

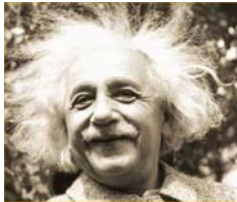
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Structure

- Generating new ways of thinking
- Ideas we **'think of'**, ideas we **'think with'**
- Sustainable building design performance criteria
- Analysis – targets – options – evaluate - optimise

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Generating new ways of thinking

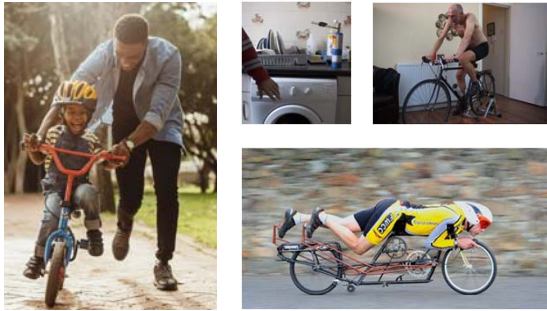


- We cannot solve our problems with the same thinking we used when we created them.

Albert Einstein

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Ideas we 'think of', ideas 'we think with'



<https://cyclinguphill.com/jzrame-ebree-biography>

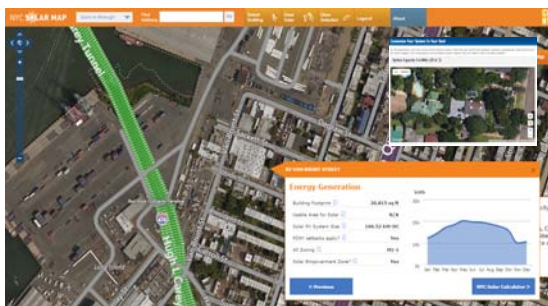
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Rainwater harvesting capability



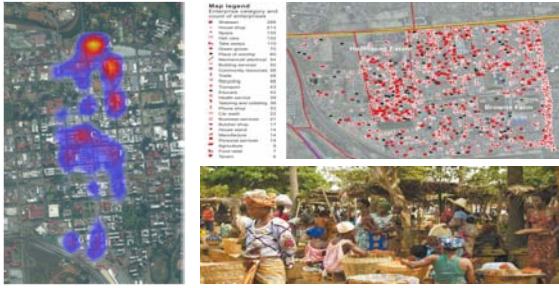
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Solar capability



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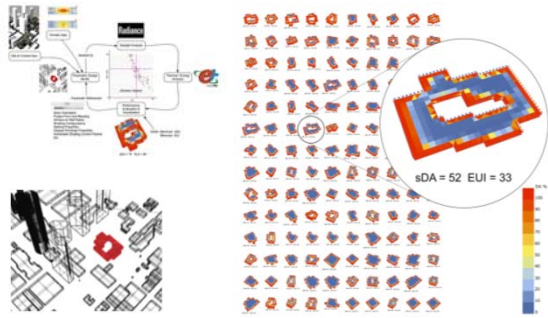
Patterns of Use



Gibberd, 2016, Integrating Informal Trade, Sustainable Livelihoods Foundation

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Modelling



Rami K. and Schwab S. (2017) Effective Daylighting with high-Performance Facades. Emerging Design Practices. Springer International Publishing, Switzerland, 209 pages.

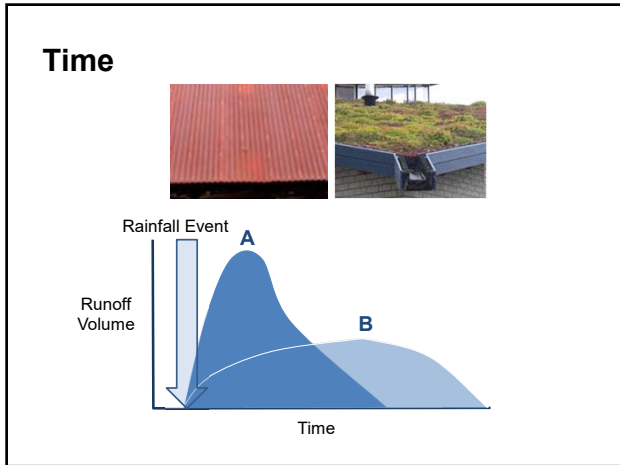
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Generating form

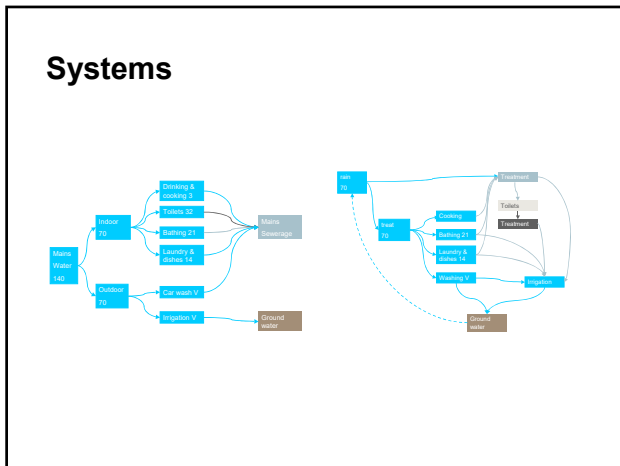


Richard Rogers, Mallorca

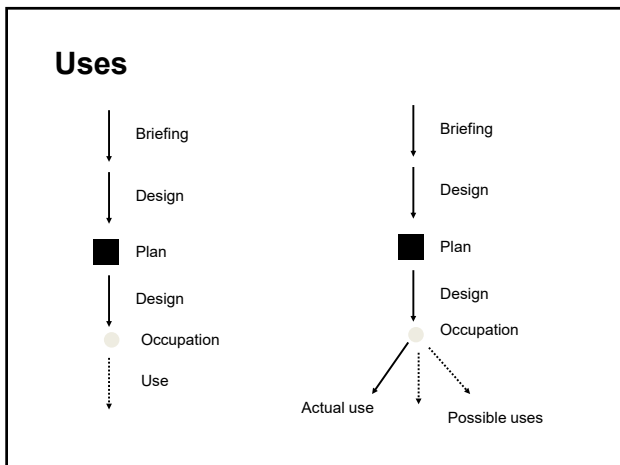
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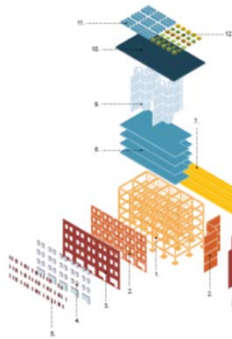


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Circular economy



Gibberd, Westerholm, Huovilla, Hakaste. 2022. Circular Built Environments

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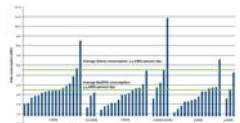
Sufficiency



Johnny Miller

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New ways of living and working



- 45% less energy (3.4kWh/person/day)
- 50% less water (87l/person/day)
- 60% waste recycled (4.5kg/person/week)
- 86% buy organic food
- 36% grow some of their own food
- 84% better community facilities
- 60% less car ownership

<http://www.oneplanetcommunities.org/wp-content/uploads/2010/03/bed2ED-seven-years-on-low-res-final.pdf>

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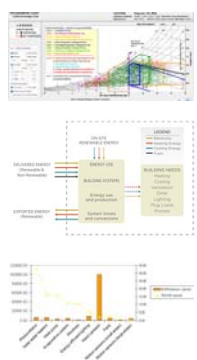
Sustainable building design performance criteria: BEST, BREEAM, Greenstar, LEED, SBAT, WELL

Air	Energy	Shelter
Water	Water	Mobility
Nourishment	Waste	Food
Light	Materials	Goods
Movement	Biodiversity	Services
Thermal Comfort	Transport	Waste
Sound	Resources	Biocapacity
Materials	Management	Health
Mind	Local Economy	Knowledge
Community	Services and Products	Employment
Innovation	Access	
	Health	Others?
	Education	
	Inclusion	
	Social Cohesion	

WELL certified, Gibberd

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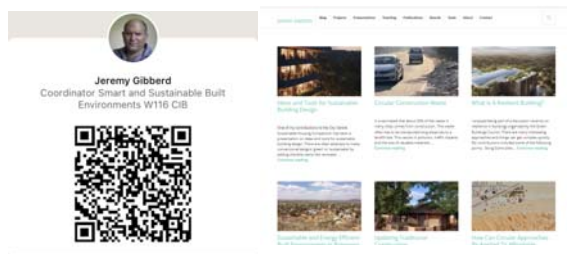
Analysis – targets – options – evaluate - optimise



- **Rationale** for targets based on analysis
- **Identification** and **evaluation** of options
- **Optimisation** through refinement
- **Provide evidence** of process, optimum solution and benefits
- Climate analysis, passive environmental control strategies
- Energy, daylight and water modelling
- Local economy, jobs, food, health, education modelling

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Thank you, Questions?



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