



SUSTAINABLE economy

the Austrian Research Programme

HAUS DER ZUKUNFT

building of tomorrow

bâtiment de demain

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Sustainable Economy: research, development and implementation

basic research of strategic importance



basic research studies with active involvement of companies



concept-driven development of new technologies and components



innovative conceptual studies



demonstration projects

accompanying measures

*stimulation of academic spin-offs
project competitions*



What is a „building of tomorrow“?

-  **Innovative residential or other – office, commercial, public – buildings**
 - with a high market potential
 - which – compared to the present practice in Austria – considerably reduce energy and material consumption
 - which increasingly use renewable sources of energy, renewable and ecologically sound materials
 - which also take into account social aspects and cost efficiency

Building of Tomorrow – Programme Overview

- 🏠 started in 1999
- 🏠 five calls for tenders
- 🏠 over 610 projects were submitted
- 🏠 240 projects supported
- 🏠 over 24 million € spent
- 🏠 115 projects finished
- 🏠 14 new demonstration buildings
- 🏠 11 retrofitted demonstration buildings



Overall aims of the research programme **Building of Tomorrow**

low energy solar house

passive house

ecological building materials and systems

renewable energy sources

energy efficiency

renewable raw materials, building ecology

user and service aspects

Haus der Zukunft

comparable costs

new buildings



retrofitting

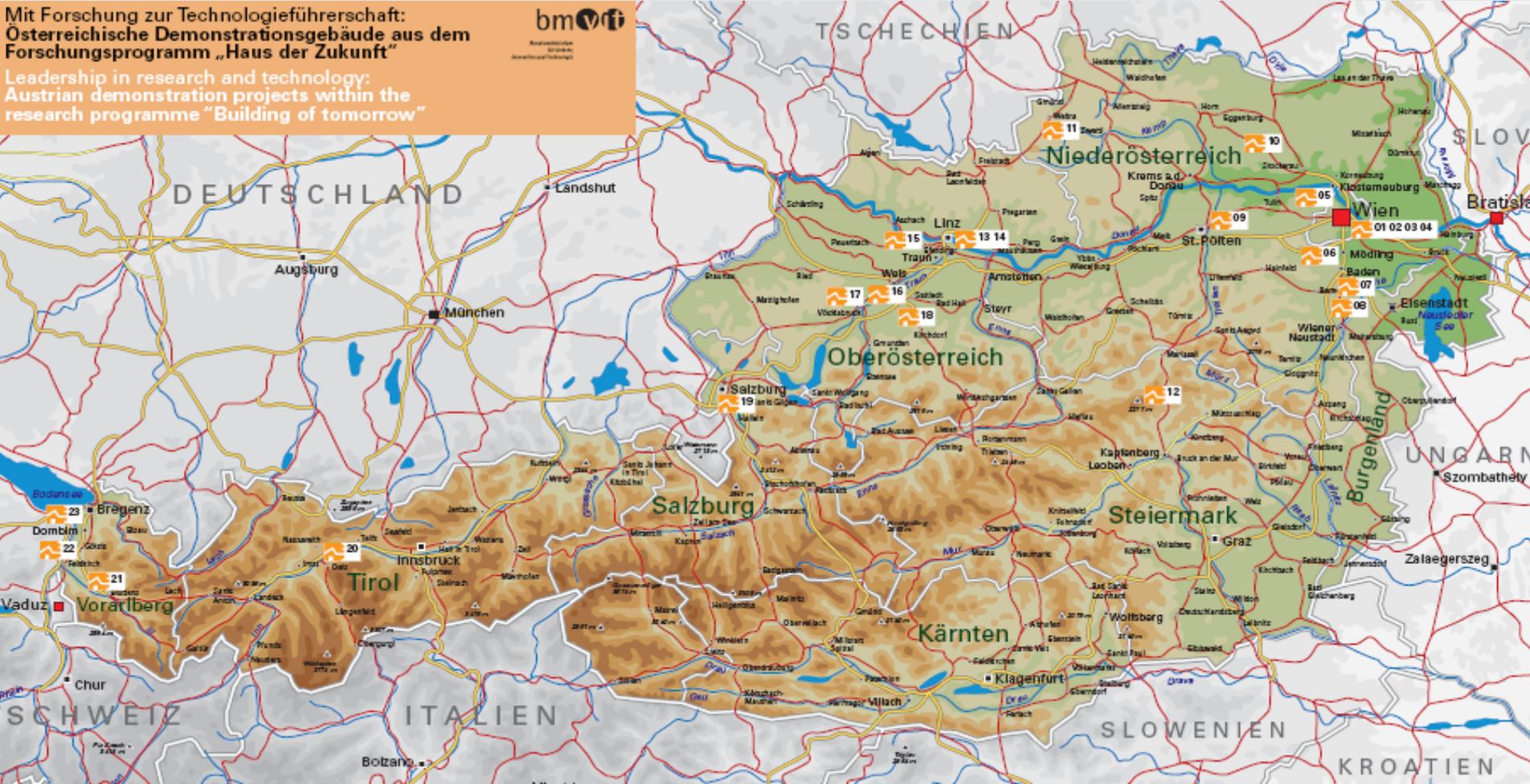
Demonstration buildings

Mit Forschung zur Technologieführerschaft:
Österreichische Demonstrationsgebäude aus dem
Forschungsprogramm „Haus der Zukunft“



Autonominer
Grenzüberschreitender
Forschungsverbund

Leadership in research and technology:
Austrian demonstration projects within the
research programme "Building of tomorrow"



Passive house – social housing Utendorfgasse, Vienna



- 🏠 construction costs less than 1055 €/m²
- 🏠 passive house standard (≤ 15 kWh/m²a, ≤ 10 W/m², n50 $\leq 0,6$ /h)
- 🏠 primary energy consumption ≤ 120 kWh/m²a

S-House: straw house in passive house standard, Böhheimkirchen, Lower Austria



-  office and exhibition building
-  wall system: wood construction; Insulation material: straw bale
-  development of a solar cooling system

Passive house renovation, Makartstraße, Linz



- 🏠 renovation of a multi-storey-building from the 1950s
- 🏠 use of prefabricated wall units
- 🏠 central element of the facade system is a special solar comb, which is mounted on the outside wall in form of a panel (gapsolar)
- 🏠 controlled ventilation with single room ventilators

Renovation single family house, Pettenbach



- 🏠 first renovation of a single family house in Austria to passive house standard, reduction of energy consumption 95 %
- 🏠 use of prefabricated timber wall elements
- 🏠 thermal bridges of the existing rising brickwalls were compensated by a circumferential umbrella-shaped insulation
- 🏠 insulation of the floor by using vacuum insulation

Ecological alpine refuge hut, Hochschwab area, Styria (2153 m)



- ☛ autarc building maintenance
- ☛ collection of rain water from roof
- ☛ warm water/flat thermal collectors integrated in the façade
- ☛ electricity generated by 70m² of façade integrated photovoltaic panels

Category: applied research, technology and components

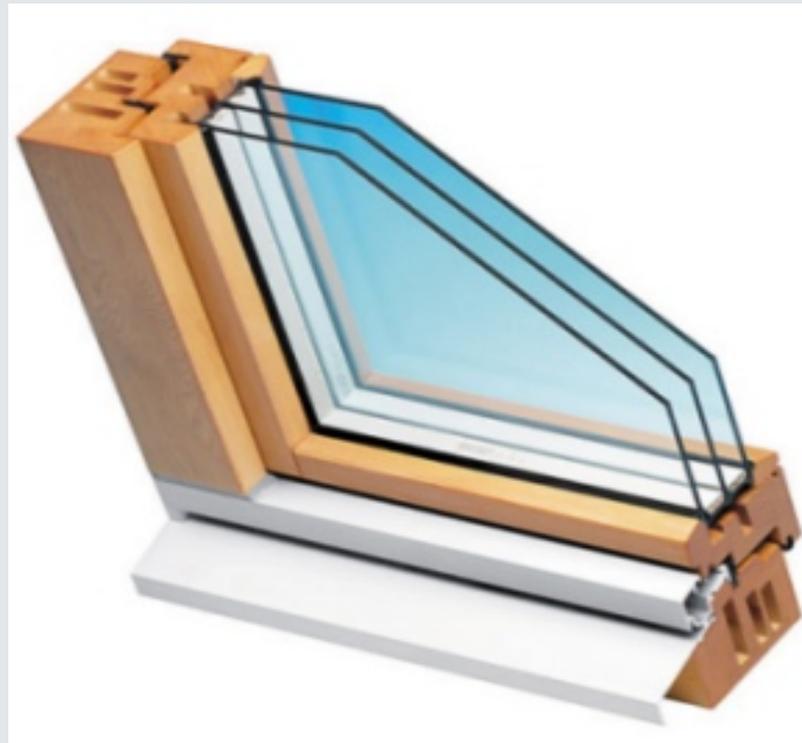
- 🏠 strengthen the scientific basis
- 🏠 development or improvement of new technologies and components

Topics:

- 🏠 innovative systems for solar heating of buildings and district heating
- 🏠 efficient solar technologies and their multifunctional and esthetical integration into buildings
- 🏠 innovative components (e.g. heat storage, windows, solar cooling)
- 🏠 innovative components and elements on basis of renewable materials



Solid passive house window



 U-value (window): 0,78 W/m²K



Façade integrated solar collector for water and space heating



Basic research on socio-economic issues

- 🏠 Analysis of user behaviour
- 🏠 Analysis of acceptance of ecological energy efficient buildings
- 🏠 Analysis and theory of users participation in refurbishment processes
- 🏠 Opportunities and barriers of innovative buildings or technologies in context with market diffusion
- 🏠 Pro and contra aspects of IT in buildings (monitoring systems)

Information: www.HAUSderZukunft.at

HAUS der Zukunft

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HAUSderZukunft.at > English Version

Building of Tomorrow

The Austrian Program on Technologies for Sustainable Development

The Austrian Program on Technologies for Sustainable Development is a five-year research and technology program. It has been developed by the Austrian Federal Ministry of Transport, Innovation and Technology (BMVIT). It initiates and supports trendsetting research and development projects and the implementation of exemplary pilot projects.

The program pursues clearly defined emphases, selects projects by means of tendering procedures and is characterized by networking between individual research projects and by accompanying project management. The Ministry invites tenders in two subprograms

- Subprogram "Building of Tomorrow"
- Subprogram "Factory of Tomorrow"
- Subprogram "Energy Systems of Tomorrow"

Project proposals will be accepted in German language only.

What is the "Building of Tomorrow"?

The "Building of Tomorrow" makes use of the two most important developments in solar and energy efficient building: the passive

Inhaltsverzeichnis

- ↓ The Austrian Program on Technologies for Sustainable Development
- ↓ What is the "Building of Tomorrow"?
- ↓ Goal of the program
- ↓ Structure of the subprogram

Links

- Austrian Program on Technologies for Sustainable Development
- Factory of Tomorrow
- Energy Systems of Tomorrow

Fertig

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Das Prinzip der "Nachhaltigen Entwicklung" ist der ökologische Wandel der Gesellschaft. Der Prozess kommt der nachhaltigen Entwicklung eine Schlüsselrolle zu. Das Bundesministerium für Verkehr, Innovation und Technologie (BMVIT) fördert Entwicklungen und unterstützt richtungweisende Themenbereichen effiziente Energieverfahren und Produkte, etc.

Ein Forschungs- und Technologiezentrum für Bauen und Wohnen

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Thank you for your attention!



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