 10% in portfolio of large project developers
- ~ 1000 Ø–on-the-meter renovations have been carried out, 8000 are under contract, 14.000 are designated.



Monitoring progress...



“In theory,
theory and
practice are the
same. In practice,
they are not.”

Albert Einstein