

Germany

Researching Sustainability

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Three case studies:

1. *Baukultur*: The Culture of Building

Explores the process of decision making in the planning and building practice, for example in developing new methods of cooperative planning between government offices, investors, and citizens.

2. Planning for Climate Change

Develops regional models and explores necessary changes in both urban structures and buildings, especially in materials and the building envelope.

3. Houses as Power Plants

Explores how a new generation of buildings can produce more energy than they use. Since buildings, and especially housing, account for 50% of our energy use, the research focus has been on the single-family home. Research results have been presented to the public with a strong marketing focus.

1. *Baukultur*: the Culture of Building

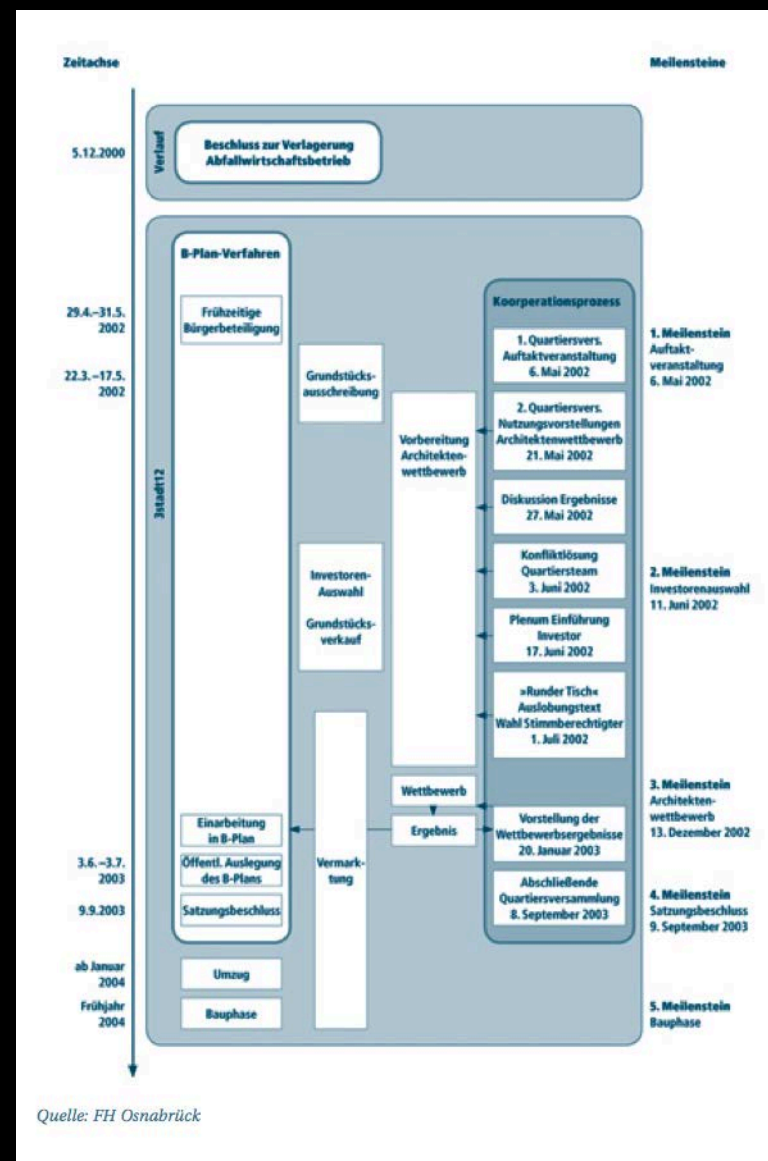
Loosely translated: culture and building practices, both with regards to housing and urban design.

From 2002-3 the ExWoSt (*Experimenteller Wohnungs- und Städtebau* =Experimental Housing and Urban Design) program “*3stadt2*” sponsored five model projects to link community groups with public-private partnerships.

Five middle-sized cities of regional importance were chosen for the study:

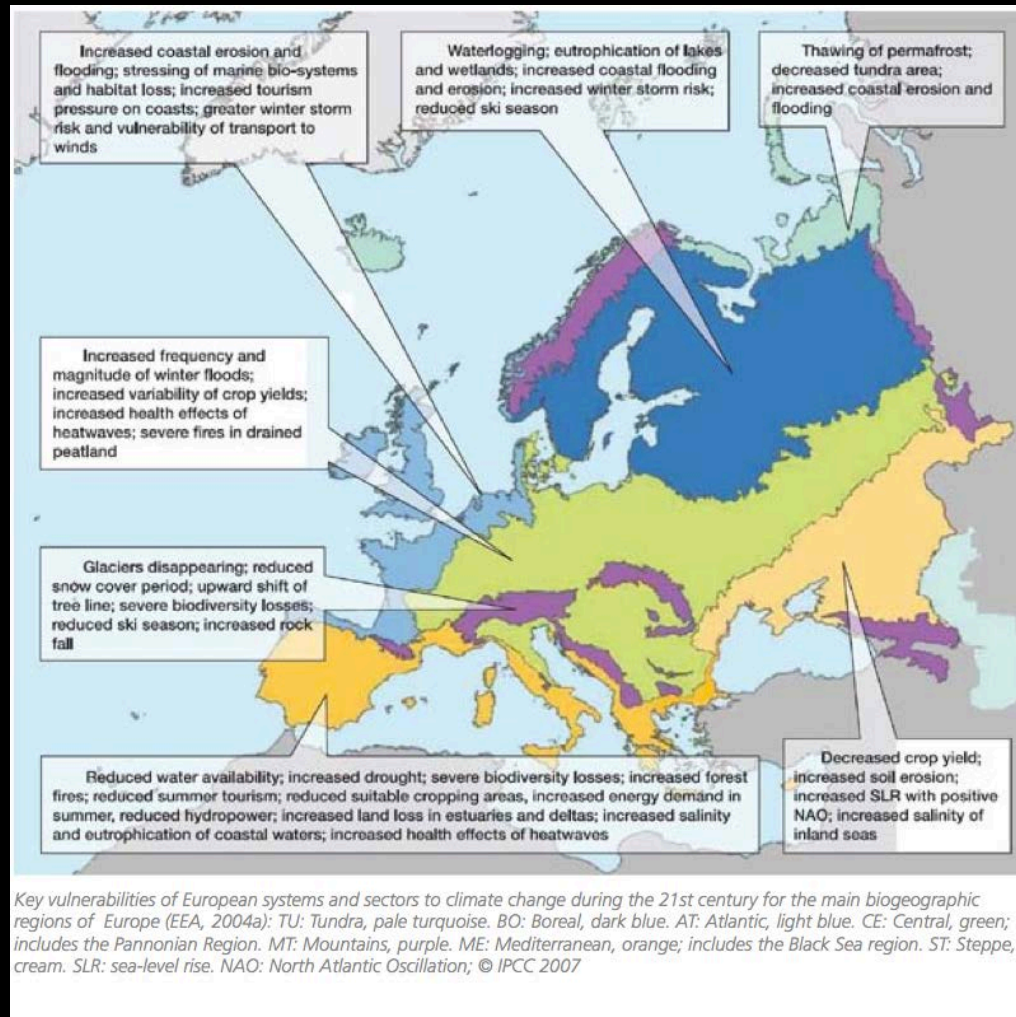
1. Bielefeld wanted to restructure and expand a district at the city's edge;
2. Beuel sought a new focus after the German capital moved from neighbouring Bonn to Berlin;
3. Gelsenkirchen-Buer, wanted to counter unemployment and an eroding retail base;
4. Lübeck wanted to design a new quarter as a backdrop for its university;
5. Osnabrück sought to expand its concept of “area recycling” to renew a quarter without expanding the city's built-up surface.

In 2004, the term *Baukultur* was made part of the federal building code, with *Baukultur* becoming a mandatory point of consideration when developing any sort of master plan.



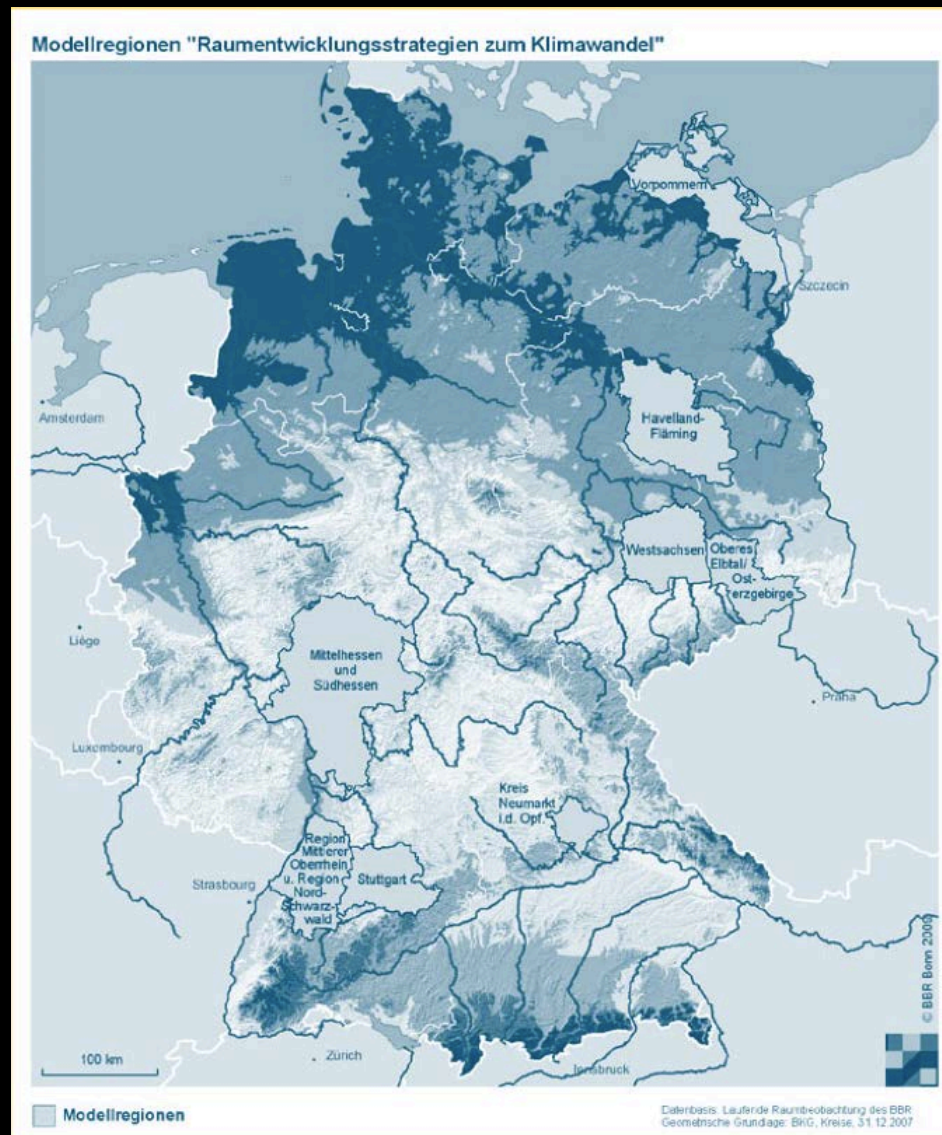
“3stadt2” process meetings in Bielefeld (left), analysis of the Osnabrück experience (right)
Both planning processes brought together municipal planners, investors, and the public.

2. Planning for Climate Change



Effects of anticipated climate change in Europe

(Source: BMVBS)



MORO project "*Raumentwicklungsstrategien zum Klimawandel*" (spatial strategies for climate change), a two-phase planning study that took place from 2009-2013, in which climate-change adaptation strategies were developed and tested in eight regions encompassing different climate types.

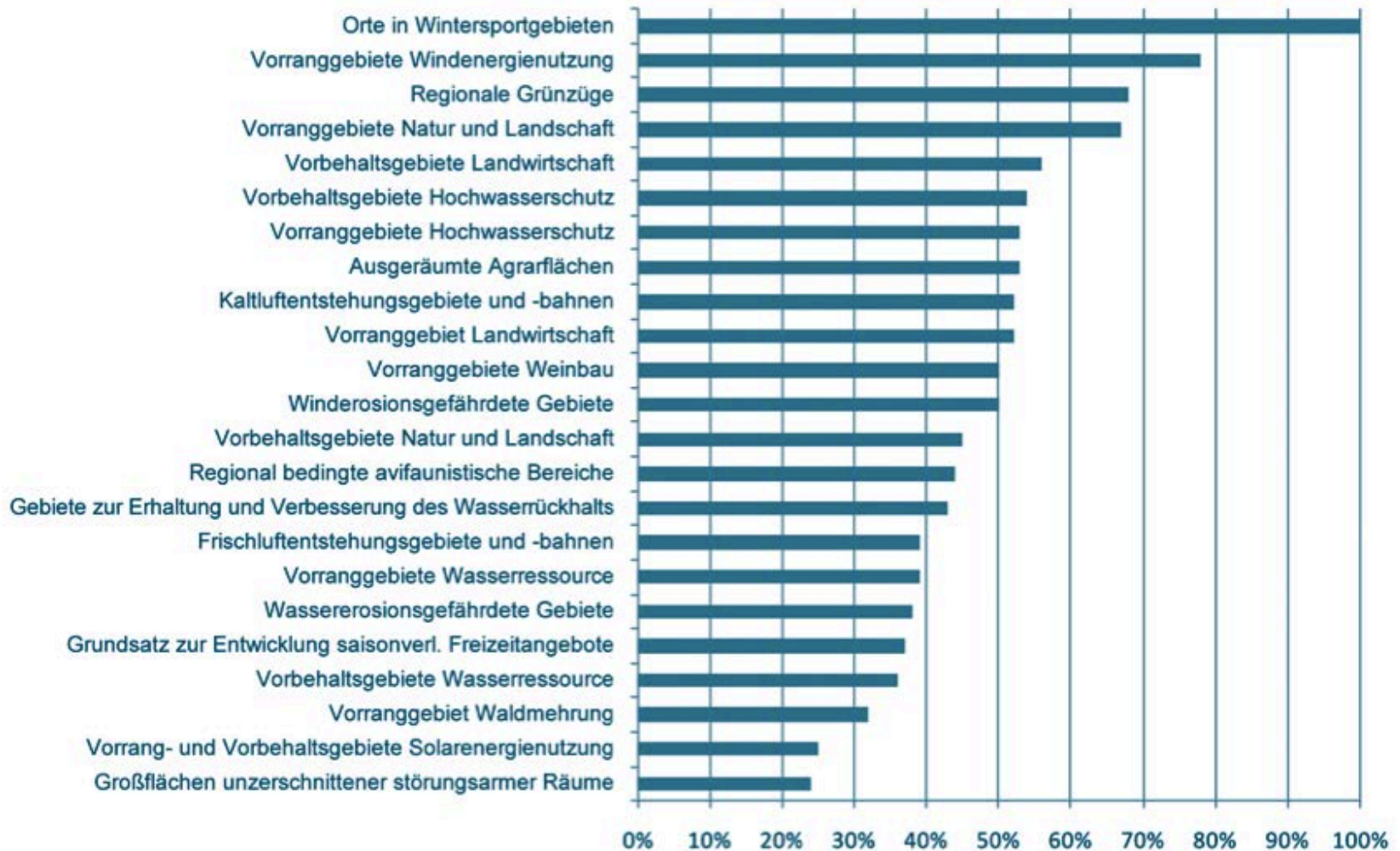


Abb. 4: Anteil der betroffenen Kommunen, die bestehende regionalplanerische Festlegungen zum Klimawandel in der Region Oberes Elbtal/Osterzgebirge durch eigene Pläne konkretisieren; Quelle: Leibniz-Institut für ökologische Raumentwicklung 2010

Example of a detailed analysis of the region Oberes Elbtal/Osterzgebirge. The graph assesses what percentage of communities have planned for various climate-change factors. (Source: BMVBS)



Bundesministerium
für Verkehr, Bau
und Stadtentwicklung



Bundesamt
für Bauwesen und
Raumordnung

BBR-Online-Publikation, Nr. 10/2008

Folgen des Klimawandels:
Gebäude und Baupraxis in Deutschland

“Results of Climate Change: Buildings and Construction Practices in Germany”

This publication has set a road map for future research on building components, materials, and construction practices.

Klimafaktor	Besondere Klimateffekte	Besonders betroffene Gebäudekomponenten	Adaptationsbedarf	Bedeutung
Niederschläge	Zunahme von extremen Starkregenereignissen (Schlagregen, > 40 mm pro 24 h)	Außenhülle Dach Außenwand Fenster/Türen Erdreichnahe oder im Erdreich liegende Bauteile Sockelbereich Keller	Verhinderung des Eindringens von Wasser und Feuchtigkeit Dichtigkeit Entwässerung	hoch

Example: Analysis of the effects of strong rainfall. Affected building components and need for adaptation are noted in columns three and four. Detailed problem descriptions followed for affected building components, including roof systems, facades, openings, base of the building, and basement.

3. Houses as Power Plants

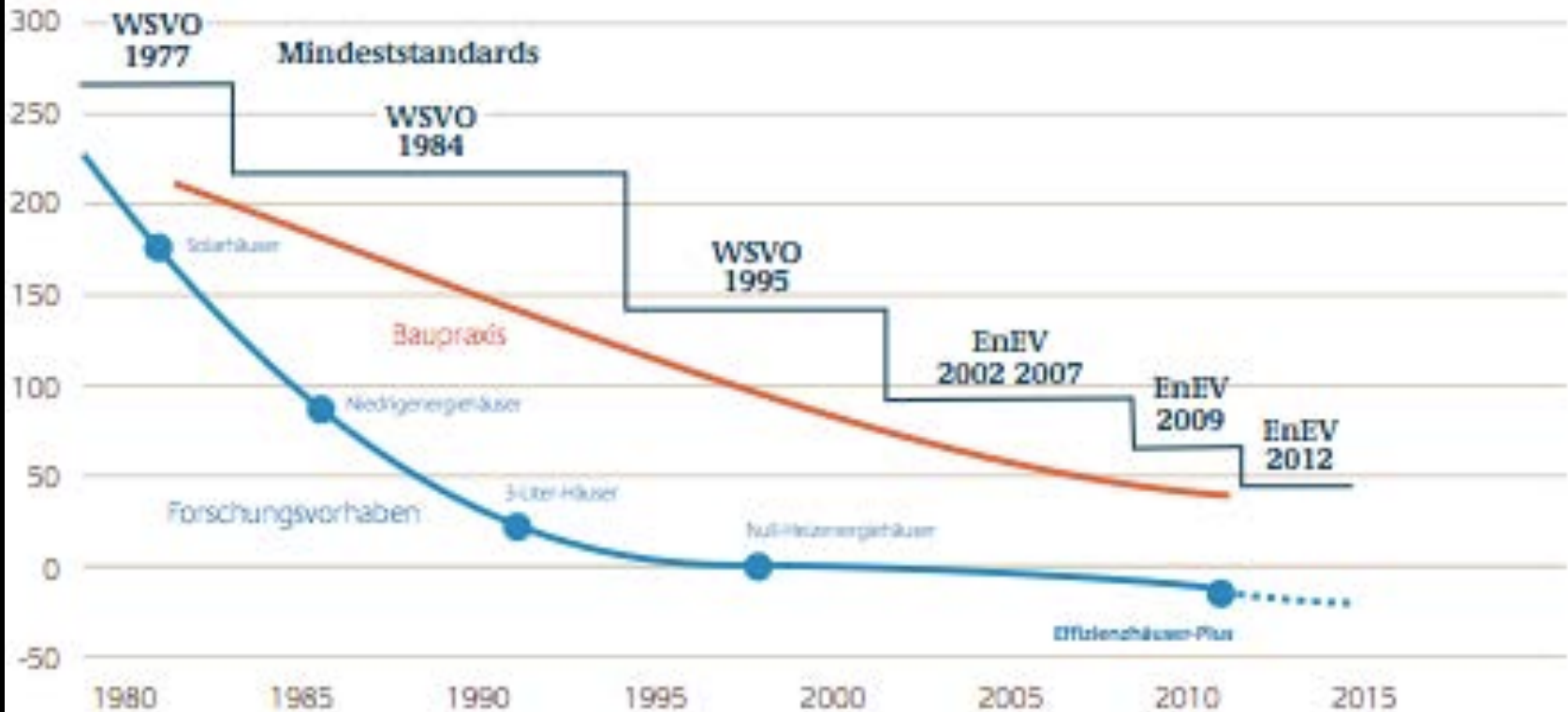


Solar Decathlon winners 2007 (left) and 2009 (right)
Plus-Energy Houses developed at the TU Darmstadt and exhibited at the
international Solar Decathlon competition in Washington, D.C.

(Source: BMVBS and Solar Decathlon)

Entwicklung des energiesparenden Bauens

Primärenergiebedarf Heizung (kWh/m²a)



Development of energy-saving building and construction:

Blue line = Technically possible

Red Line = Typical building practice in any given year (industry standard)

Stepped Line = Legislated minimum standards

The graph shows that there is generally a 10-20 year lag between levels of “technically possible” and “legislated minimum”.

(Source: BMVBS)



Prefabricated house by the HUF company, based in Germany. HUF is one of several German prefab companies that have developed commercially available “plus-energy” homes. This model, first developed in the late 1970s, is now offered as a “plus-energy” version. Testing on energy efficiency has been supervised through the Fraunhofer Institute. HUF exports to many countries in the world.



“Effizienzhaus Plus mit Elektromobilität” 2011

Winner of a competition sponsored by the BMVBS. Sixteen teams of university institutes and architecture offices took part. A “test family” is living in the house for 15 months.

(Source: BMVBS)



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Die Familie



Familie Welke/Wiechers mit einem Modell des Effizienzhaus Plus
(Quelle: BMVBS)



Am 20. Dezember hat Bundesbauminister Ramsauer im Erich-Klausener-Saal des Ministeriums Familie Welke/Wiechers als Gewinner gezogen. Die Welke/Wiechers werden ab März 2012 das Effizienzhaus bewohnen und die Funktionalität des Forschungsobjekts testen.

Jörg Welke ist 42 Jahre alt und Historiker. Er arbeitet im Bereich Öffentlichkeitsarbeit/Forschung an einem Umweltinstitut. Simone Wiechers (42 Jahre) ist Kunsthistorikerin und in einer Galerie für zeitgenössische Kunst angestellt.

Die Kinder der beiden - Freyja (11 Jahre) und Lenz (8 Jahre) - üben beide musikalische Hobbies aus. Freyja spielt Cello, Lenz Gitarre.

- Das Haus
- **Die Familie**
- Die Ziele
- Messdaten
- Forschung
- Förderprogramm
- Bauaktivitäten
- Schaulenster
- Elektromobilität
- FAQ

VERGANGENE MONATE

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TWITTER-KANAL



Effizienzhaus Plus
ImEffizienzhaus

ImEffizienzhaus Urlaub auf Amrum
<http://t.co/JuAN6VZP>

Der Blog

Hier finden Sie die Erfahrungen der Familie.

Die Kunst an unserem Bau – Teil I

gesendet am 21. November 2012 durch Familie

Kunst und Technik haben vieles gemeinsam. Im EH+ und in dem Design der Elektrofahrzeuge begegnen uns beide Bereiche sogar gleichzeitig. Wir haben bei unserem Einzug Kunstwerke mitgebracht, die uns und unsere Gäste begeistern und manchmal nachdenklich stimmen. Das ist die Kunst an unserem Bau, die unser temporäres Zuhause in seiner Bedeutung als Kraftwerk für uns unterstreicht.

The BMVBS house. Publicity and “marketing” through: website, printed brochures, “opening events”, test-family blog, Facebook page, twitter feed, and YouTube videos.

Thank you