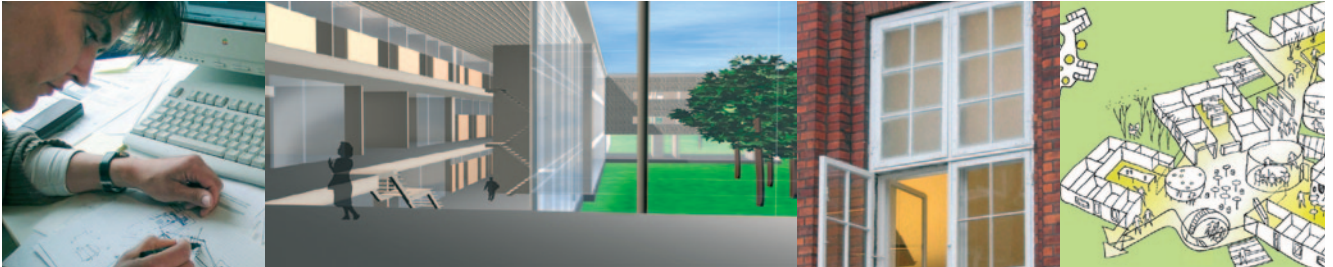


Invitation to cooperation



Research-based knowledge that improves
buildings and the built environment

www.english.sbi.dk



Danish Building Research Institute
AALBORG UNIVERSITY

Research that works



The built environment concerns everyone. Buildings create the framework for our well-being and welfare at home, at work, in shops and institutions. In Denmark we have 650 million square metres of buildings, half of which are dwellings. For most families, the dwelling tops their list of expenditures, and housing-related expenses typically account for 20 percent of the household's consumption. The production value of new buildings as well as renovation and maintenance of existing buildings adds up to around DKK 140 billion annually, and in 2009 around 150,000 persons were employed in jobs relating to renovation and maintenance of existing buildings or the construction of new buildings. Development and innovation in the housing and buildings sectors are therefore crucial for our well-being, growth and welfare.

The Danish Building Research Institute (SBI) develops and communicates research-based knowledge about how the demand for housing can be satisfied and how buildings can be improved; this has been SBI's aim since it was established in 1947. Our research efforts are based on applied research at an international level, and our clients are authorities, consulting engineers and contractors, manufacturers as well as clients and property managers. Throughout the years, SBI has been known for its independent position and its close relation to practice: the many enterprises and organisations of the housing and building sectors. 'SBI Guidelines' are recognised by the building industry for their accurate and buildable solutions that meet the requirements of the authorities.

SBI merged with Aalborg University in 2007. We share a set of unique values concerning quality, interdisciplinarity and communication through cooperation with industry, authorities as well as other research and educational establishments both nationally and internationally. It is the ambition of SBI to further strengthen the relation between research and practice in the next few years.

This invitation to cooperation briefly presents our fields of expertise. If the invitation arouses an interest in a specific partnership, we are available for further discussions.

For more information about SBI, please visit www.english.sbi.dk.

Mission

SBI develops research-based knowledge to improve buildings and the built environment.

Vision

SBI is to be internationally recognised for the excellence of its applied research. Our research is to be utilised in public-sector consultancy, by communicating it to the housing and building sectors and via education.

SBI wants to be recognised by the Danish public as the most important research institute within housing and building research.

Principal tasks

- Research
- Public-sector consultancy
- Education
- Communication

Thorkild Ærø
Managing Director

Competencies

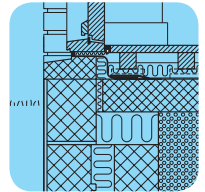


Construction and health, where the focus is on increased quality and productivity as well as improved indoor climate in new and existing buildings

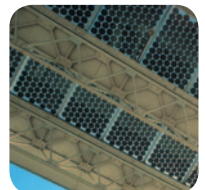
Energy and Environment, where the focus is on minimising the energy consumption and environmental impact load from new and existing buildings

Town, housing and property, where the focus is on the interests and qualities that emerge in connection with settlement, urban development and the use of buildings

Research on construction and health seeks to improve the quality of buildings in terms of building technology, safety, durability and use. This is achieved by formulating performance requirements based on experience and research-based knowledge as well as performance tests. Emphasis is put on the safety of structures, the performance of the thermal envelope and conditions relating to building physics. Indoor climate research is central for human health and includes the acoustic quality in buildings, improving air quality as well as limiting adverse exposures of the buildings' occupants. The connection between building materials and indoor climate is another research theme. Moreover, research should lead to improvements in building productivity and building processes and contribute to the industry's development, for instance through research on its organisation, forms of cooperation, planning and innovation. Special emphasis is put on the use of digital tools and building models as well as the documentation of quality.



Research on energy and environment aims to accumulate, test and communicate knowledge that facilitates achieving a further market reduction of the energy consumption in, and environmental load from, new and existing buildings for housing, offices, schools and institutions. The research includes energy supply, building technology, architecture, functionality, operation and maintenance, indoor climate and economy as well as building users and owners. Research is also conducted on the reduction of energy consumption and environmental load in low energy buildings and energy-neutral buildings. Research on ventilation seeks to find new energy efficient solutions, and research on light includes lighting systems and controls, including daylight utilisation and comfort in relation to light. Other research themes are calculation methods and guidelines for environmental assessments of buildings, building parts and building products, including life cycle assessments and identification of environmental indicators for buildings.

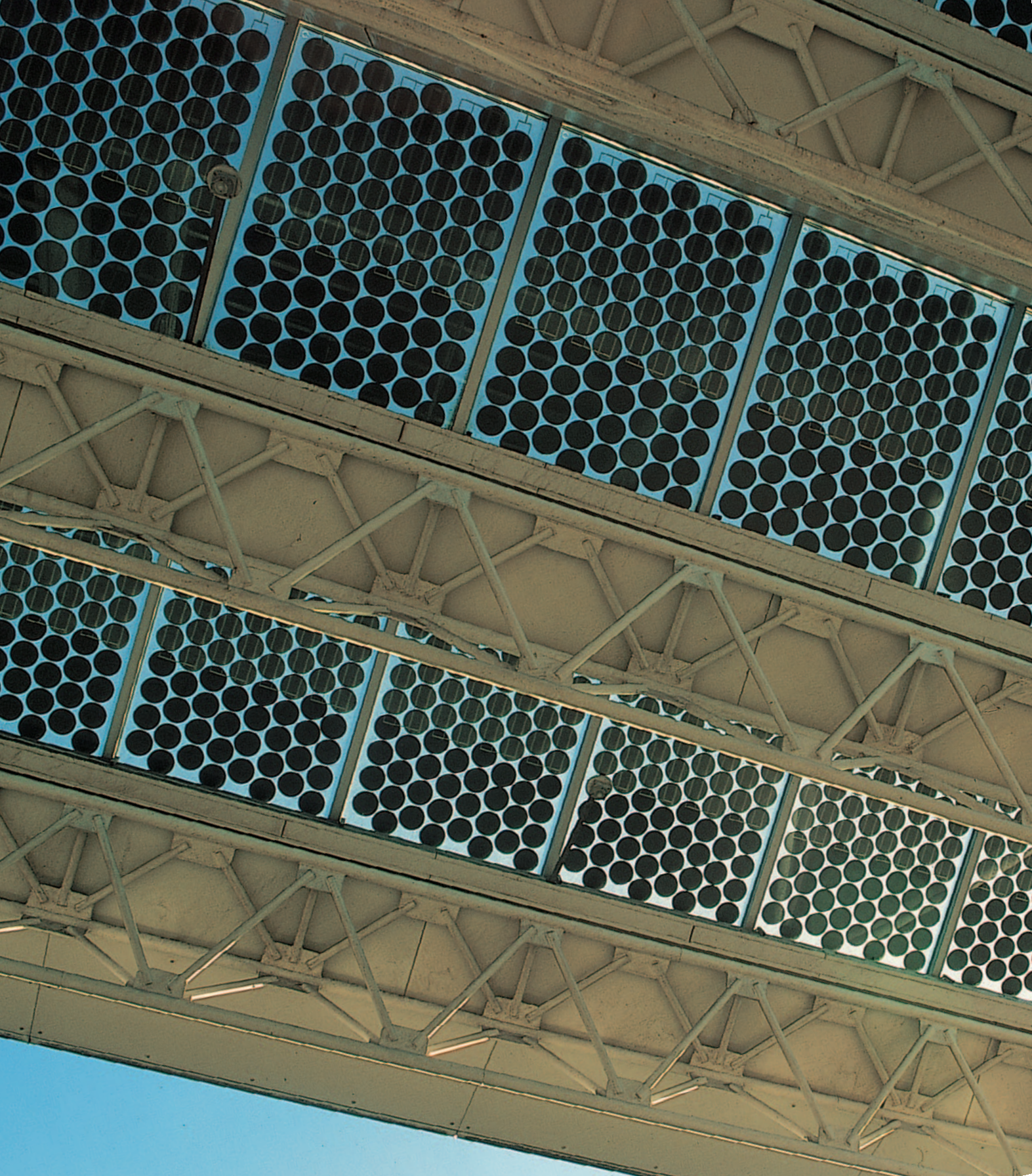


Housing research focuses on the housing needs and preferences of different groups of residents and also on how the actual supply of dwellings and their architectural design correspond to the demand. Other focus areas are regional housing markets and the mobility on the housing market. Urban studies include evaluations of urban renewal and area-based initiatives that focus on citizen participation, democracy, segregation, forms of ownership in an urban political perspective and the cohesion of urban districts. Furthermore, the processes that occur in connection with property operation and investment are analysed. In relation both to housing and towns, resource consumption and environmental issues are studied with special emphasis on user behaviour as a key parameter for the environmental load. Yet another focus area is making housing and urban spaces accessible to handicapped persons.



SBi has a wide range of laboratory facilities to support its research activities. They include facilities for testing the performance of structures and materials with regard to strength and stability, moisture conditions, accelerated ageing and thermographic measurements as well as investigations of air quality, measurements of ventilation and analyses of the use of daylight and artificial lighting.





Cooperation



In cooperation with consulting engineering firms, SBI has developed an integrated software package (www.bsim.dk) for simulating the indoor climate, thermal conditions, ventilation and solar conditions of buildings - all on the basis of a single 3D building model.

SBI carries out research in cooperation with Danish and international partners in the private and public sectors:

- Businesses, trade organisations and information councils
- Government ministries, local authorities and the EU Commission
- Public and private research foundations
- Research institutions and educational establishments

Individual partnerships can have different purposes:

- Research projects
- Research-based public-sector services
- Education, including industrial PhDs
- Coordination of large research programmes
- Development and testing of new solutions and products
- Evaluation of building processes and products
- Evaluation of legislation and development programmes
- Establishment of networks and secretariat services for professional networks
- Communication of empirical and research-based knowledge
- Conferences and continuing training
- Competence development through exchange of researchers

SBI also produces a number of tangible products as a result of its:

- Guidelines, internet solutions, seminars and other communication products
- Reports on research projects
- Development of software to support the design process



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