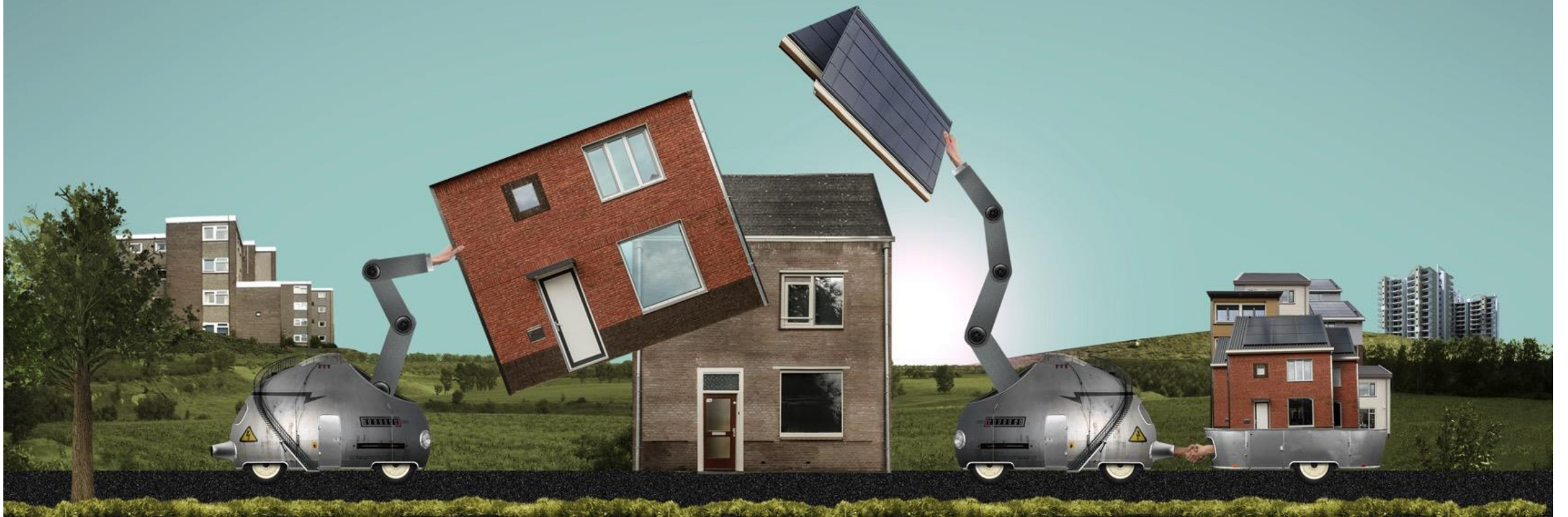


BRINGING STAKEHOLDERS TOGETHER TO ACHIEVE QUALITY RETROFIT AT SCALE

Jon Warren



**Energie
Sprong**



Funded by
the European Union

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Professionals in crisisbeheer, veiligheid en welzijn



> Market Parameters for Success



ASSURED QUALITY

Long-term energy, maintenance and product warranty



NON-INTRUSIVE

Refurbishment within one week



AFFORDABLE

For housing provider and tenant



DESIGN

Improve look & feel – desirable product

> Deep Retrofit in a Day



<https://www.youtube.com/watch?v=I3WBT2eAArI>

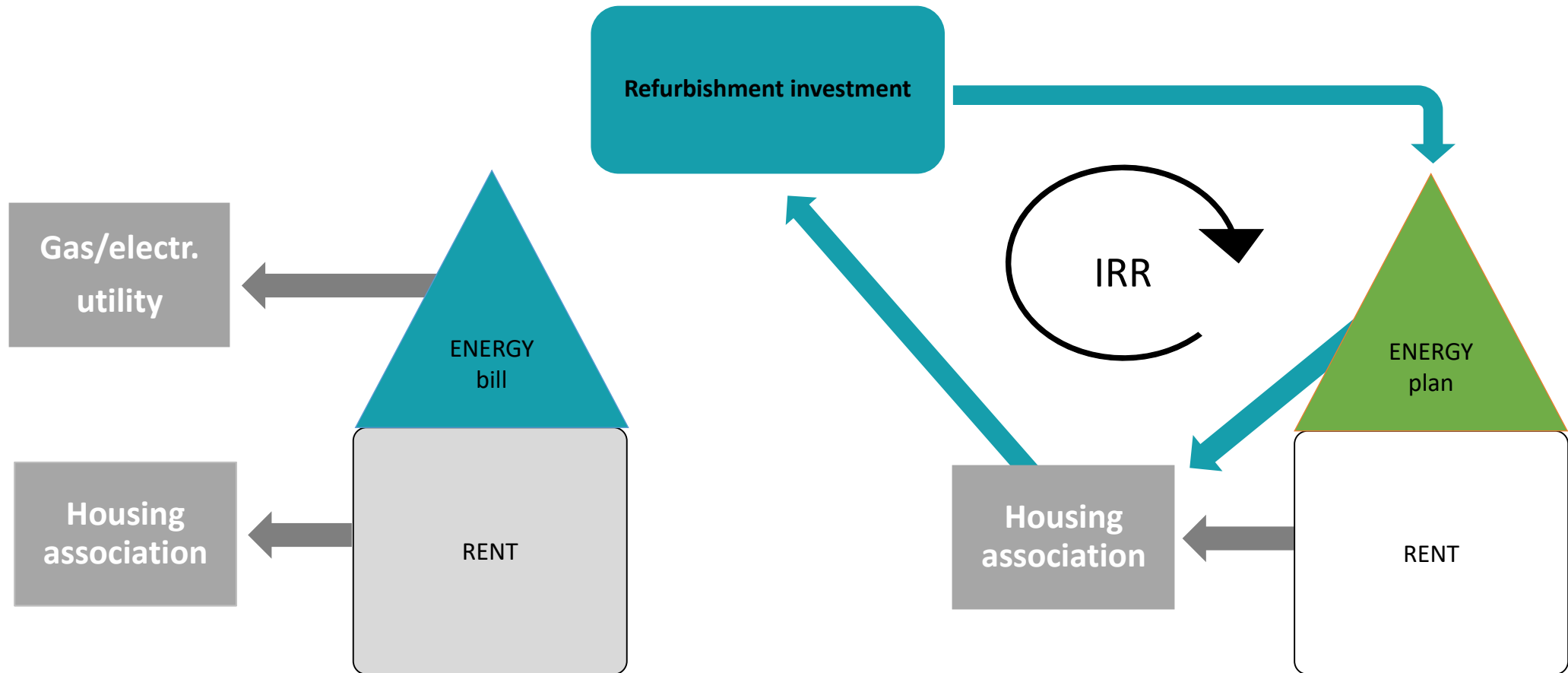
> Changing the Game

- Dramatic reduction in energy costs creates scope for energy service plan
- Strategic lifecycle approach to maintenance over longer term
- Performance outcomes rather than procurement outputs
- Encourage innovation and mass-market thinking



BEFORE REFURBISHMENT

AFTER REFURBISHMENT



> Together we are creating the UK market

Supply

We have recruited key industry partners to develop high performance innovative solutions...



Demand

...and progressive housing providers to create early market demand.



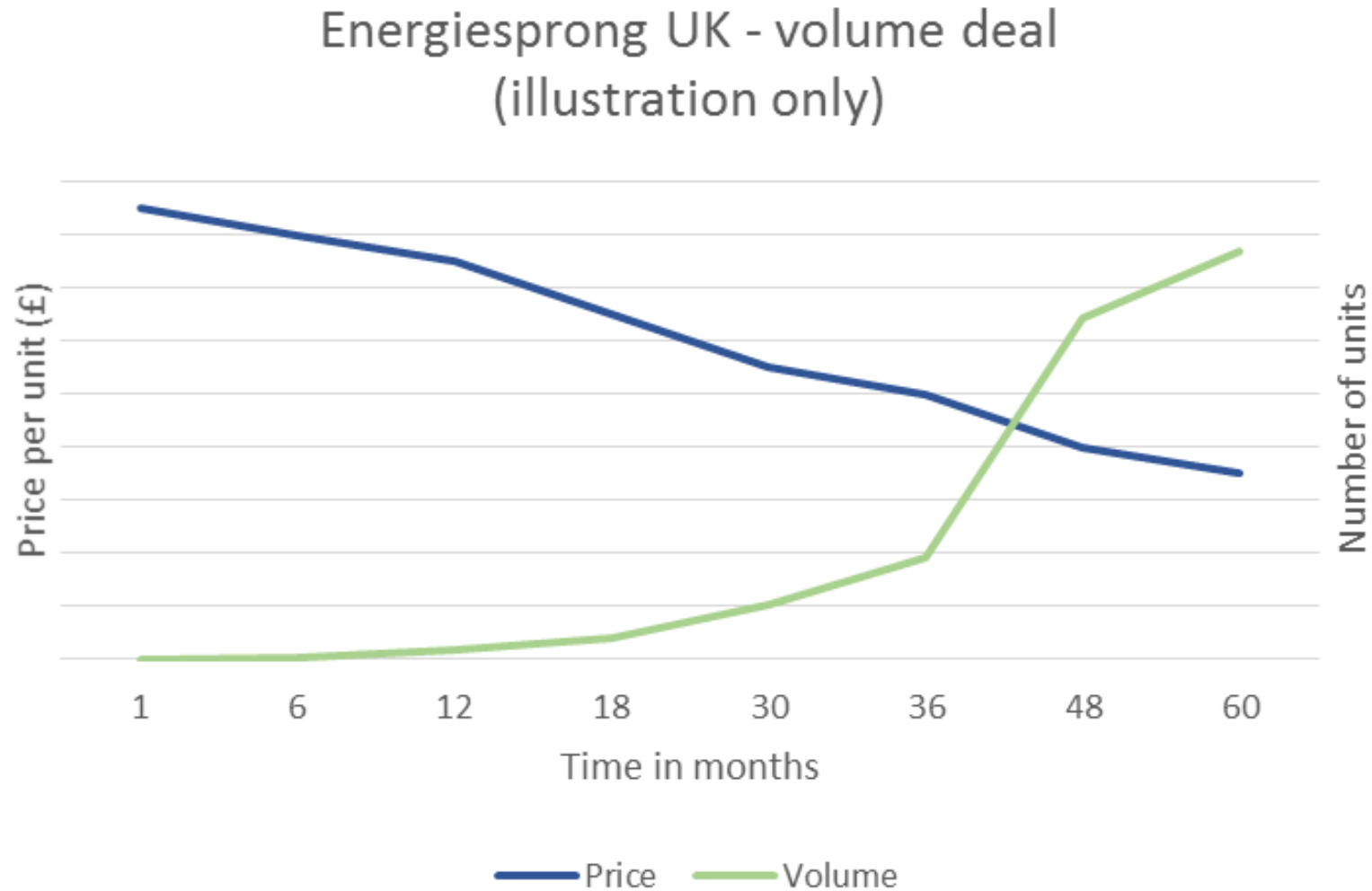
> Performance Outcomes rather than Standards

Air-tightness	0.6 ACH @ 50 Pa
Surface temp (windows)	>17°C
Summer overheating	Max 10% >25°C
Ventilation	~30m ³ /hr person
Heating	15 kWh/m ² /yr
Primary Energy	120 kWh/m ² /year

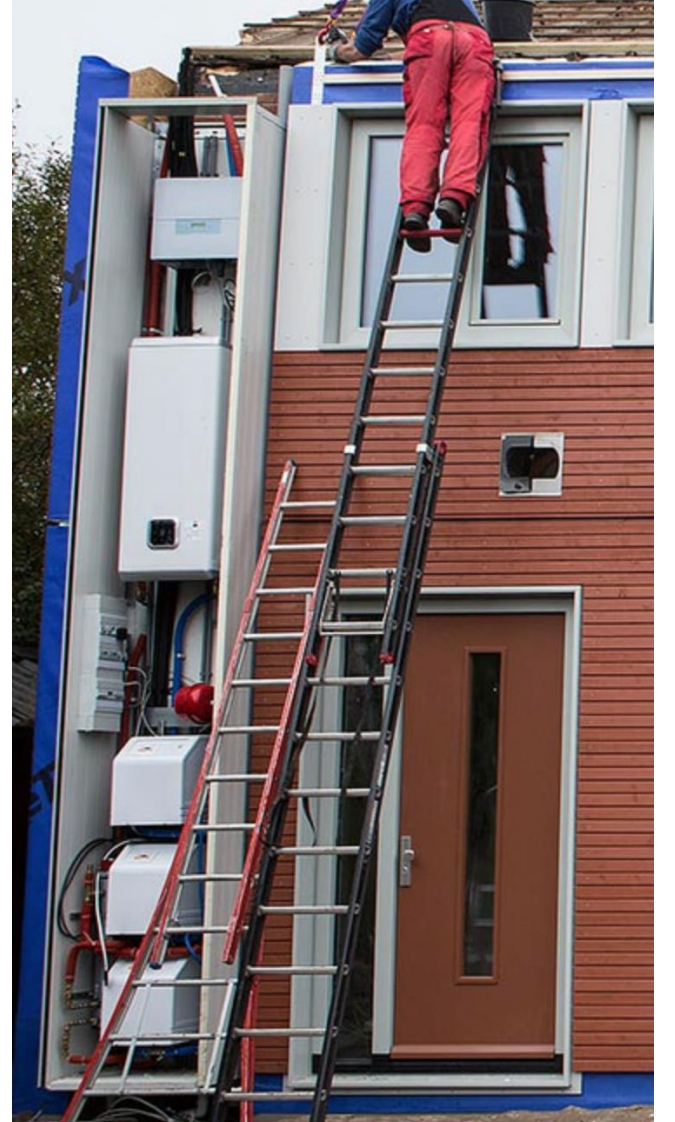
External Walls (W/m ² K)	0.18
Floor (W/m ² K)	0.13
Roof (W/m ² K)	0.13
Windows (W/m ² K)	1.4 (g=0.63)
Air tightness	5
Thermal Bridging (γ-value)	0.15
TER (kgCO ₂ /m ² /yr)	18.72
DER (kgCO ₂ /m ² /yr)	47.18
TFEE (kwh/m ² /yr)	54.26
Ventilation	Natural (with extract fans)

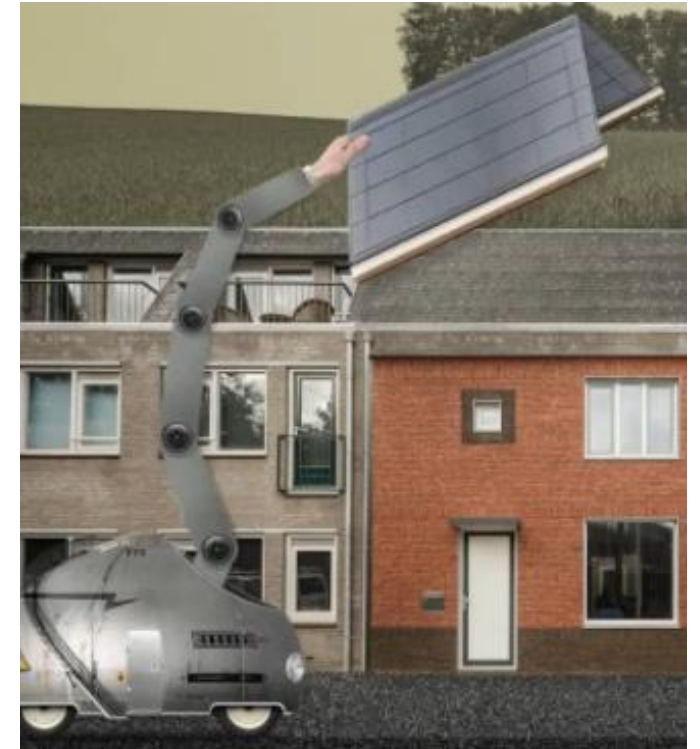
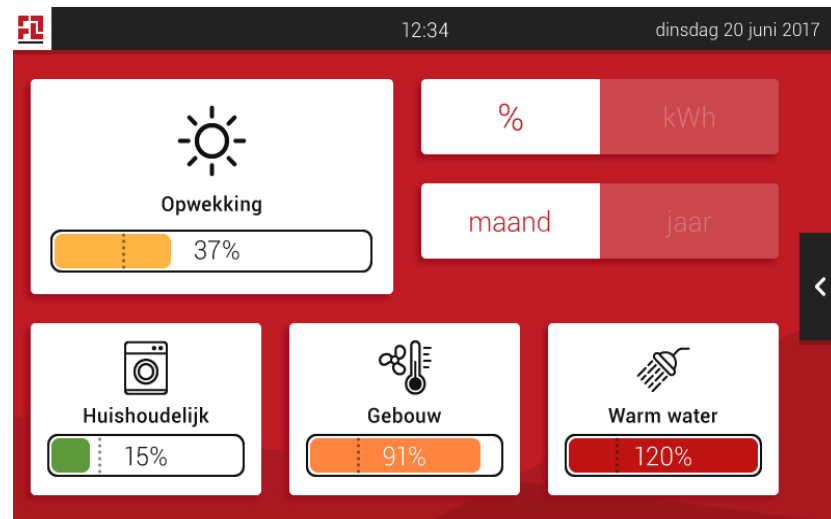
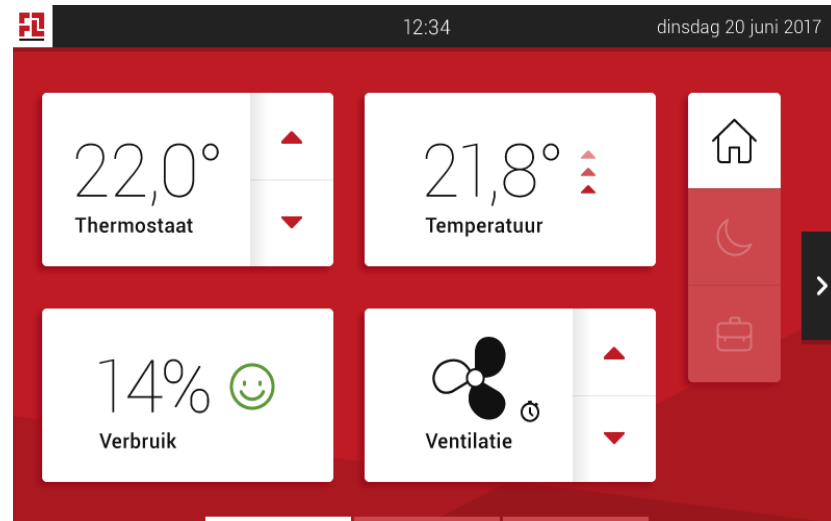
Property	Performance Level
Thermal performance	<30 kWh/m ²
Hot water	140 litre @ 45°C
Heating levels	21°C/18°C
Power allowance	2,300 kWh
Net consumption	<1,500 kWh
Noise in-property services	<30dBA
Noise outside	<42dBA
Summer overheating	over 26°C no more than 11 days per year
Monitoring	Live/historical temperature, hot water and electricity consumption
Humidity & CO ₂	New build ACH rate
Installation time	<10 days
Energy and performance warranty	30 years

> Begin with the end in mind: Demonstrators leading to market volume











V1: 2 WEEKS



V2: 1 WEEK



V3: 1 DAY

> Progress in UK

- > Nottingham: first Energiesprong homes outside the Netherlands
- > c300 demonstrators in pipeline
- > Major steps forward in procurement, contracting, legal
- > SAP A+ (106), 95% emissions reduction
- > Establishing a supply chain
- > New build specification ready
- > Working towards a **volume deal**





Working together to deliver ultra-low energy homes



Stay in touch

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