

# **Energy-Efficient Refurbishment: motives and barriers for private home-owners**

Energy Efficiency and Renewables in Buildings –  
Challenges, Parameters and Successes  
from a British and German Perspective

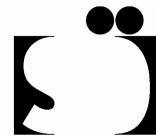
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Projektpartner:



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Förderung:



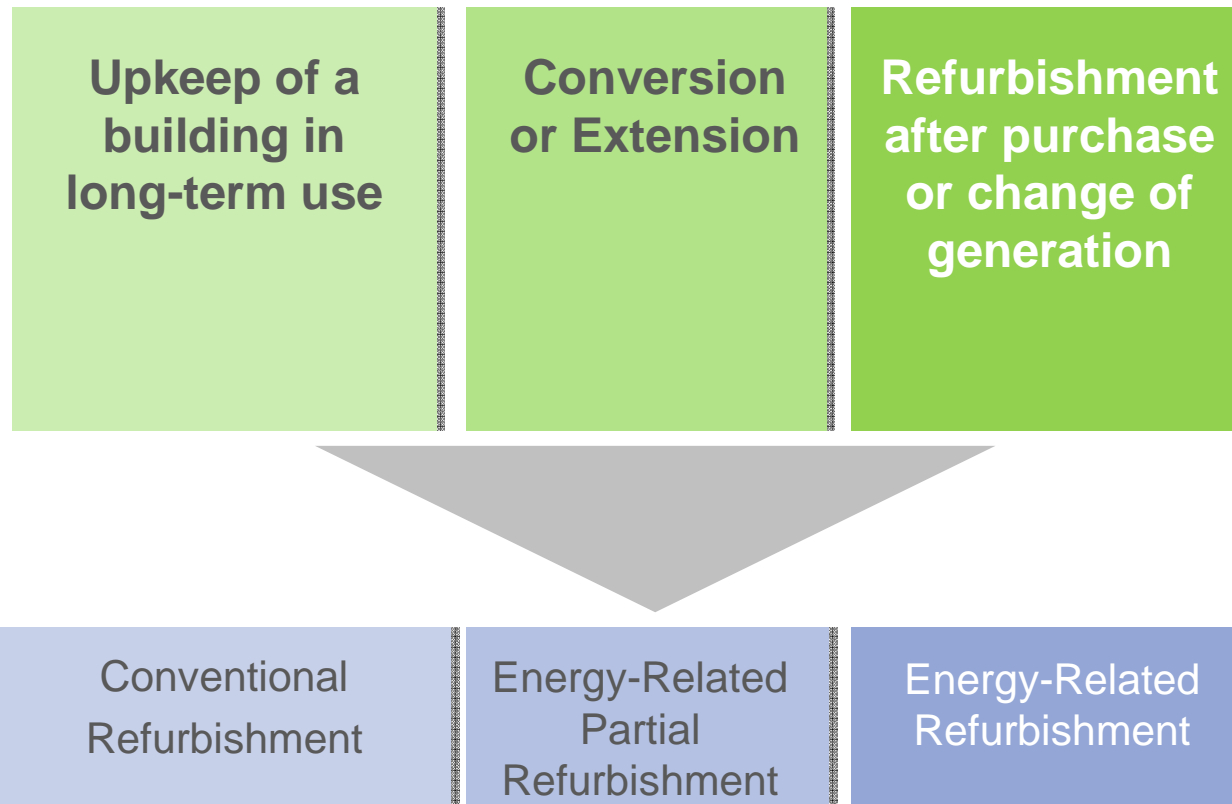
# Background to the problem

- Energy consumption for heating fell by 2.4% from 1995 to 2006
  - Marked improvement in energy efficiency
  - Improved buildings and heating systems
  - Change in user behaviour (lowering of room temperature)
- Dramatic rise in residential energy costs
  - € 1,556 per household/year (2007)
- Major savings potential of the 14.5 million single and double occupancy houses
  - Energy-related modernisation can reduce energy requirements by up to 80%
- Low rate of refurbishment
  - Only about 1-2% undergo energy-related refurbishment each year
- Inadequate refurbishment efficiency
  - Only a third of the savings potential is realised during refurbishment

# Empirical Design

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- Empirical survey on refurbishment decisions of private home-owners
  - Stage I
    - 44 qualitative interviews
    - Keeping up and refurbishment measures within the last three years
    - Energy efficient refurbishers
    - conventional refurbishers
    - Field work: summer 2008
  - Phase II:
    - standardised survey
    - 1.000 home-owners
    - Field work: beginning 2009

# Starting Points and Refurbishment Methods



# Starting Point and Stage of Life

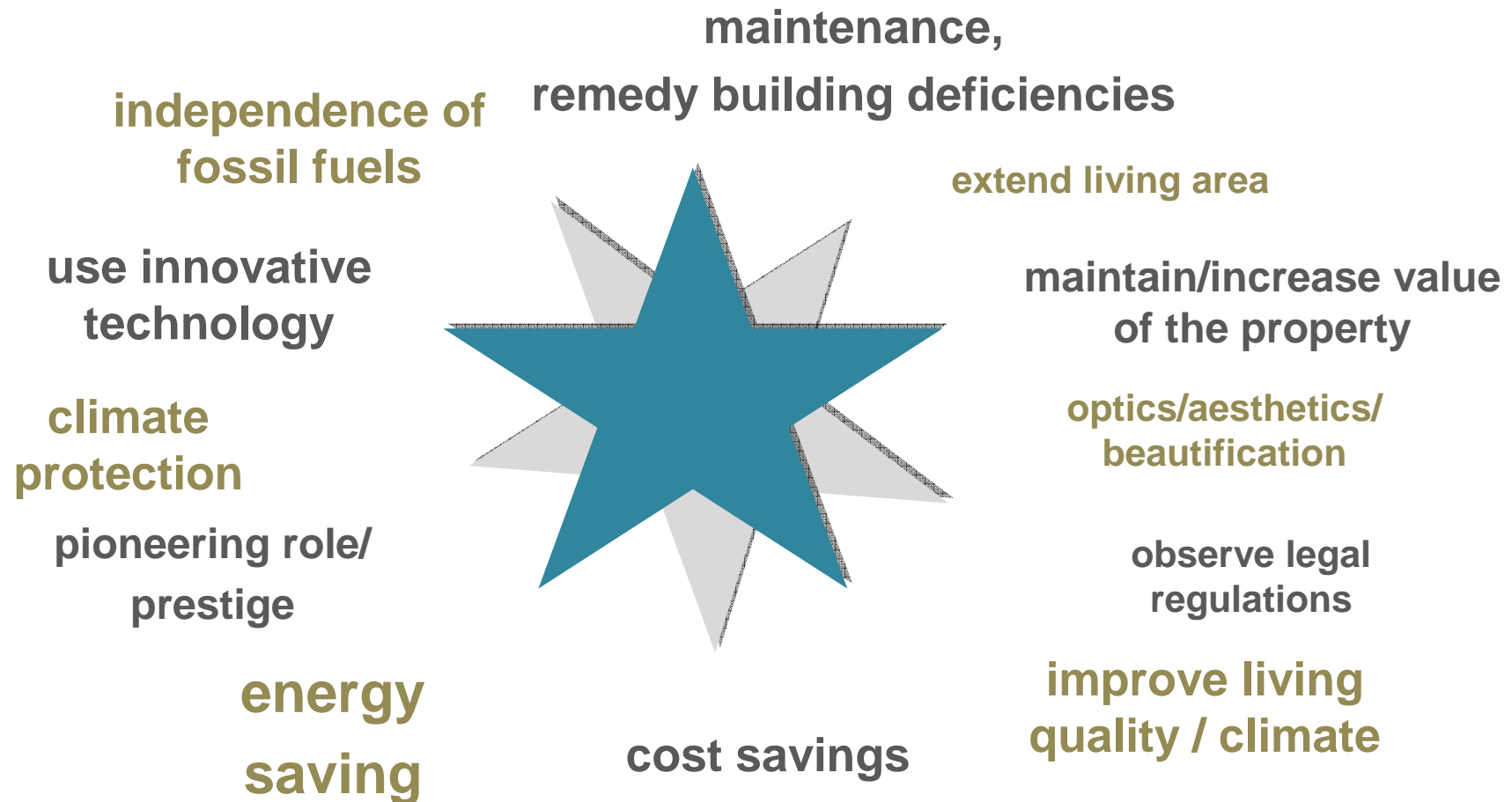
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- Private home-owners are relatively old
  - Ratio of home-owners in Germany: 43 %
  - Highest ratio in the 60+ age group (55%)
- Different age structure of modernisers
  - Biggest group is the over 60-year-olds
  - Also above average: 50-60-year-olds and 30-40-year-olds (Technomar 2005)
- Narrow time window for economical energy-related refurbishment
  - dependent on age of building (maintenance cycle)
  - ... and biographical situation/future perspective of home-owners

# Starting Point and Stage of Life

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- Upkeep of a property in long-term use
    - Maintenance
    - Frequently individual measures
    - Limited budget
    - Probably higher age groups
  - Energy-related refurbishment in the case of conversion/extension and transfer of ownership
    - Readiness to take more extensive measures
    - Probably younger age groups
  - Transfer of ownership as time window
  - Uncertain biographical situation prevents extensive refurbishment
  - Own input important for low-income households in particular

# Motives and Motivational Alliances: Energy-Related Refurbishment



# Motives and Motivational Alliances: Energy-Related Refurbishment

- Different motivation for conventional and (partial) energy-efficient modernisers
- Conventional modernisers:
  - Main motivation: functionality, optics and strong cost element
  - Energy-efficiency not on maintenance agenda
  - Not aware of the problem (“already do a lot”)
- Considerable potential for energy-related refurbishment
  - Wide-spread desire to consume less energy
  - Numerous motives
  - Climate protection, environment and sustainability only effective with the already “convinced”
  - Frequently: energy efficiency as additional benefit, pragmatic compromise or concession to limited financial resources
  - Positive aspect: trend towards energy efficiency and climate protection

# Barriers and Obstacles



# Modernisation decision

- Energy-related refurbishment decision as a complex interplay of economic, social, psychological and technical factors
- Subjective preferences
  - Weighing up costs and benefits on the basis of emotional desires and objective criteria
  - Improvement in use value is central
  - Main concern: liquidity and short-term costs
  - Life cycle costs rarely taken into consideration
- Often inadequate knowledge of financial support options
  - ➔ Highly subjective viewpoint in judging financial scope and latitude
  - ➔ Attitude and lifestyle play a major role

# Conclusions

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- Distinguishing between different approaches
  - Address different forms of refurbishment (“top refurbishment” v. “general refurbishment”)
- Offers of information and advice aimed at target groups
  - Independent and professional advice for energy-related refurbishment
  - Energy advice as part of overall refurbishment advice
- Reconsider role of financial support
  - “Incentive” for energy advice and higher energy-efficiency standards
  - Support programmes to take account of own input
  - Innovative financing models for older home-owners
- Establishment of quality standards for energy-related refurbishment
  - Building regional competence networks