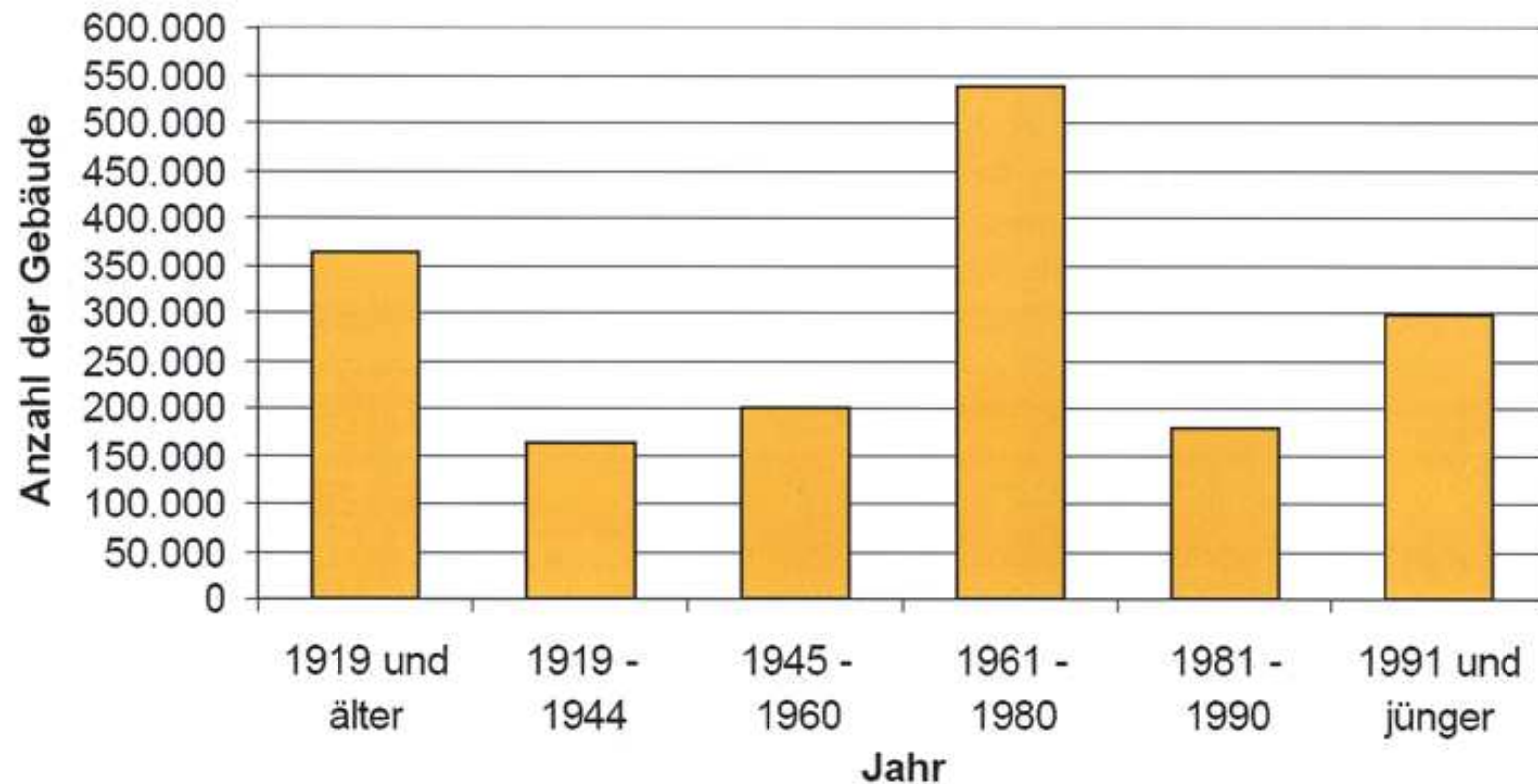


Tyrol, Austria (deep) renovation subsidies

Architect DI Gerald Gaigg, Innsbruck

Tyrol, Austria: (deep) renovation subsidies

Austria, building stock : construction date (source: Statistik Austria, 2006)



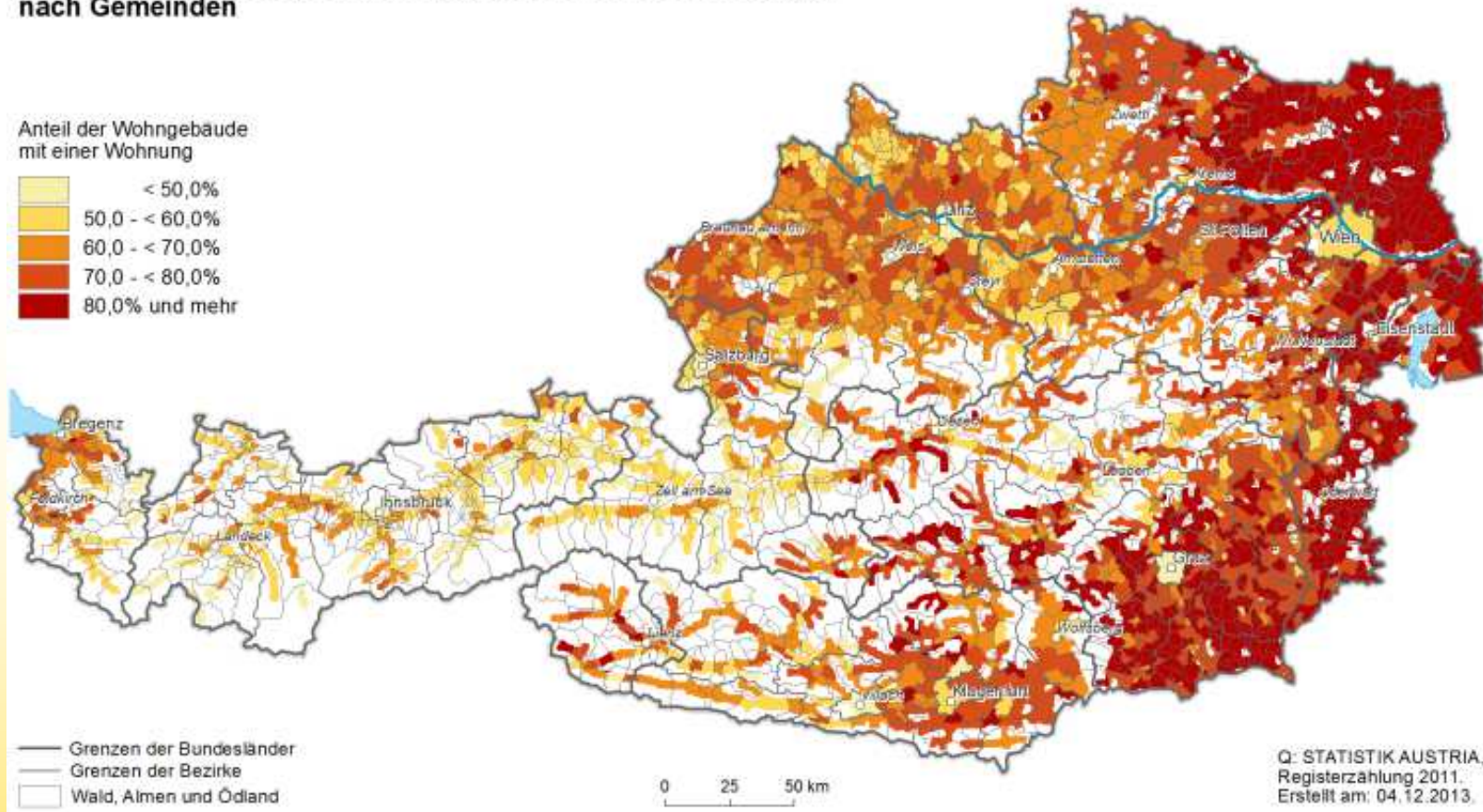
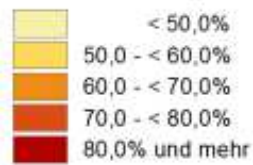
Tyrol, Austria: (deep) renovation subsidies

Austria, buildings - one appartement

(Statistik Austria, 2011)

Bestand an Gebäuden 2011: Wohngebäude mit einer Wohnung nach Gemeinden

Anteil der Wohngebäude mit einer Wohnung

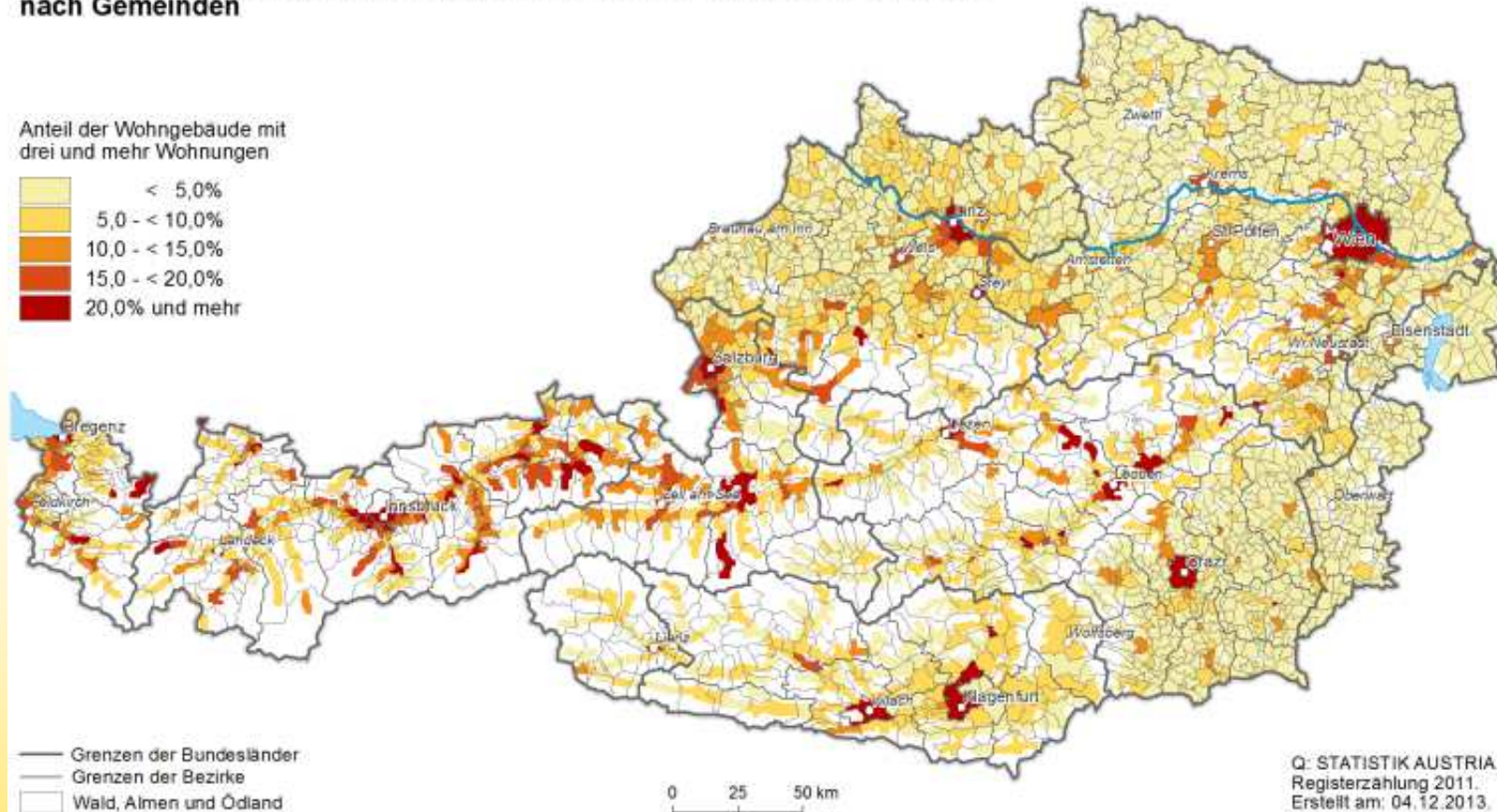
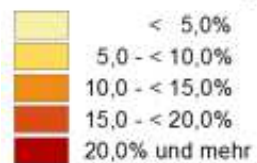


Austria, buildings - 3 or more appartements

(Statistik Austria, 2011)

Bestand an Gebäuden 2011: Wohngebäude mit drei und mehr Wohnungen nach Gemeinden

Anteil der Wohngebäude mit drei und mehr Wohnungen



Tyrol, Austria: (deep) renovation subsidies

energy-efficiency measures in 2012 (values in mrd. €) source: EVN AG 2015

measures	public body	expenses in 2012
housing subsidy	state, federal state	2,5 mrd. (0,71 mrd. € renovation)
Inland environmental support	state, federal state	0,09 mrd. (federal states not included)
energy taxes	state	4,5 mrd.
Truck toll	state	1,1 mrd.
green power subsidy (PV, CHP)	state	0,09 mrd.
energy audit of enterprises	state	0,01 mrd.
renovation campaign	state	0,10 mrd.
Total costs		9,4 mrd. €

Tyrol, Austria: (deep) renovation subsidies

Tyrol: development housing subsidy, grants 2007-2010

source: Landesrechnungshof Tirol, Court of Auditors report housing subsidy 2011,

DI Reinhard Krismer, Innsbruck, 2011-11-11

Grants for energy saving and environmental-friendly actions	2007	2008	2009	2010
Ventilation system with heat recovery	18.600 €	60.760 €	77.780 €	247.070 €
Low energy standard HWB BGF <= 300 <= 40 kWh/m ² .a HWB BGF 300-1000 <= 30 kWh/m ² .a HWB BGF >1000 <= 20 kWh/m ² .a	2.047.808 €	1.552.828 €	1.350.670 €	342.111 €
Passivhouse standard HWB BGF <= 10 kWh/m ² .a	56.400 €	118.890 €	304.720 €	4.704.870 €
Solar (heating + warmwater)	839.597 €	1.174.959 €	1.060.394 €	1.414.690 €
reduced heating demand	19.630 €	337.950 €	903.400 €	1.130.170 €
heating with heatpump	119.070 €	173.170 €	185.400 €	292.725 €

Tyrol, Austria: (deep) renovation subsidies

Tyrol: gained CO2 reductions due to housing subsidy (in tons)

source: Landesrechnungshof Tirol, Court of Auditors report housing subsidy 2011,

DI Reinhard Krismer, Innsbruck, 2011-11-11

	2008	2009	2010
CO2-reductions new builds	4.958 t	4.519 t	4.016 t
CO2-reduction refurbishment	24.535 t	37.634 t	36.636 t
CO2-reduction total	29.493 t	42.153 t	40.652 t

Tyrol, Austria: (deep) renovation subsidies



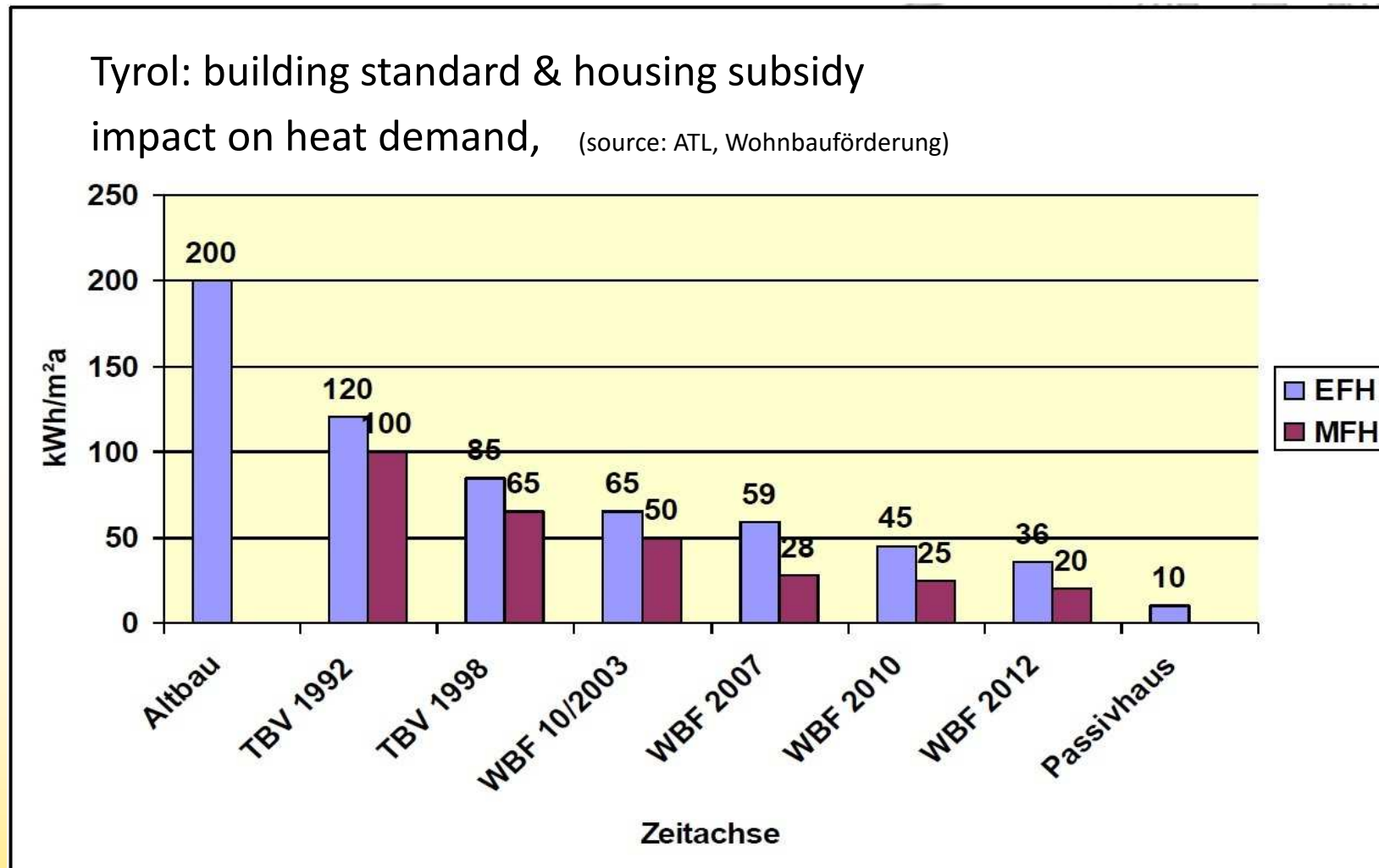
generated construction volume through housing subsidy 2008 - 2010

(values in mio. €) source: Landesrechnungshof Tirol, Court of Auditors report housing subsidy 2011, DI

Reinhard Krismer, Innsbruck, 2011-11-11

	2008	2009	2010
expenses			
housing subsidy new builds	215	193	194
housing subsidy refurbishment	27	39	47
total	242	231	241
Generated construction volume			
housing subsidy new builds	623	517	584
housing subsidy refurbishment	108	157	178
total	731	674	762
ration: construction volume / expenses			
total	3,0 / 1	2,9 / 1	3,2 / 1

Tyrol, Austria: (deep) renovation subsidies



„Sinfonia“ case example

Reichenauerstrasse 91-99, Neue Heimat Tirol



IN 57, 58, 60, 61:



rental

state of construction: partly renovated

- ventilated metal facade, ca. 15-17 yrs.
- parapets, loggias & access balconies, 15-17 yrs.
- windows, ca. 12 yrs.
- roof insulation, 2011
- apartments, if apartment is handed over
- building services. In case of damages

intended interventions:

- main stairway, glazing, handrails
- elevator, adjusting to new standards
- building services, smart metering, HVAC
- thermal envelope, Bestsheets Sinfonia

IN 59:



condominium

state of construction: partly renovated

- windows, ???
- building services, ???

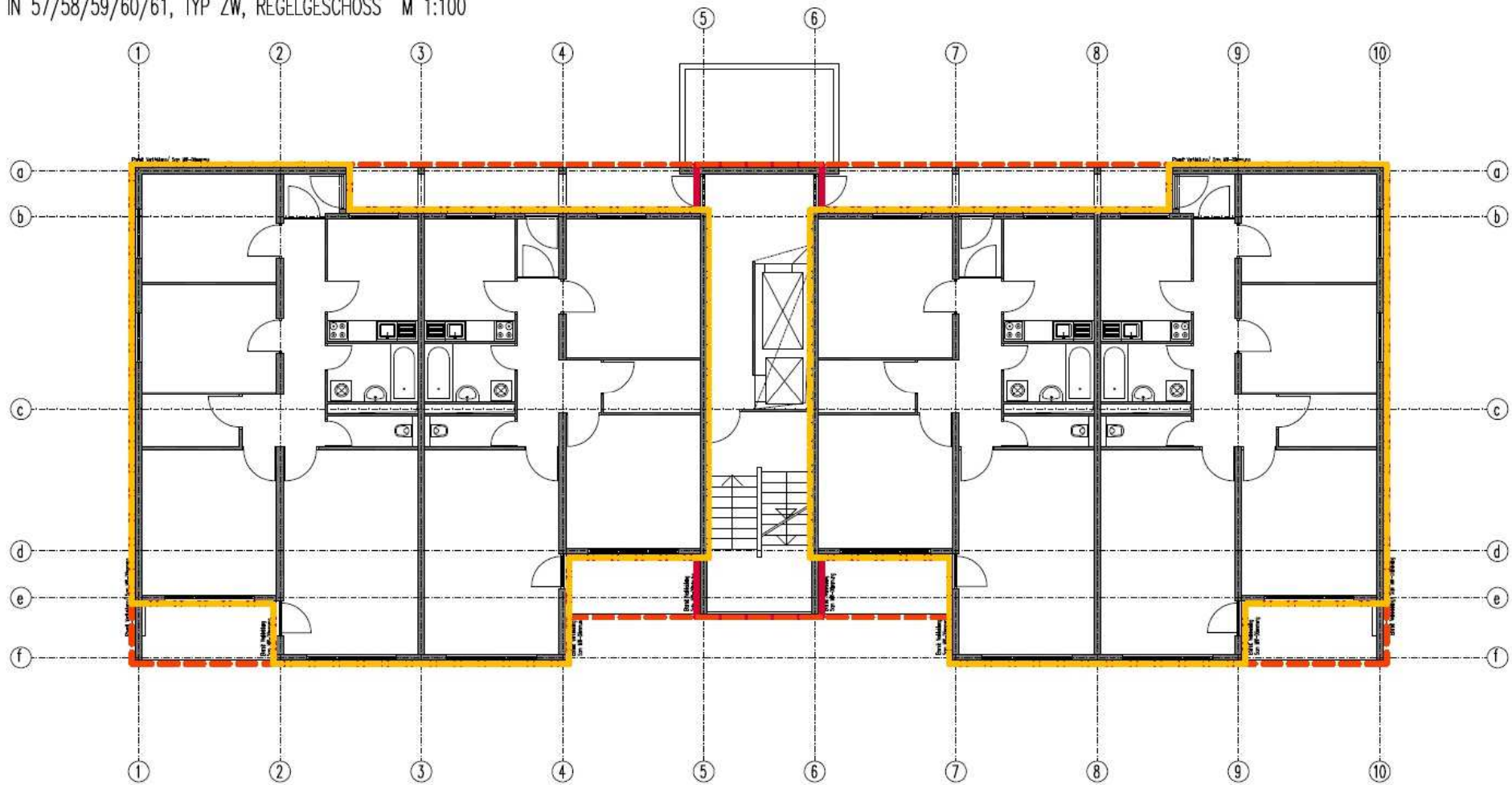
Restructuring requirement:

- facade, driving rain penetrating
- main stairway, glazing, handrails
- elevator, adjusting to new standards
- building services, smart metering, HVAC
- parapets, loggias & access balconies
- thermal envelope, mandatory requirements
„deep renovation“ OIB RL 6

„Sinfonia“

case example: deep renovation, inhabited

IN 57/58/59/60/61, TYP ZW, REGELGESCHOSS M 1:100



targets „deep renovation“

Building components:

- exterior wall, $u = 0,2 \text{ W/m}^2\text{K}$, 20cm STB, 18cm MW WLG 036
- windows, doors, $u = 0,8 \text{ W/m}^2\text{K}$
- basement ceiling, $u = 0,283 \text{ W/m}^2\text{K}$, 10cm MW WLG 036
- smoothing thermal envelope: parapets, loggias & access balconies

Building services:

- ventilation with heat recovery
- heating/warm water – optimising supply
- reduction of distribution losses
- use of renewable energy (PV)

Maßnahmenkatalog

Sanierungsvarianten, Förderung Land+Stadt

Typ ZW	EH	€/EH	Summe €	Variante 1	WBF-5	IFS-IBK	Variante 2	WBF-5	IFS-IBK
Sockelsanierung									
Abbr. Traufenpf., Erdarbeiten Ifm	104,00	€ 120,00	€ 12.480,00	€ 12.480,00	€ 4.368,00	€ 624,00	€ 12.480,00	€ 4.368,00	€ 624,00
Abdichten, Dämmen m²	85,00	€ 75,00	€ 6.375,00	€ 6.375,00	€ 2.231,25	€ 318,75	€ 6.375,00	€ 2.231,25	€ 318,75
Dämmung Kellerdecke									
Kellerdeckendämmung 10cm MW/Vlies	480,00	€ 50,00	€ 24.000,00	€ 24.000,00	€ 8.400,00	€ 1.200,00	€ 24.000,00	€ 8.400,00	€ 1.200,00
Dämmung oberste Geschoßdecke									
Maschinenhaus Lift, 30cm XPS, Abdichtung, Kies	38,00	€ 250,00	€ 9.500,00	€ 9.500,00	€ 3.325,00	€ 475,00	€ 9.500,00	€ 3.325,00	€ 475,00
Sanierung Aussenwand									
Gerüstung, m²	4490,00	€ 5,50	€ 24.695,00	€ 24.695,00	€ 8.643,25	€ 1.234,75	€ 24.695,00	€ 8.643,25	€ 1.234,75
Demontage Blechfassade MW (IN57-60) netto, m²	3570,00	€ 15,00	€ 53.550,00	€ 53.550,00	€ 18.742,50	€ 2.677,50	€ 53.550,00	€ 18.742,50	€ 2.677,50
Balkongeländer/UK Perspate neu, Ifm	520,00	€ 250,00	€ 130.000,00	€ 130.000,00			€ 130.000,00	€ 45.500,00	€ 6.500,00
Fassadenpaneel neu	2595,00	€ 150,00	€ 389.250,00	€ 389.250,00	€ 136.237,50	€ 19.462,50	€ 389.250,00	€ 136.237,50	€ 19.462,50
Perspate neu	675,00	€ 150,00	€ 101.250,00	€ 101.250,00			€ 101.250,00	€ 35.437,50	€ 5.062,50
WDVS Loggien, Laubengänge, m²	1485,00	€ 125,00	€ 185.625,00	€ 185.625,00	€ 64.968,75	€ 9.281,25			
WDVS Maschinenhaus Lift, m²	80,00	€ 125,00	€ 10.000,00	€ 10.000,00	€ 3.500,00	€ 500,00	€ 10.000,00	€ 3.500,00	€ 500,00
Fenster, Fenstertüren, Schiebefenster Loggien									
Fenster/Fenstertüren, Kompletttausch, m²	850,00	€ 500,00	€ 425.000,00	€ 425.000,00	€ 148.750,00	€ 42.500,00			
Fenster/Fenstertüren, Teilttausch, Loggieneinh. M²	336,00	€ 500,00	€ 168.000,00				€ 168.000,00	€ 58.800,00	€ 16.800,00
Wohntüren	123,00	€ 1.250,00	€ 153.750,00	€ 153.750,00	€ 53.812,50	€ 15.375,00			
Loggienverglasung, m²	808,00	€ 750,00	€ 606.000,00				€ 606.000,00	€ 212.100,00	€ 60.600,00
Verglasung Stiegenhaus, Maschinenhaus Lift, m²	126,00	€ 650,00	€ 81.900,00	€ 81.900,00	€ 28.665,00	€ 8.190,00	€ 81.900,00	€ 28.665,00	€ 8.190,00
Sonnenschutz									
Faltläden, m²	395,00	€ 170,00	€ 67.150,00	€ 67.150,00	?	?	€ 67.150,00	?	?
Elektrik/Sat/Blitzschutz									
FI-Schutzschalter/Erdung		€ 0,00	€ 0,00	€ 0,00	€ 0,00	€ 0,00	€ 0,00	€ 0,00	€ 0,00
Lüftung/Heizung									
Lüftungsanlage je Wohnung 60/3	20,00	€ 3.500,00	€ 70.000,00	€ 70.000,00	€ 24.500,00	€ 8.750,00	€ 70.000,00	€ 24.500,00	€ 8.750,00
				€ 1.643.275,00		€ 110.588,75	€ 1.754.150,00		€ 132.395,00

o. Loggieneinhausung

mit Loggieneinhausung

Planungskosten	%				
Architektur, Fachplanungen	3,00%	€ 82.163,75	€ 28.757,31	€ 87.707,50	€ 30.697,63
		€ 1.725.438,75	€ 534.901,06	€ 1.841.857,50	€ 621.147,63

EU Zuschuss Sinfonia, € 50/m²	€ 340.100,00
Abzug WBF	€ 534.901,06
Abzug Ökobonus	€ 15.950,00
Abzug IFS-IBK	€ 110.588,75
Sonderförderung Klima & Energiefonds	€ 0,00
Bundesförderung Thermische Sanierung	€ 0,00
10*12*0,83*3343 Mietzinserhöhung/10J	€ 544.986,00
10*0,07*43,2*3343 HW-Einsparung/10J	€ 169.052,52
Fehlbetrag Rücklagenkonto	€ 0,00

€ 340.100,00
€ 621.147,63
€ 15.950,00
€ 132.395,00
€ 0,00
€ 0,00
€ 544.986,00
€ 169.052,52
€ 0,00

Fehlbetrag nach Sanierung	€ 9.860,42
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€ 18.226,35

cost optimum mandatory !

OIB RL 6

YES, WE CAN !



Thanks for listening !