



Amt für **Raumplanung**
Kanton Basel-Landschaft

Amtsleitung

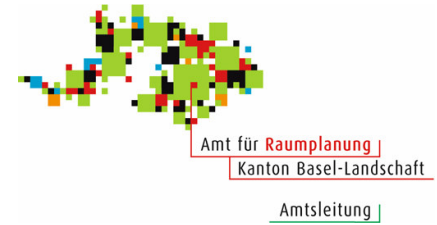
2000-Watt Society – the Swiss Vision for the Creation of Sustainable Low Energy Communities

45th Isocarp Congress Porto, October 2009

Susanne Fischer, Basel



Presentation Index



1. The Vision of 2000-Watt Society
2. The Basel Pilot Region
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The Vision – 2000 Watts, that's all we really need!



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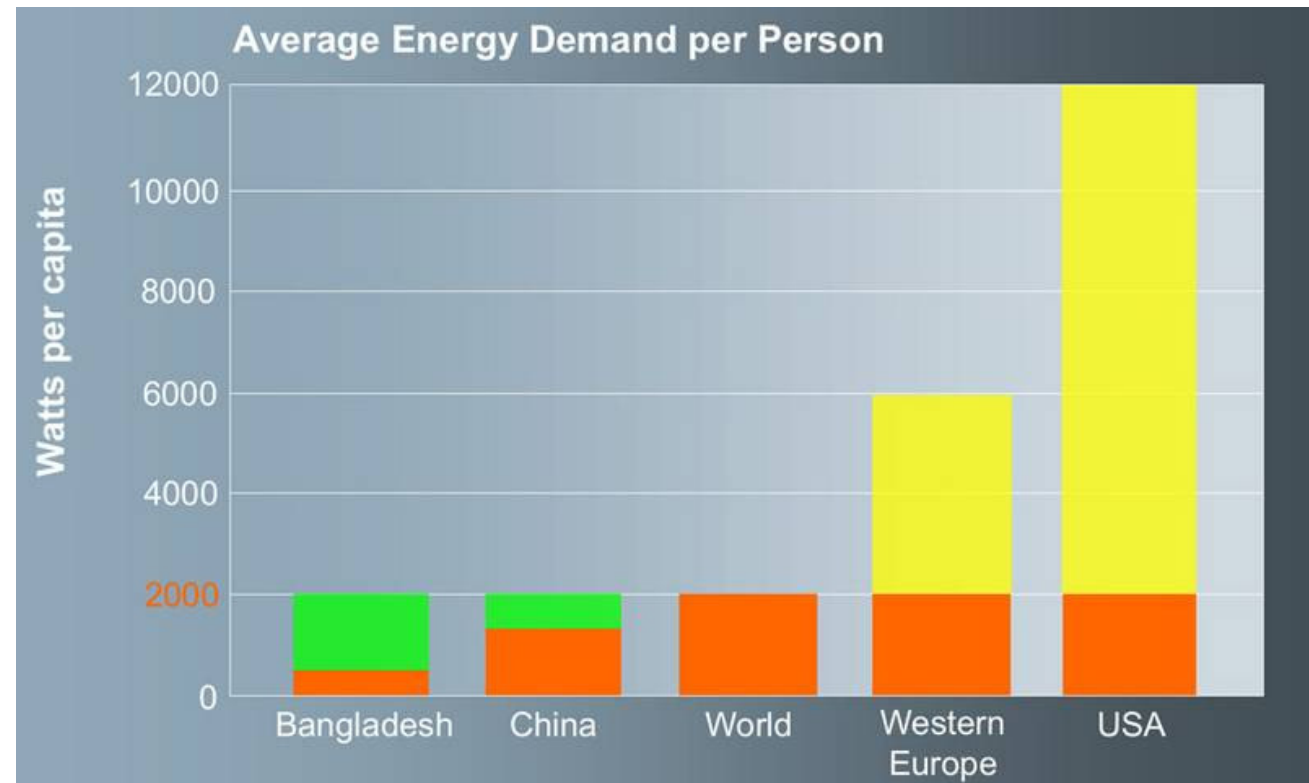
- Was created by Swiss Federal Institute of Technology (ETH), Zurich end of 1990s
- Is run by programme "Novatlantis" of ETH
- Target: energy reduction to 2,000 watts per person / year worldwide
- Target: no more than 500 watts per person / year derive from fossil fuels to reduce CO₂ production
- Target: time horizon is long-term



Why 2,000 Watts?



2,000 watts per person/ year are the current rate of total energy use on a worldwide average



5,000 - 6,000 Watts: Average Energy Consumption in Switzerland today



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Watts	Activities
1500	Living and office space (heat, hot water)
1100	Food and consumer goods
900	Public infrastructure
600	Electricity
500	Automobil travel
250	Air travel
150	Public transportation
5000 watts total (additional embodied energy)	



2,000-Watt Society – How to attain the Target?



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- Enhancement of material and energy efficiency, e.g. recycling, economisation of weight, substitution of highly-energy intensive materials
- Substitution of renewable energy sources for fossil fuels, e.g. hydropower, wind, solar, biomass, geothermal energy
- Low energy buildings and houses, e.g. renovation and construction with better thermal insulation, alternative energy sources
- New forms of lifestyle, e.g. low energy mobility, modal split management, using instead of owning



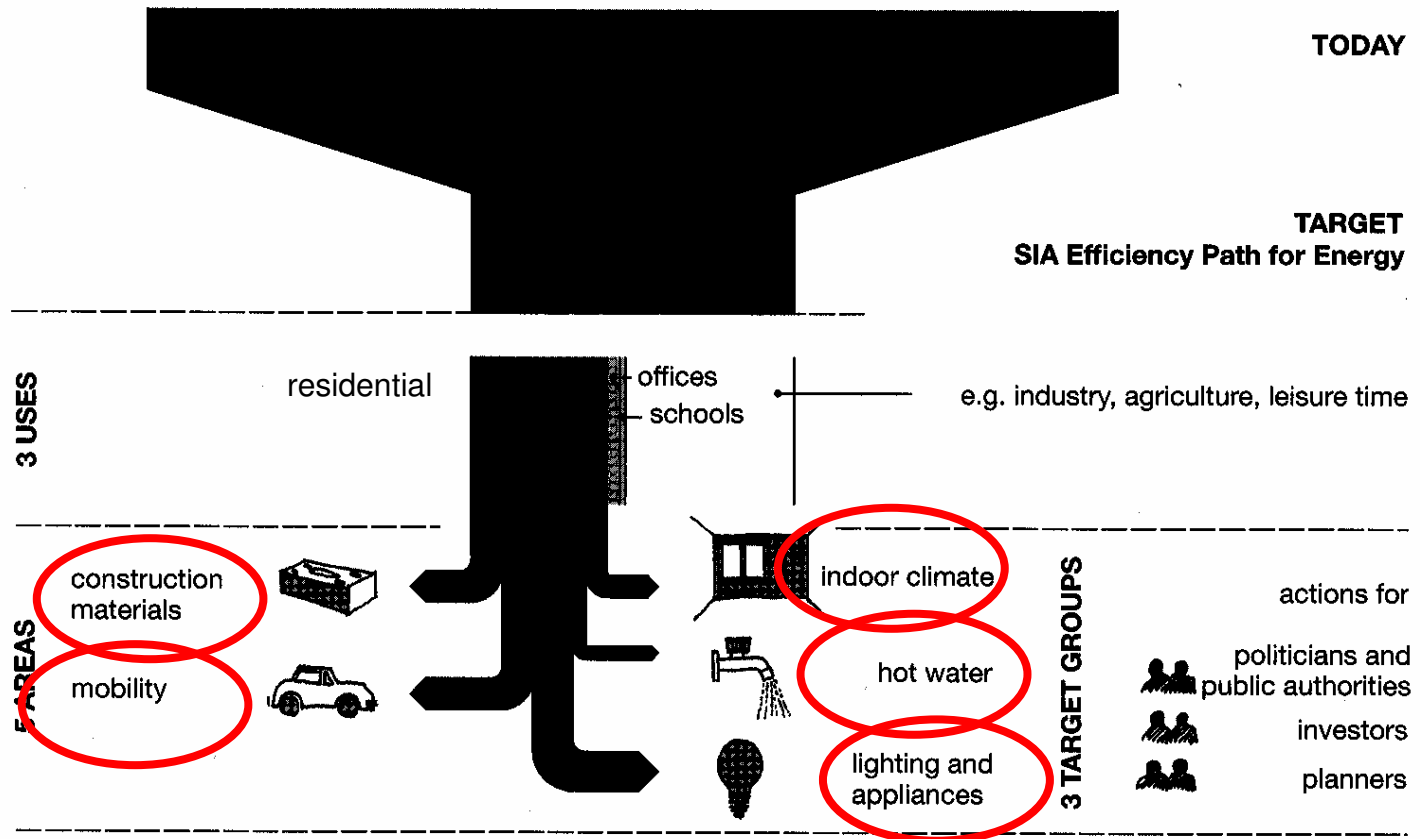
Fields Implementation in Urban Development



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>>> Consumer behaviour and industrial production is not part of implementation in the urban pilot projects of 2000-watt society



Basel Pilot Region – Test Drive to 2000-Watt Society



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- Implementation of the 2000-watt vision in urban planning and construction
- 4 pilot projects and 1 applicant project of urban redevelopment in Basel city districts
- Dreispitz = transformation of former logistic site to new urban district with services, housing, university institutes, culture events on 50 hectares

Masterplan of Dreispitz states 2000-watt society as development target



Case Study Dreispitz - Let's take 2000 Watts into Account



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The 2000-Watt Target for Future Dreispitz Buildings

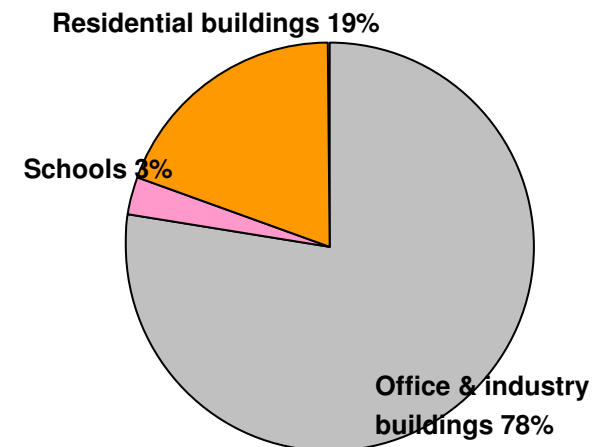


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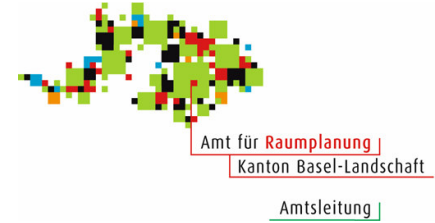
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- Development of 78% office + industry buildings, 19% residential, 3% schools
- Reconstruction on a rate 2.5% of existing buildings
- Same power production in future (mix of atomic, hydropower, coal etc.)
- Target achieved in 100-150 yrs., if passive house standard for all residential and school buildings and minergie standard for all office + industry buildings and renovations are applied

Future land use of Dreispitz development site



Swiss Energy Certificates



Minergie-P = Passive House Standard (60% reduction of energy consumption):

- Insulation 20-35cm, renewable energy, triple glazing, standard for domestic appliances, internal ventilation

Minergie (20% reduction of energy consumption):

- Insulation 20-25cm, partly renewable energy, double glazing, internal ventilation

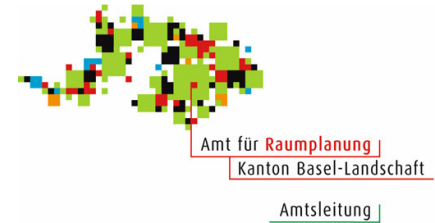
>>> Part of legal principle of new zoning on Dreispitz

>> Lighting and appliances standards

>> Mobility reduction



Challenges



- Target of 2000-watt society could only be achieved on a long-term basis due to slow replacement ratio of buildings
- Additional constructing cost for passive-house standards have to be cut off
- Comprehensive urban planning projects are necessary to combine energy saving construction with low emission mobility
- Passive house standards should be adapted to all future buildings and incentives are compulsory for renovations





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Thank you for your attention!

- www.dreispitz.ch
- www.minergie.ch
- www.novatlantis.ch

