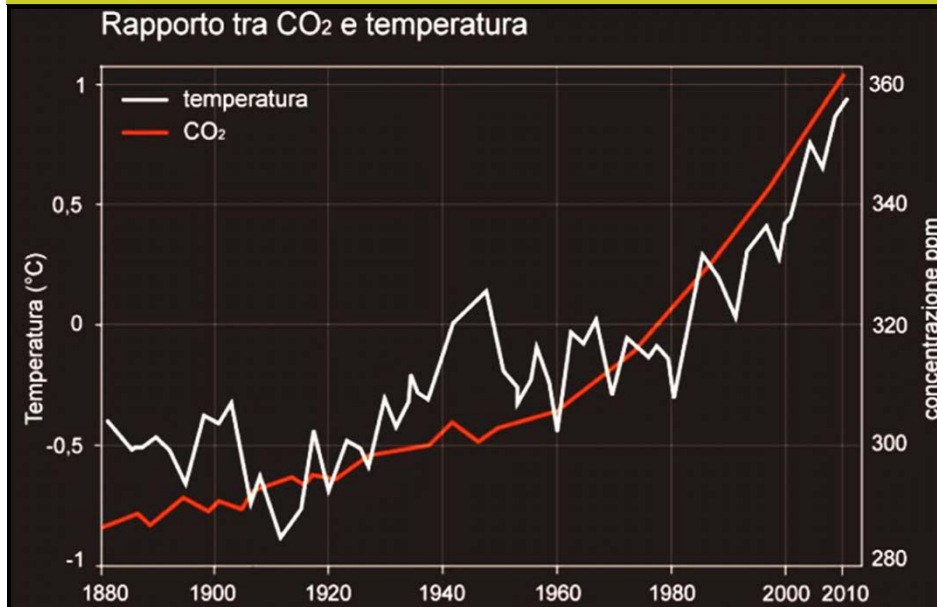


KlimaHaus – CasaClima

A SUSTAINABLE BUILDING STANDARD



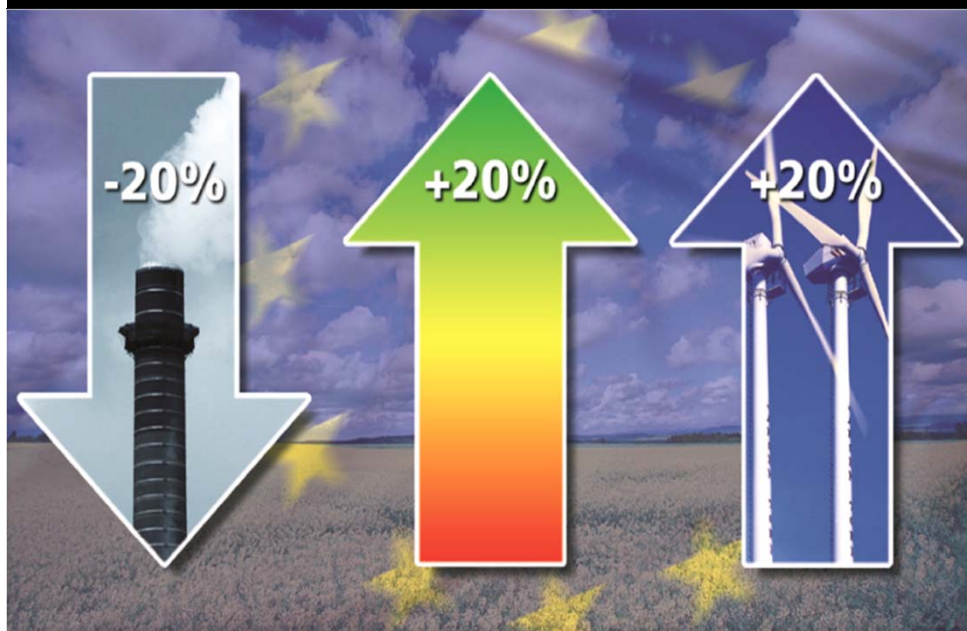
RESOURCE CONSUMPTION environmental impact



European 2020 and 2030 targets CLIMATE AND ENERGY POLICIES



EU targets 2020: 0% +20% +20%

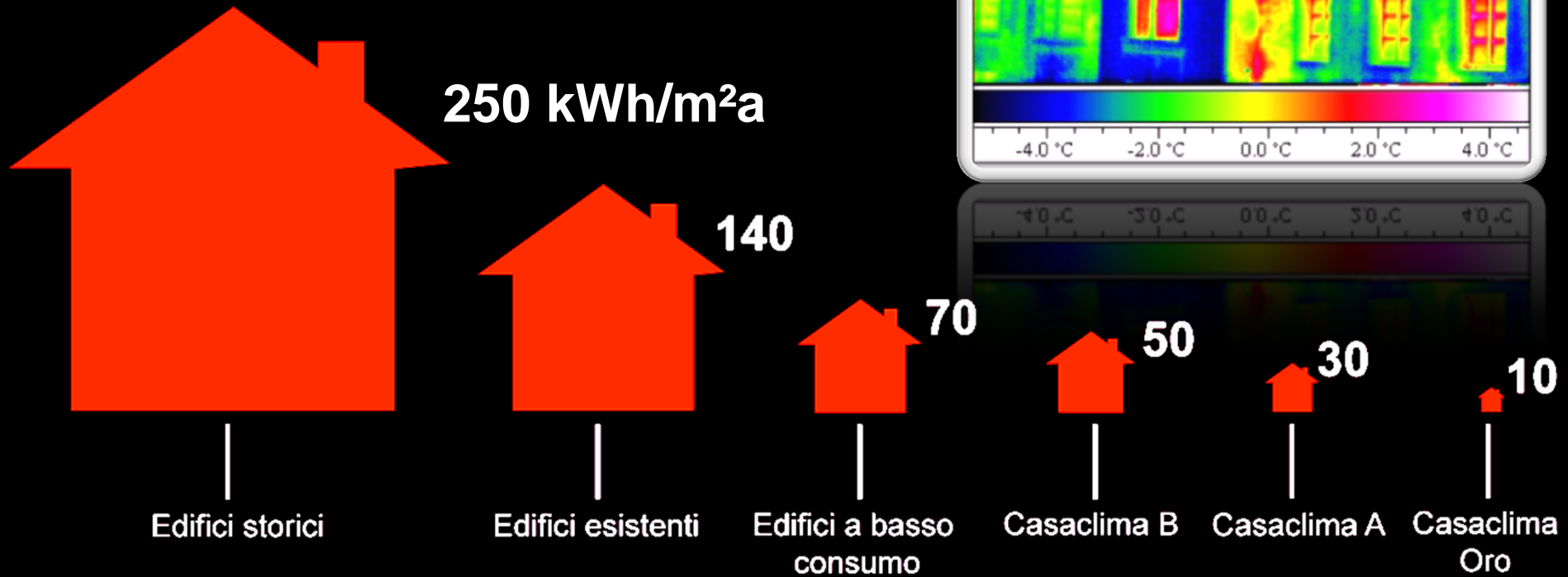
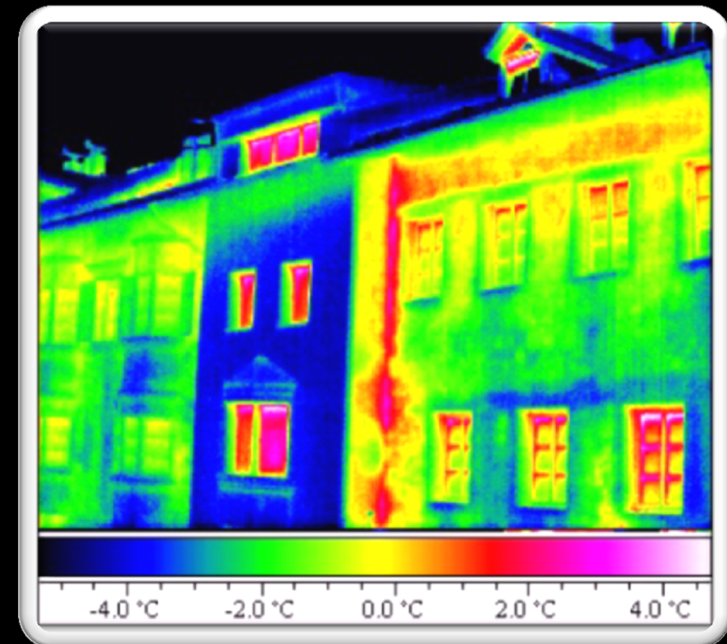


EU targets 2030: -40% +27% +27%

European Directives Energy Performance of Buildings



EPBD I: 2002/91/CE
EPBD II: 2010/31/EU



KlimaLand SÜDTIROL – ALTO ADIGE Sustainable Energy Rollout



SÜDTIROL KlimaLand



KLIMAPLAN

Energie-Südtirol-2050

KlimaHaus CasaClima

ENERGY | COMFORT | ENVIRONMENT



CERTIFICATION

EDUCATION

CONSULTANCY

RESEARCH & DEVEL.

COMMUNICATION



TOWARD SUSTAINABILITY

The Evolution of Building Standards



ENERGY PERFORMANCE CERTIFICATION classification scheme and nZEB standard



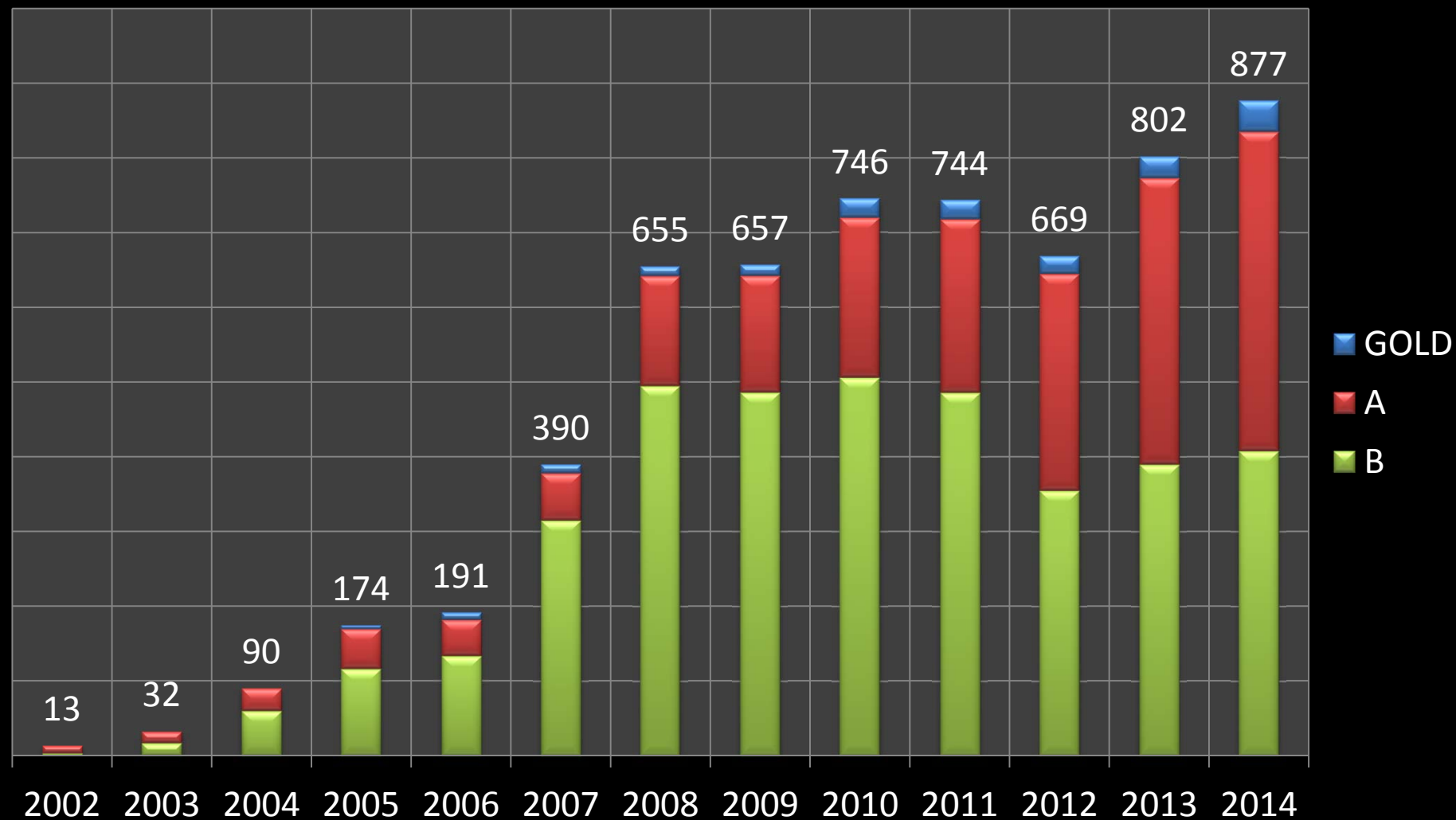
Klima Haus Klasse	Effizienz der Gebäudehülle (EGH)	Äquiv. Primärenergiebedarf ohne Kühlung (PEH _{WGB})	Äquiv. Primärenergiebedarf Kühlung (PEK _{WGB})**	Gesamtenergieeffizienz (GEE _{WGB}) (= PEH _{WGB} + PEK _{WGB})	
	Efficienza Energetica Involucro (EIN)	Fabbisogno Energia Primaria Equiv. Senza Raffrescamento (EPSR _{RES})	Fabbisogno Energia Primaria Equiv. Raffrescamento (EPR _{RES})**	Efficienza energetica complessiva (EEC _{RES}) (= EPSR _{RES} + EPR _{RES})	
Classe Casa Clima	[kWh/m ² a]	[kg CO ₂ eqv./m ² a]	[kg CO ₂ eqv./m ² a]	[kg CO ₂ eqv./m ² a]	
NZEB	Gold*	≤10	≤10	≤5	≤15
	A*	≤30	≤20	≤10	≤30
	B	≤50	≤35	≤15	≤50
	C	≤70	≤50	≤20	≤70
	D	≤90	≤65	≤25	≤90
	E	≤120	≤90	≤30	≤120
	F	≤160	≤120	≤40	≤160
	G	>160	>120	>40	>160

Tabelle 1: KlimaHaus Klassen – Energieeffizienz der Gebäudehülle und Gesamtenergieeffizienz für Wohngebäude (mit und ohne Kühlung)

Tabella 1: Classi CasaClima – efficienza energetica dell'involucro ed efficienza energetica complessiva per edifici residenziali (con e senza raffrescamento)

ENERGY PERFORMANCE CERTIFICATION

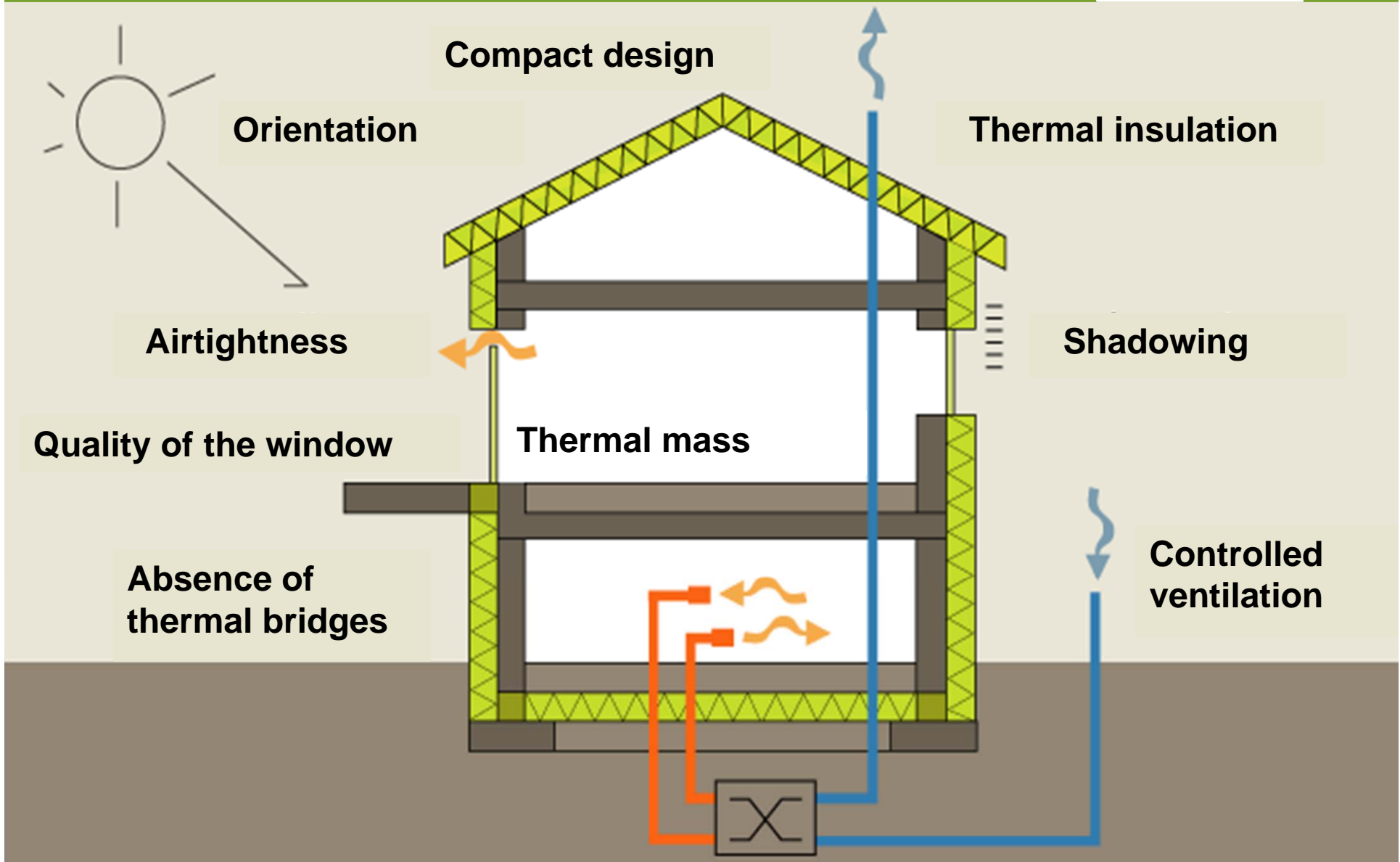
Anticipating nZEB standards



How to build a KlimaHaus?



What is a KlimaHaus ...



How to plan a KlimaHaus? TECNICAL GUIDELINES

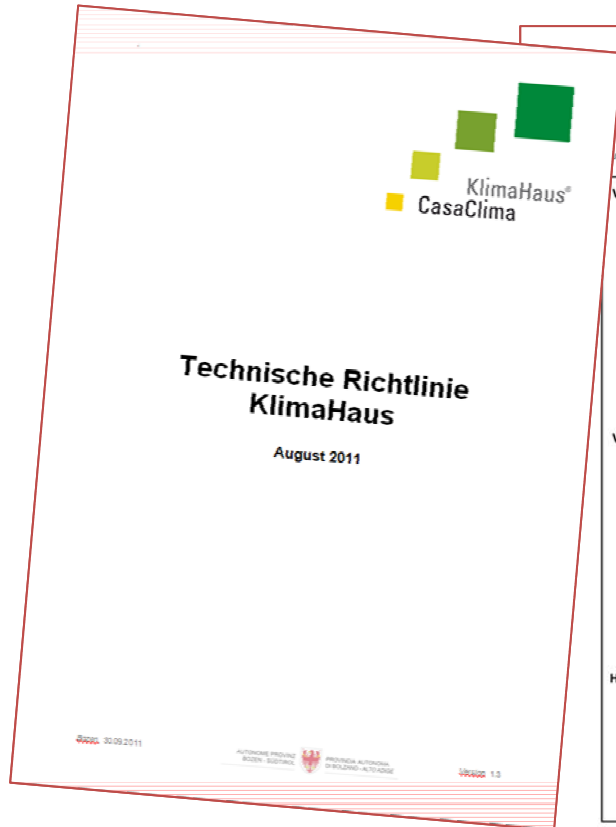


Abb. A7

Technische Richtlinie KlimaHaus Agentur 2011_1_3

KlimaHaus Agentur GmbH
Agenzia CasaClima Srl

4.4 Berechnung der wärme

Die wärmeübertragenden Flächen, sind nicht beheizte Bereiche oder gegen A

In der Berechnung sind Brutto-Auß berücksichtigen, inklusive der gesam

Die vertikalen, wärmeübertragenden Un den Abstand von der Unterkante des ur Bauteils der beheizten Gebäudehülle

Horizontale Bauteile gegen Erdreich dargestellt, zu berücksichtigen.

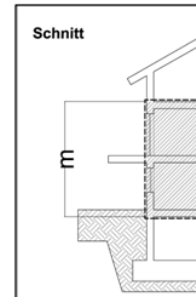


Abb. 14 anzusetzende Bruttogeschossm berücksichtigt die ges

Technische Richtlinie KlimaHaus Agentur 2

KlimaHaus Agentur GmbH
Agenzia CasaClima Srl

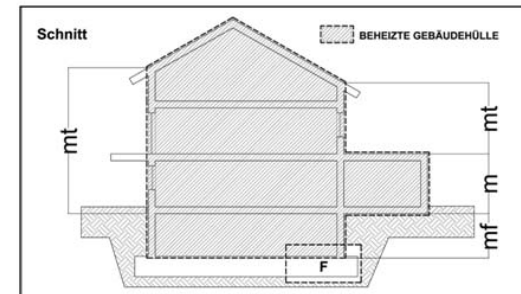


Abb. 15 anzusetzende Bruttogeschosshöhe-gebäudehöhe der wärmeübertragenden Umfassungflächen mt ist, wie oben dargestellt, zu messen; Bruttoaußenmaß des Kreuzungspunktes Dach-Wand, mf ist abhängig vom Gründungstyp Detail F.

Detail F: Ausführungsvarianten der Gebäudegründung

Die Bruttogeschosshöhe mf der wärmeübertragende Umfassungfläche wird, wie vom Pfeil dargestellt, gemessen.

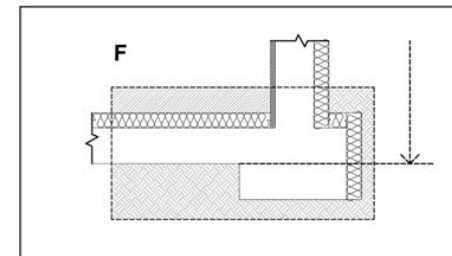


Abb. 16 Streifenfundament

Technische Richtlinie KlimaHaus Agentur 2011_1_3

Seite 21 von 67

KlimaHaus Standard quality is founded on design details



CALCULATION & DESIGN TOOLS

ProCasaClima 2015



The screenshot displays the ProCasaClima 2013 software interface, which is used for energy and climate calculations. The main window shows the 'Programma di calcolo ProCasaClima 2013' and 'KlimaHaus Agentur GmbH Agenzia CasaClima Srl'. The interface is divided into several sections:

- Results (Risultati):** Shows key performance indicators: $Q_h = 33 \text{ kWh/mqa}$, $Q_c = 10 \text{ kWh/mqa}$, $\text{Nature} = 282 \text{ points}$, and $\text{CO}_2 = 26 \text{ kg/m}^2\text{a}$.
- Table:** A table with columns for μ , κ , tempo di utilizzo, GWP, process, AP, and PEI. It lists various building components and their environmental impact.
- Materials (Baustoffe):** A table showing material properties for different construction elements, including thermal conductivity and specific heat capacity.
- Simulation (SIMULAZIONE):** A section for configuring simulation parameters, including ventilation, heating, and cooling systems.
- Diagrams:** A 'Diagrammi' window displays a 3D pie chart showing energy consumption breakdown and a bar chart showing monthly energy consumption.
- Temperature Profile:** A graph showing temperature fluctuations over time, with the y-axis labeled $[\text{°C}], [\text{g/kg}]$.

KlimaHaus Quality QUALITY AUDITS ON SITE



Living in a KlimaHaus for a better climate – inside and outside



SUSTAINABILITY CERTIFICATION

KlimaHaus NATURE



KlimaHaus Agentur
Agenzia CasaClima
Autonome Provinz Bozen-Südtirol
Provincia Autonoma Bolzano-Alto Adige
Provincia Autonoma de Bulsan - Südtirol



KlimaHaus

CasaClima®

SUSTAINABILITY CERTIFICATION

KlimaHaus NATURE



Energy Efficiency

Basso fabbisogno di calore

CasaClima

Oro

CasaClima

A

CasaClima

B

LCA Materials



Indoor Quality



Water Cycle



Sound Insulation



Natural Daylight



SUSTAINABILITY CERTIFICATION

Quality beyond mere Energy Efficiency



Sustainability Certificate **KlimaHaus CasaClima Nature**

Energy Efficiency Certificate **KlimaHaus CasaClima**







FIST CERTIFICATION

KlimaHaus School

CasaClima®



ENERGY EFFICIENCY REFURBISHMENT

The Protocol KlimaHaus R



Patrimonio edilizio italiano: ripartizione per anno di costruzione



Fonte: Istat censimento 2001 / Rielaborazione interna

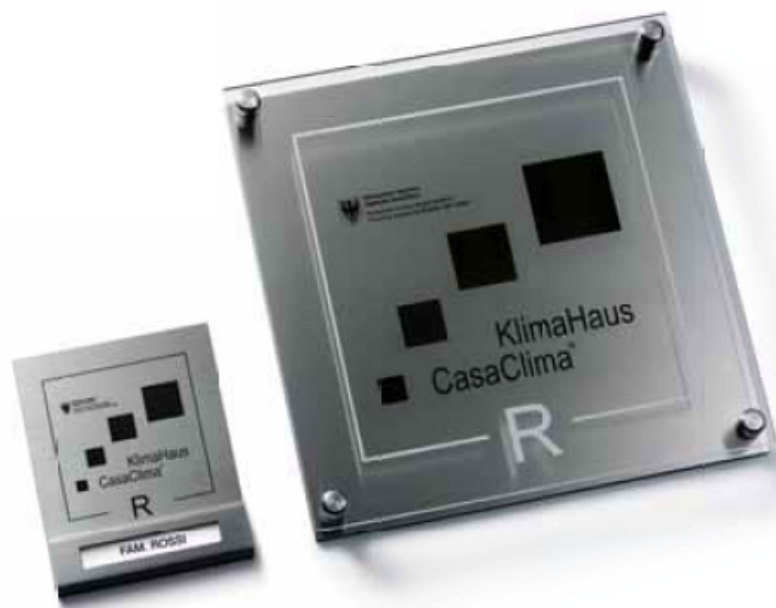


ENERGY EFFICIENCY REFURBISHMENT

The Protocol KlimaHaus R



Das neue Qualitätssiegel
für Sanierungen.
*Nasce il nuovo sigillo
di qualità per il risanamento.*



Un mondo migliore,
inizia nel tuo appartamento.



CASACLIMA R - Il nuovo sigillo di qualità per il risanamento.

CasaClima R è il nuovo protocollo di certificazione dell'Agenzia CasaClima che promuove la qualità degli interventi di riqualificazione energetica complessiva degli edifici (residenziali o non residenziali, con misure particolari per il recupero degli edifici storici sottoposti a tutela), ma anche di ristrutturazione di singoli appartamenti.

Oltre i tre quarti del patrimonio edilizio è stato costruito tra il 1960 e il 1990, quando la sensibilità e le tecnologie relative all'efficienza energetica e alle fonti energetiche rinnovabili erano poco sviluppate. Ristrutturare secondo lo standard CasaClima R garantisce un elevato comfort abitativo, riduce l'impatto della tua casa sull'ambiente, ti permette un risparmio energetico e aumenta il valore dell'immobile.

Per abitare un futuro migliore, risana il tuo presente.

www.agenziacasaclima.it

ENERGY EFFICIENCY REFURBISHMENT

The Protocol KlimaHaus R



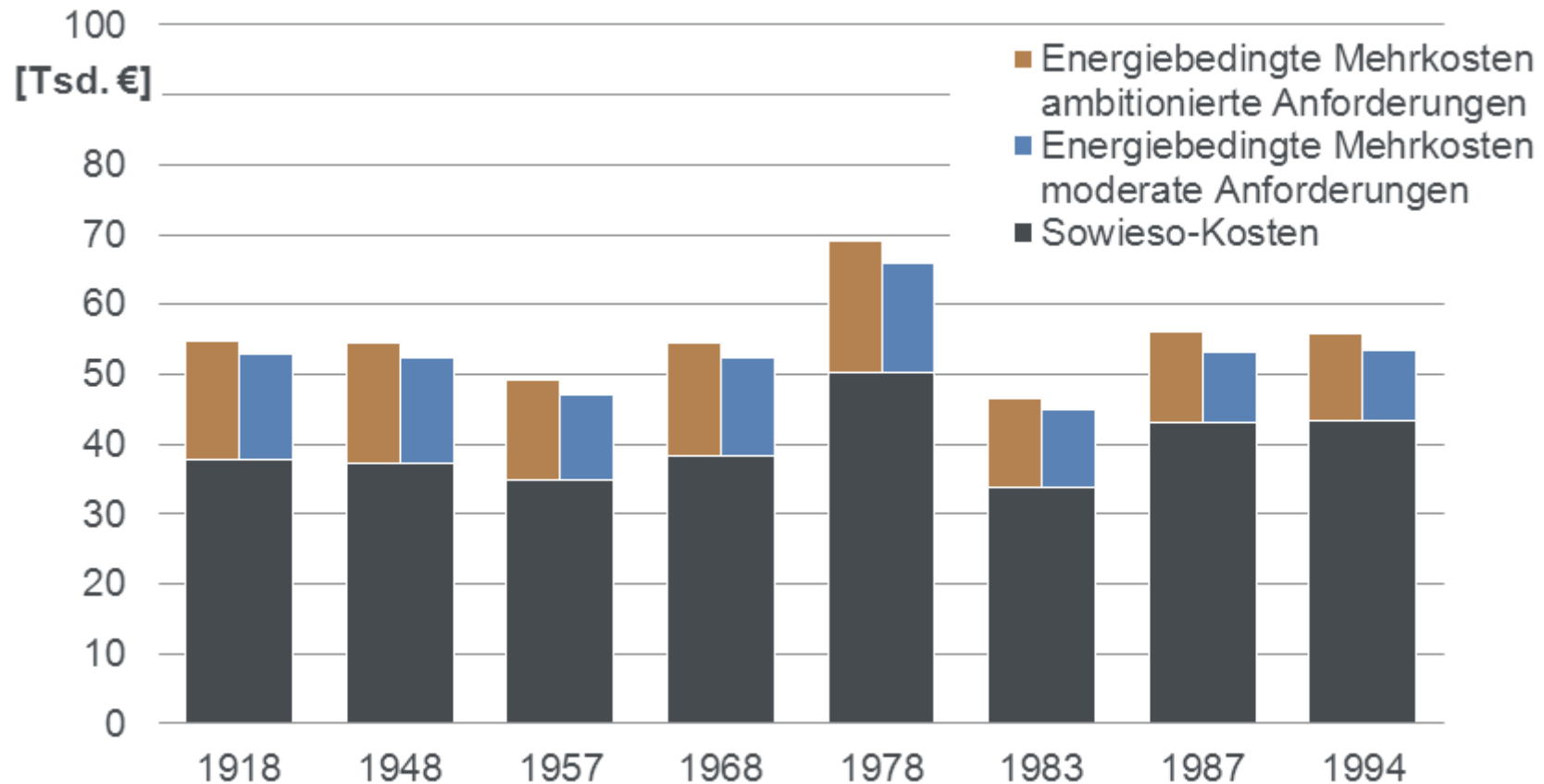
ENERGY EFFICIENCY REFURBISHMENT

The Protocol KlimaHaus R

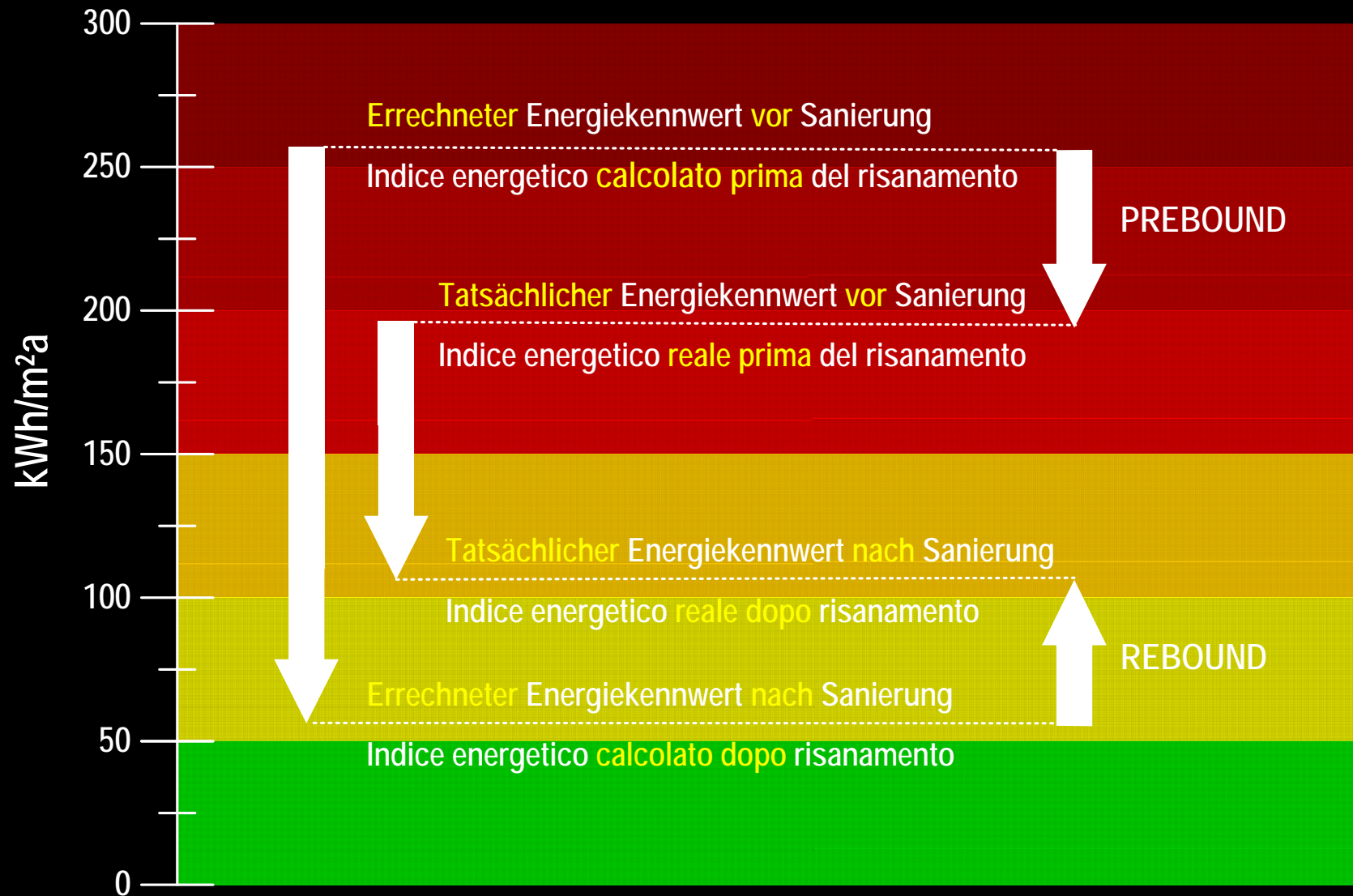


Additional investment costs for improving energy efficiency

- **additional costs for improving energy efficiency amount to approximately 1/3 of the overall costs** (Quelle: Energetische Gebäudesanierung in Bayern – 2012)



ENERGY EFFICIENCY REFURBISHMENT Prebound and Rebound Effects



INCENTIVES AND PUBLIC PROGRAMS



- **CUBAGE BONUS**

- Up to 20% more building volume for:**

- New buildings with outstanding performance beyond minimum standards: energy efficiency and sustainability properties
 - Energy Efficiency Retrofitting Projects reaching a KlimaHaus R certification or at least KlimaHaus Class C

- **FINANCIAL INCENTIVES**

- 30 % of documented costs for defined measures

- **FISCAL INCENTIVES**

- Fiscal deduction of 50% (retrofitting) and 65% (energy efficiency refurbishment) up to max 96.000 €



SMART HOMES & SMART MATERIALS

Resilience and Robustness



SOLAR DECATHLON 2014

And the winner is: a KlimaHaus!

