

LIFETIME ENGINEERING OF BUILDINGS AND CIVIL INFRASTRUCTURES IN DENMARK

25 per cent of all Danish waste stems from the building and construction sector and mainly consists of concrete, asphalt, stone and wood. Over the past 15 years, Denmark has successfully reached an 89 per cent recycling rate for this sector by introducing a waste tax for non-recycled waste and by working out an agreement with the Danish Contractors' Association on selective demolition of building materials. As of today, 10 per cent of the waste is land-filled and one per cent undergoes special treatment (www.mst.dk). In collaboration with the Danish concrete industry, the Danish Technological Institute (www.danishtechnology.dk) furthermore has examined the possibilities of preventing downcycling by reusing building waste at the same level it originally was intended for, and to incorporate waste from other sectors (www.greenconcrete.dk). A useful tool in designing environmentally sound buildings is the computer programme BEAT 2003 - Building Environmental Assessment Tool - (www.dbri.dk → Publications). This programme takes into account the use of materials and energy through all life phases of the building based on an assessment of physical durability. However, durability also depends on the usability in the longer term, and the flexibility of durable buildings opens up for new uses of old frames, which accommodate both the community and the wishes of growing families. Durability furthermore depends on aesthetics. Durable designs survive short-term trends, their good materials patinate beautifully and should not be replaced if they are worth preserving. In a sustainable context, long lifetime of buildings is preferable unless their environmental performance gets outdated. Sustainable buildings are designed for very low uses of energy such as the terraced houses designed by Schmidt, Hammer & Lassen (www.shl.dk) in collaboration with engineers at Birch & Krogboe (www.birch-krogboe.dk) and Arup (www.arup.com). This poster shows the terraced houses which use less than 15kWh/m²/year for heating and ventilation - the results of a competition initiated by the Danish Centre for Urban Ecology (www.dcue.dk) and part of the project Sustainable Housing in Europe (www.she.coop). The main concerns of architecture and lifetime engineering are **DURABILITY - UTILITY - BEAUTY - SUSTAINABILITY**



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- CSTB Centre Scientifique et Technique du Bâtiment, FR
- Imperial College of Science, Technology and Medicine, UK
- Universität Karlsruhe (TH), TMB/Facility Management, DE



Thematic Network LIFETIME in figures:

- Working period: 1/6/2002 - 31/5/2005
- Participation: 96 partners from 28 countries
- Plenary workshops: 2002 Norway, 2003 Finland and 2005 France
- 25 National Dissemination Groups
- Funding from 5th Framework Programme:
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