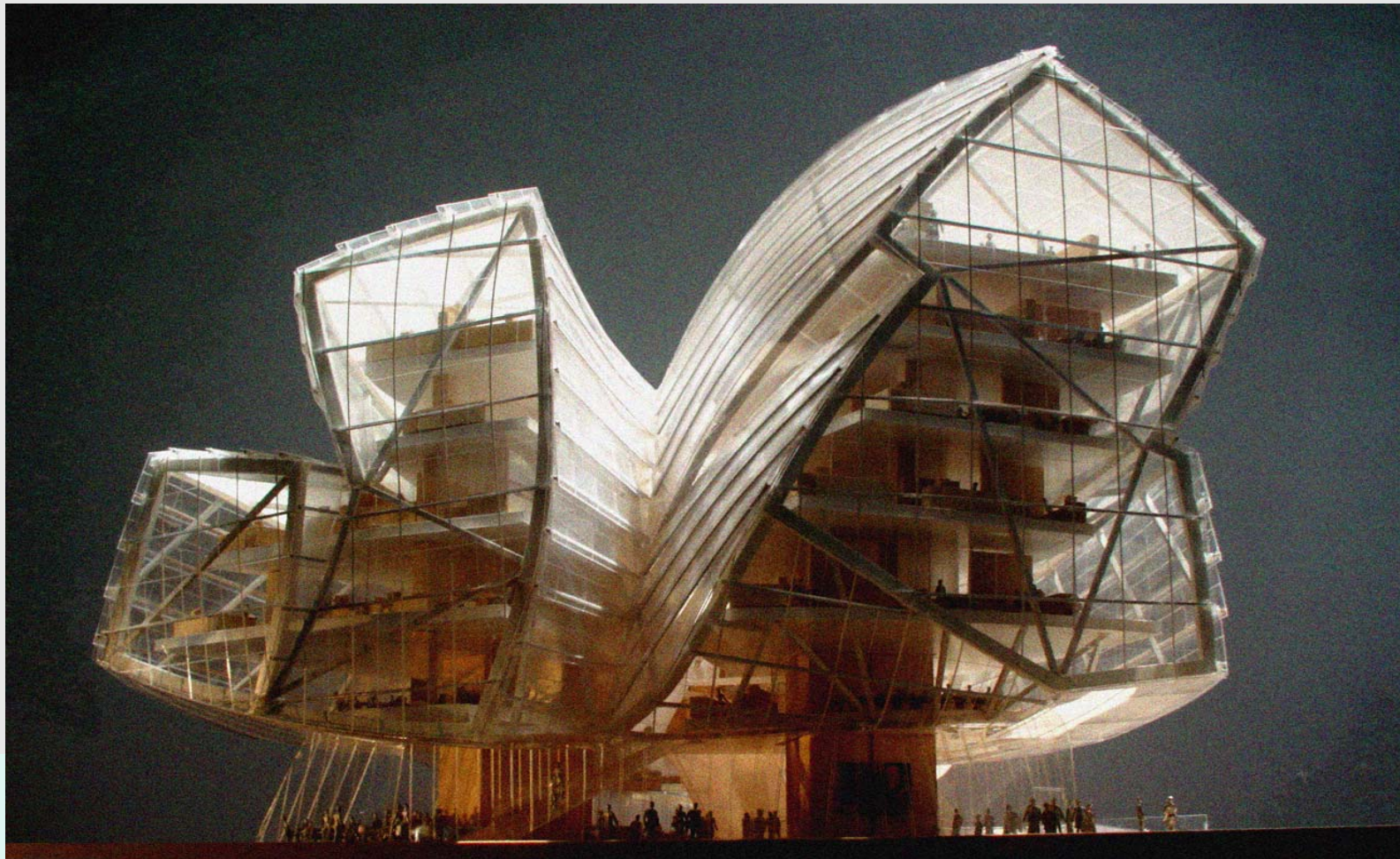




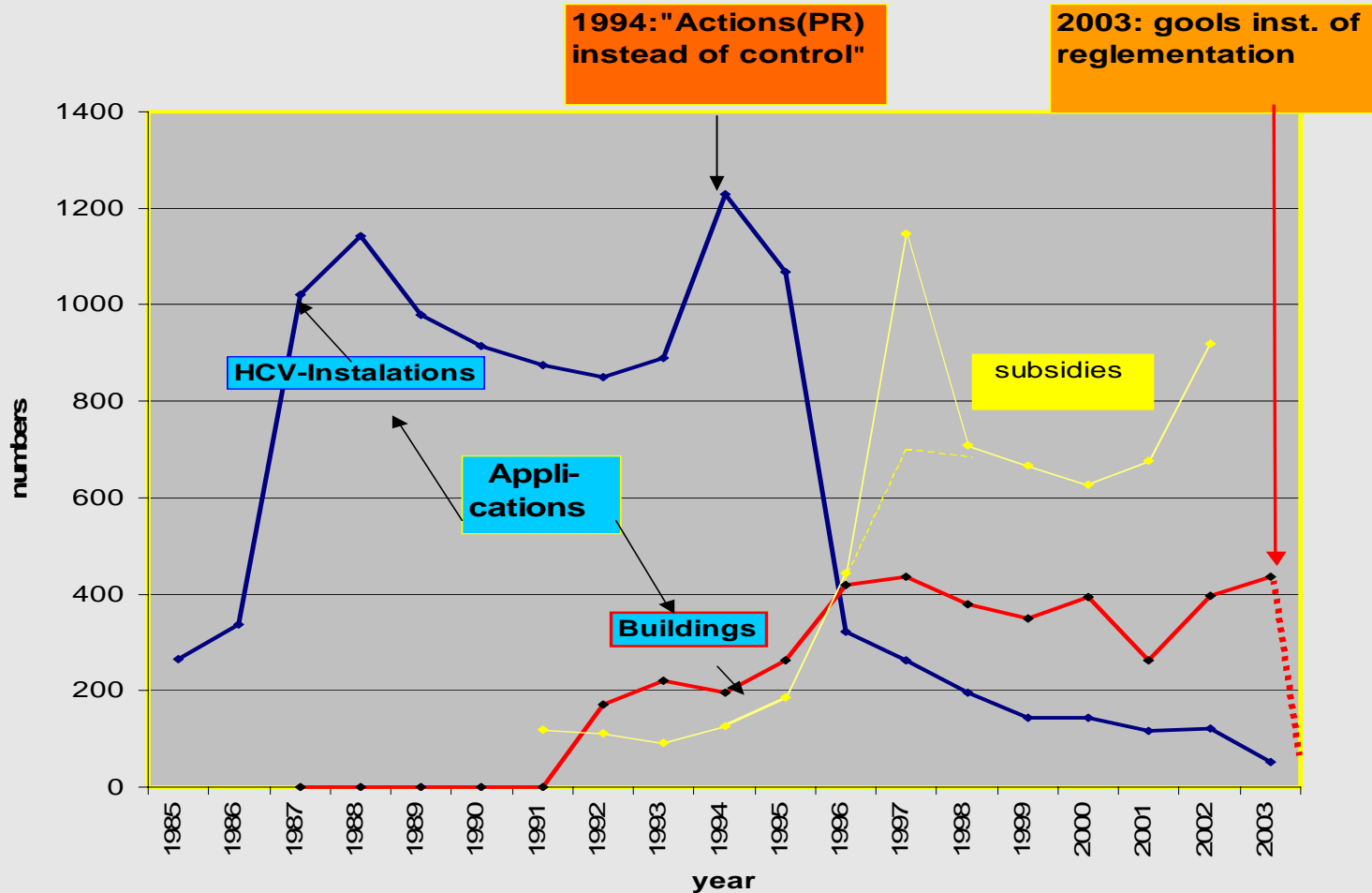
NOVARTIS CAMPUS – a VISION

detailed regulationOR.... just goals for legal energetic requirements





Modification of strategies at the level of implementation of energy law:





NOVARTIS CAMPUS – a VISION

Elements of the energy-agreement

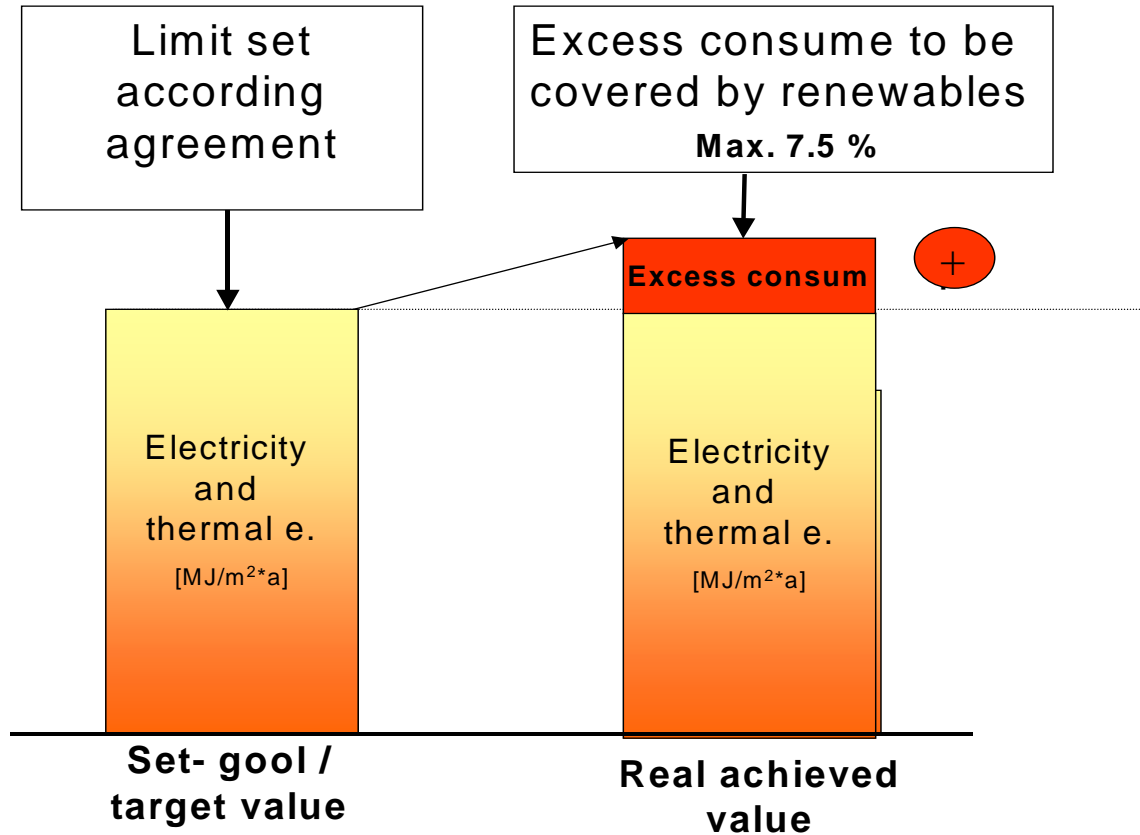
between

Local Authorities and NOVARTIS from 2. Februar 2004

- 1. Allowed „Specific Energy Consume“ (SEC) for each building**
 - **thermic energy** (MJ/m²*a)
 - **electrical energy** (MJ/m²*a)
- 2. Annual energetic balance of each building using „Bonus/Malus“**
- 3. A Malus of 7.5% at the maximum (for the total CAMPUS-area) may be compensated with renewable**

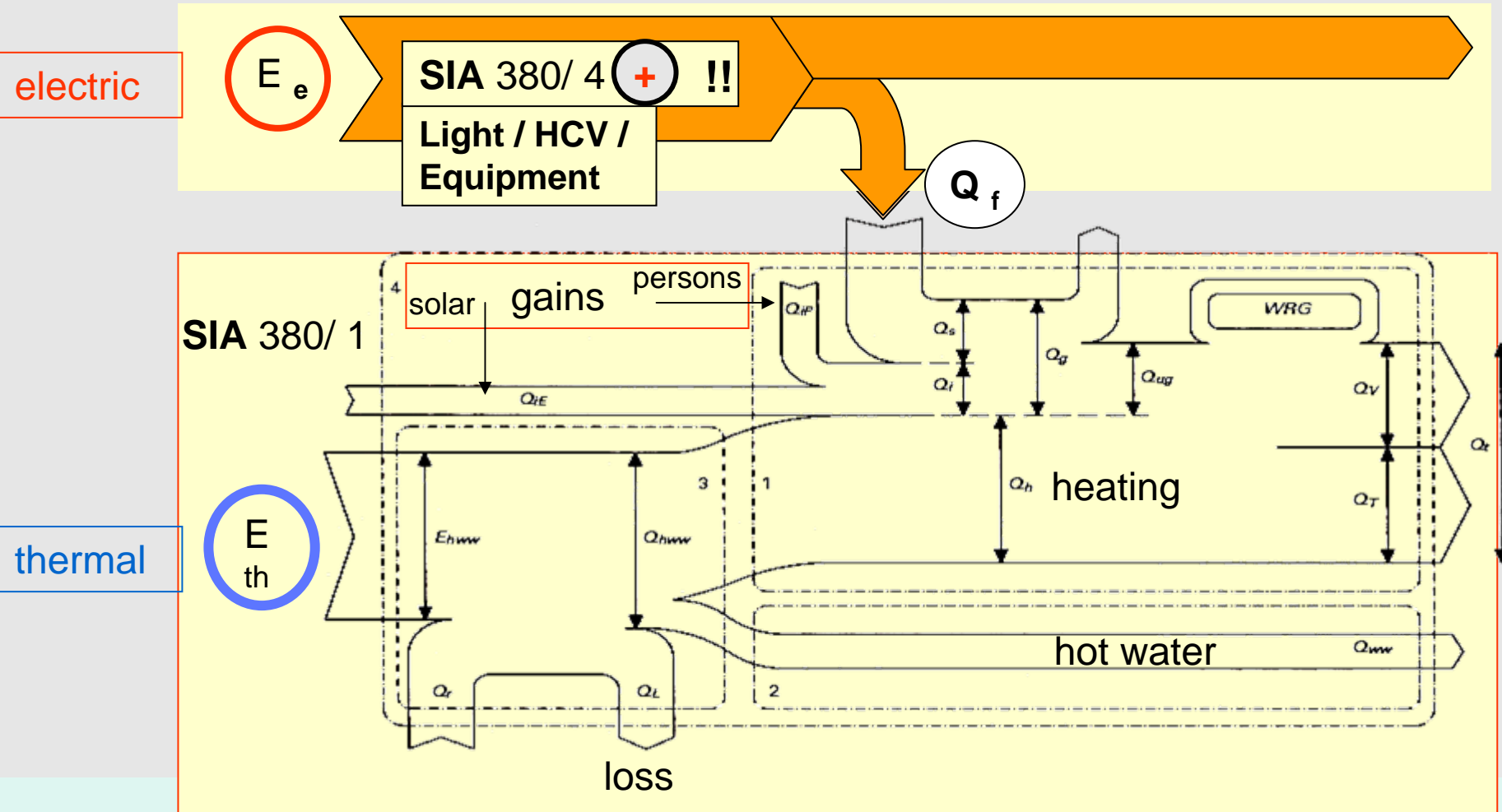


NOVARTIS CAMPUS – eine VISION





„Specific Energy Consumption“ (MJ/m²*a) based on standards of **SIA***





NOVARTIS CAMPUS – a VISION

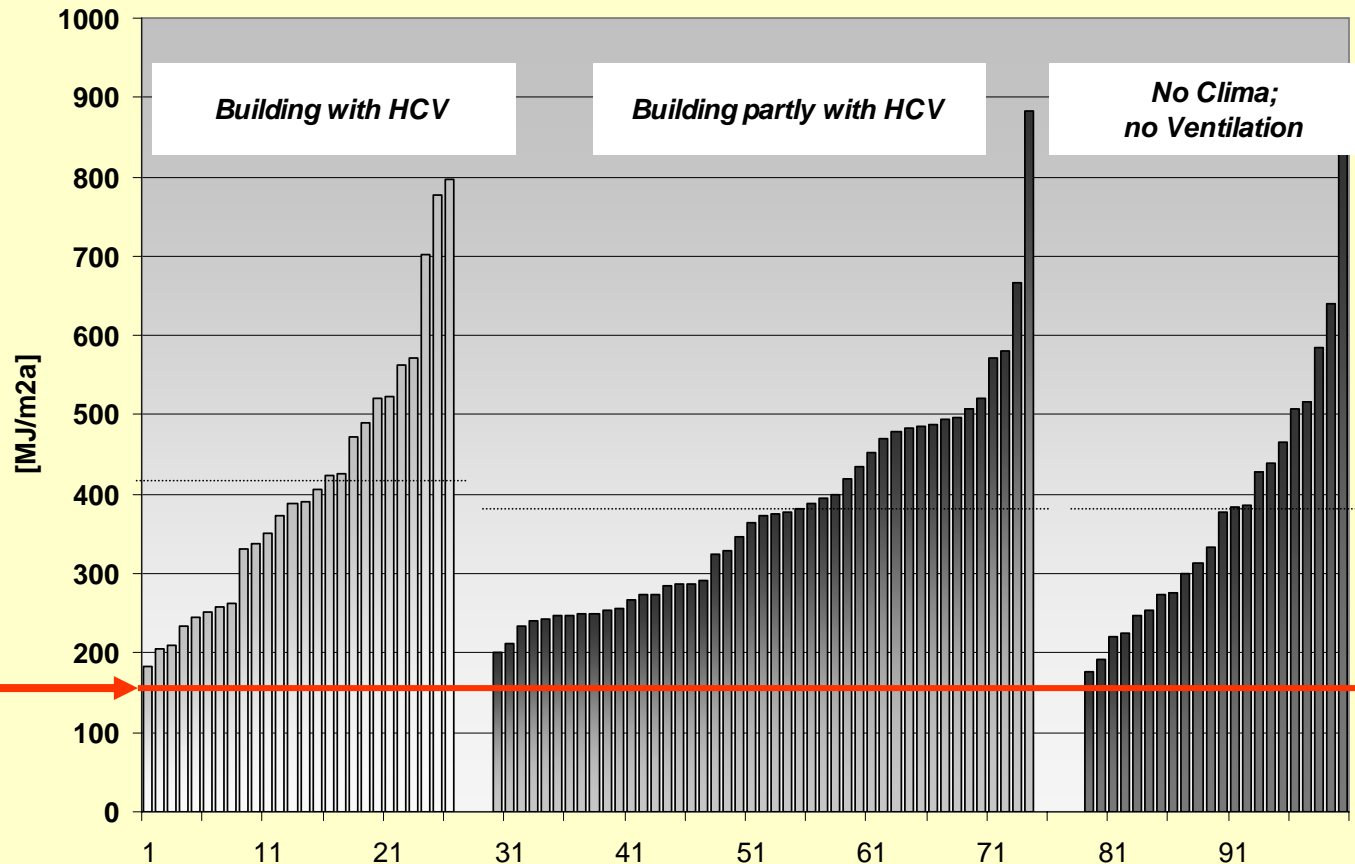
Specific **E**nergy **C**onsumption for each building

At least. 8% below bench-mark

	SEC_{el}	SEC_{th}
Restaurant		
offices		
offices		
Reception/ lobby		
Audience-hall		
Total SEC building „n“	<input type="text"/>	<input type="text"/>



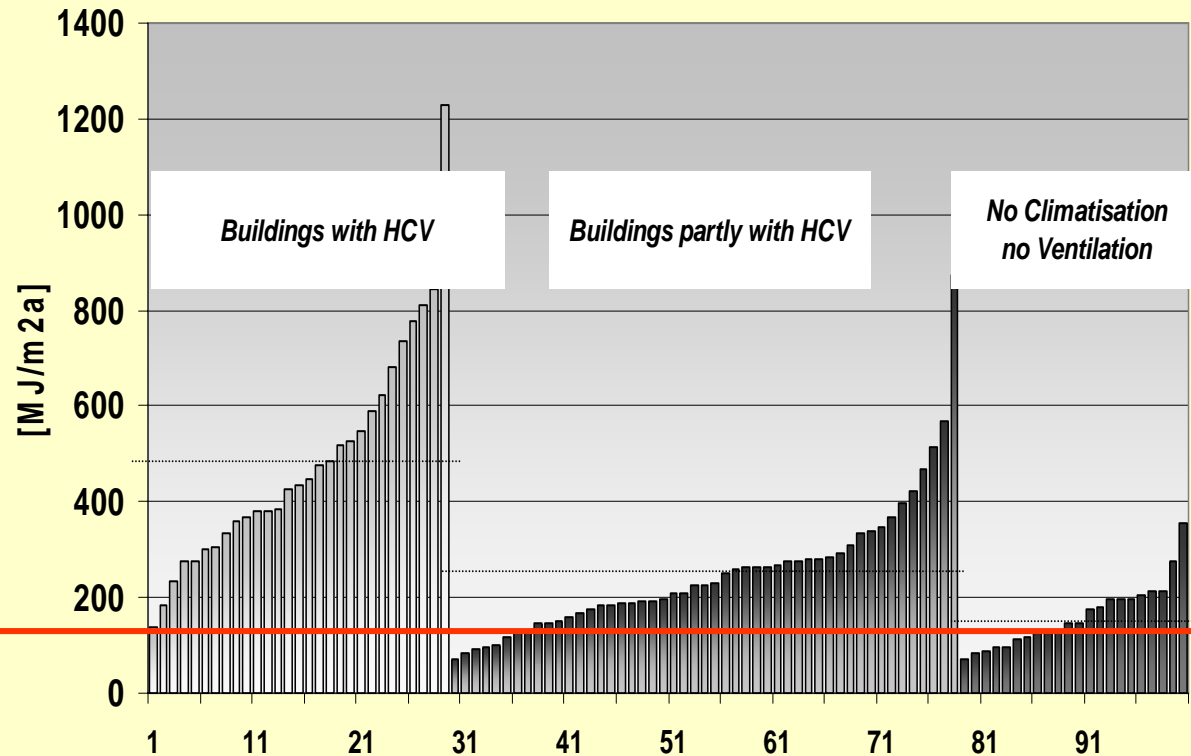
SEC- thermic of 100 administrative buildings



CAMPUS-agreement
150 MJ/m²a



SEC - electricity of 100 administrative buildings



CAMPUS-agreement
150 MJ/m²*a

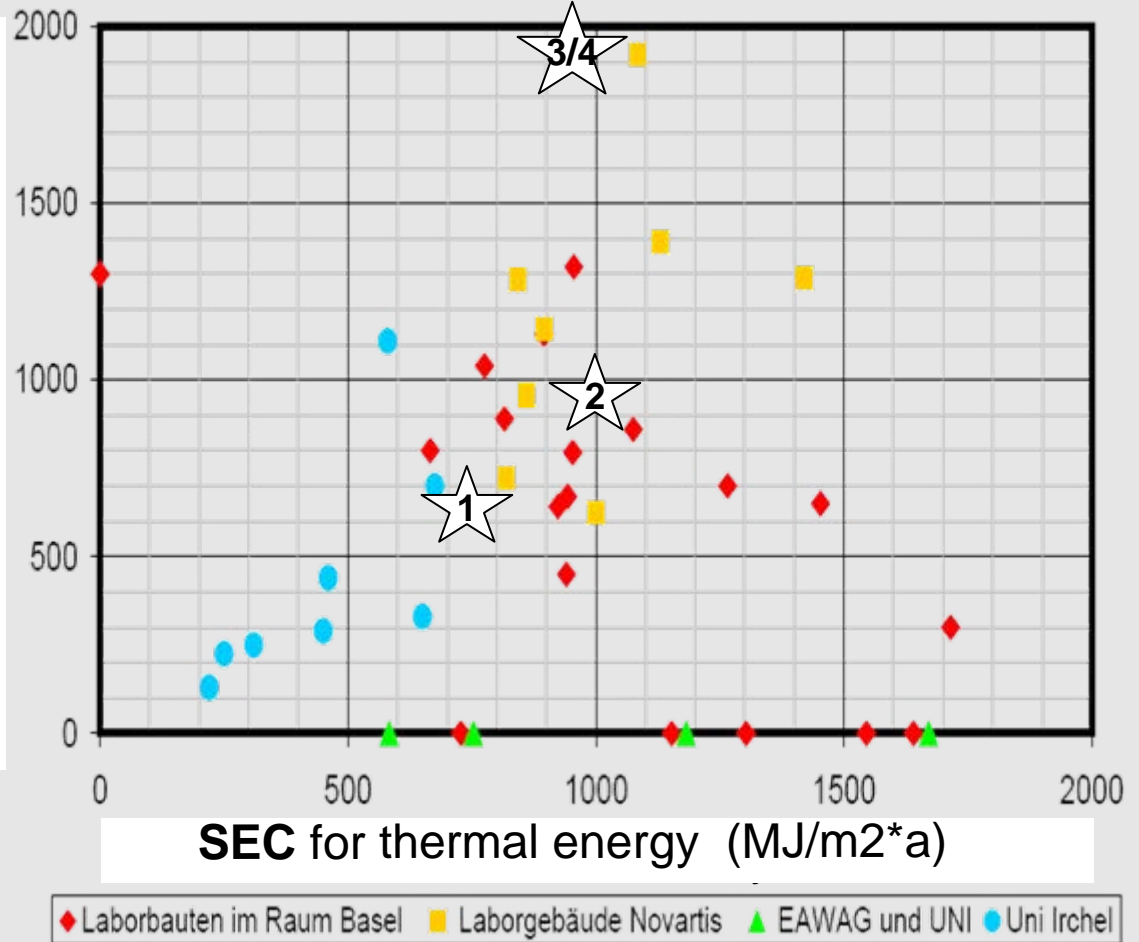


SEC datas of different Labs in Switzerland

CAMPUS LAB's
Base for discussion

- ★ 1 analytical
- ★ 2 Bio <20% animals
- ★ 3 Bio >50% animals
- ★ 4 chemical

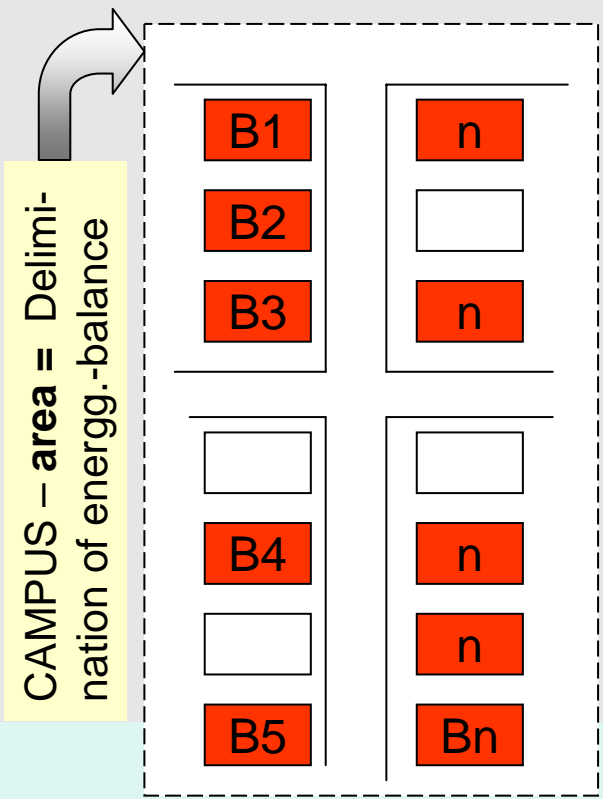
SEC for thermal energy (MJ/m²*a)





NOVARTIS CAMPUS – eine VISION

Annual adjustment for thr whole CAMPUS-area




	SEC el	SEC th	Bonus/ Malus
B1			++
B2			-
B3			-
Bn			
Total			

Comparison
goal / eff.result

Compensation with „renewables“
(max.7.5%)

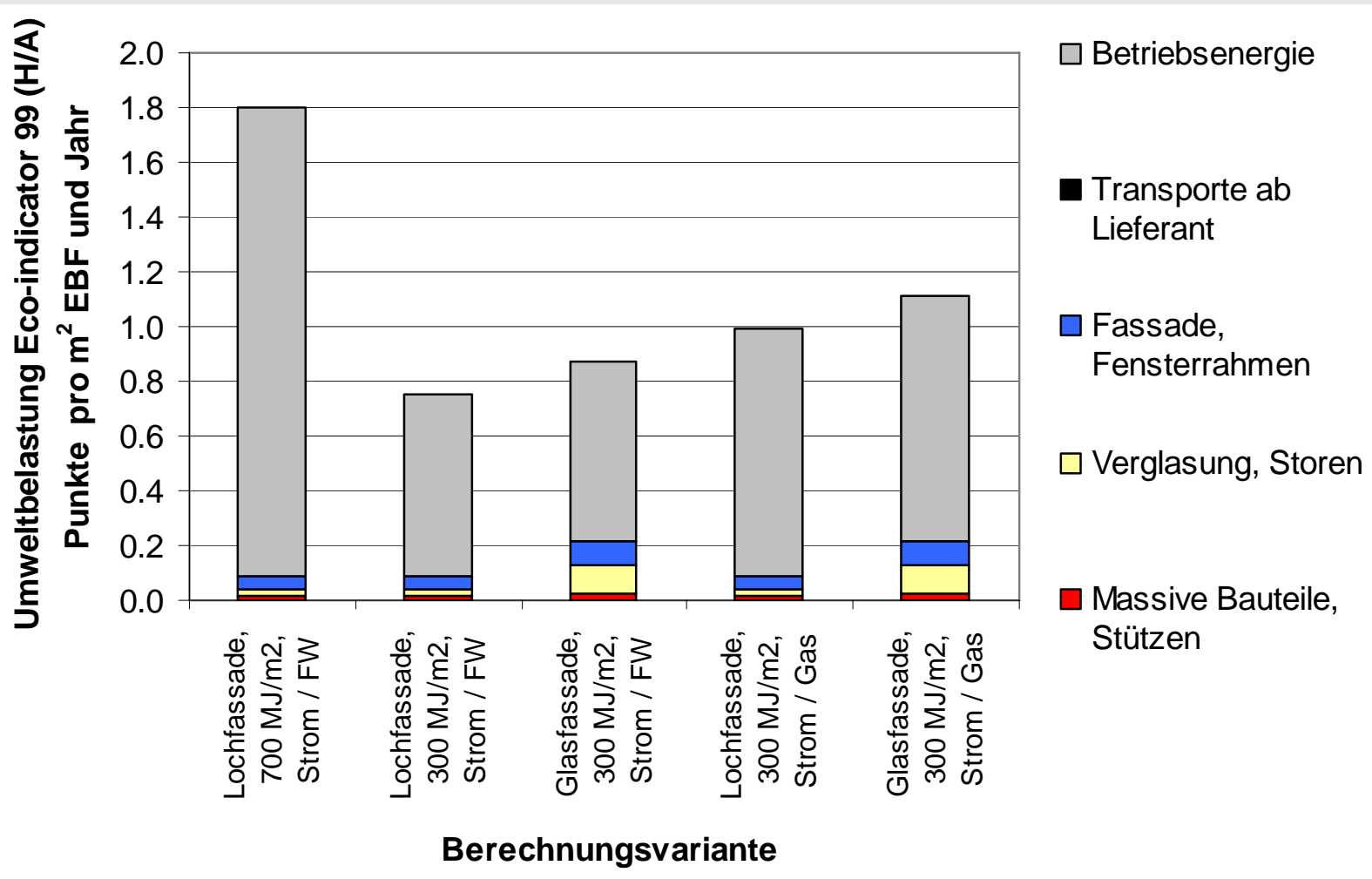


Advantages and disadvantages of traditional and applied new CAMPUS-model

	administrative	goal-orientated
Traditionally	<p>Application for a construction-project compiling controlling setting of obligations „site visit“ grant of authorizationloose of control !</p>	<p>No feedback</p>
Model applied in CAMPUS	<p>determine SEC's for each building with authorities</p>	<p>continuous review of achievement</p> <p></p> <p>monitoring / reporting..... each year.</p>



Nachhaltigkeit von Glas- vs. konventioneller Architektur* ?





Nachhaltigkeit von Glas- vs. konventioneller Architektur* ?

