

Novartis Campus of Knowledge

A city within the city

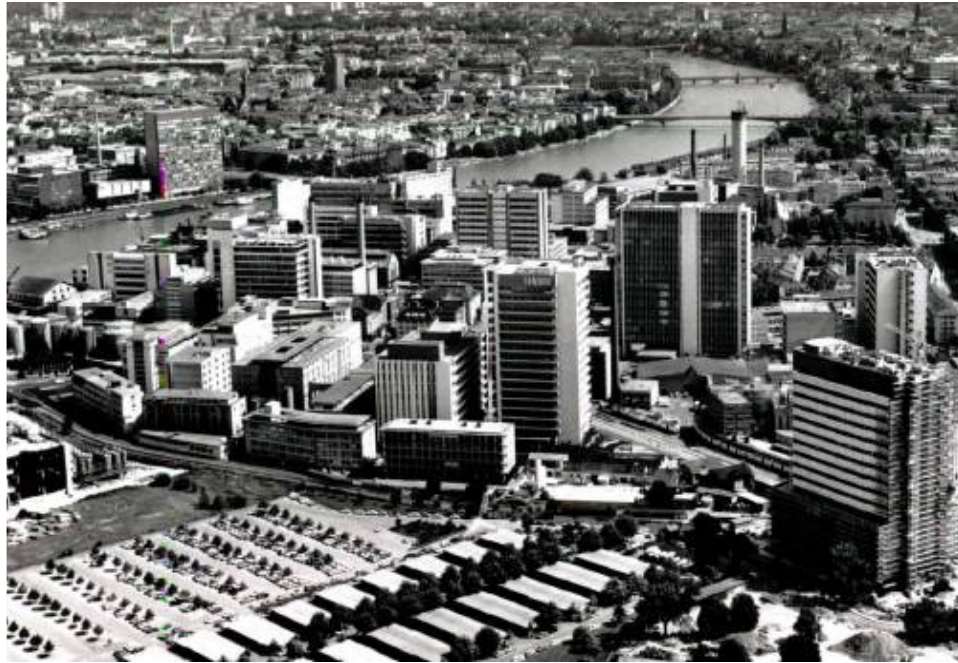
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Energy Management and Consulting

POLYCITY Workshop
Basel, 2. February 2006

Site Information

Background:	4 Sites (Klybeck, Rosental, St. Johann, Schweizerhalle)	
Companies:	3 Main Companies (Novartis, Ciba, Syngenta)	
Associates:	Total	15'000
	Novartis	7'000
	Ciba	2'800
	Syngenta	1'200
	Third-parties	4'000
Activities:	Administration, Labs, Production, Warehouse, Infra	
Number of Buildings:	Total 280	
Energy cost per Year:	110 Million CHF	
	Electricity, Steam, Hot water	77 Million CHF
	Water, Waste water	22 Million CHF
	Residual media	11 Million CHF
Yearly Consumption:	Electricity, Steam, Hot water	778 GWh
	Water, Waste water	54 Million m3

From an Industrial Site to ... a Campus of Innovation and Knowledge

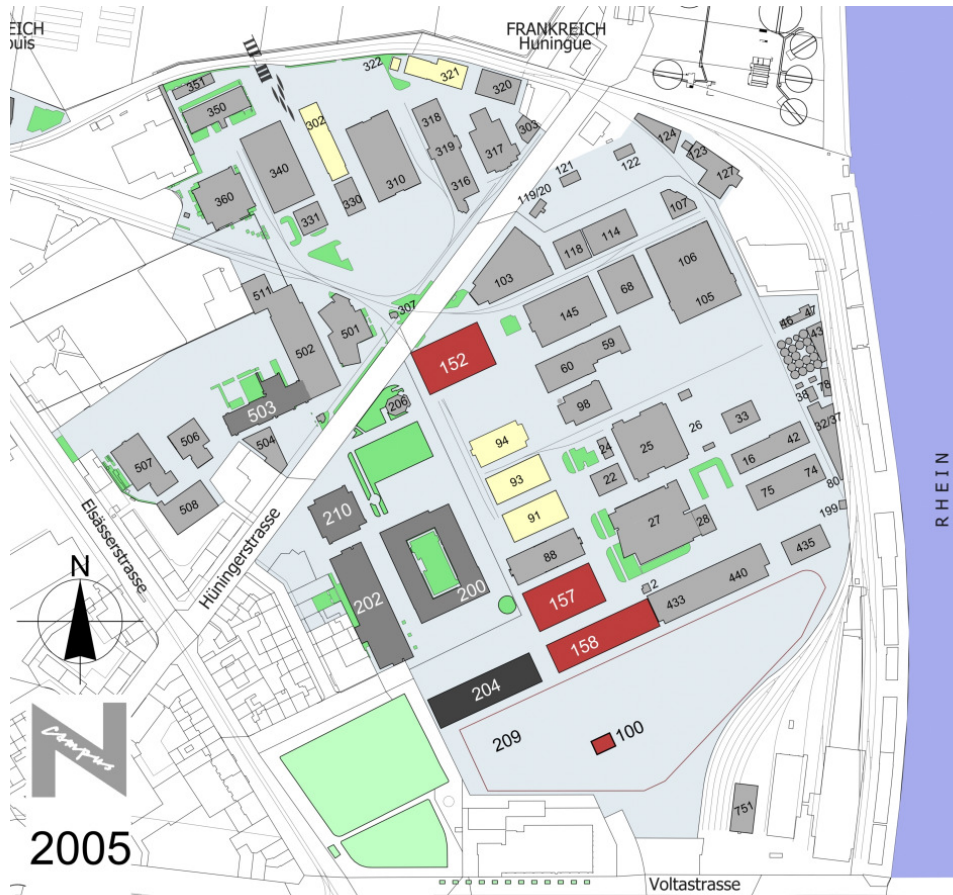


Site St. Johann
1980's

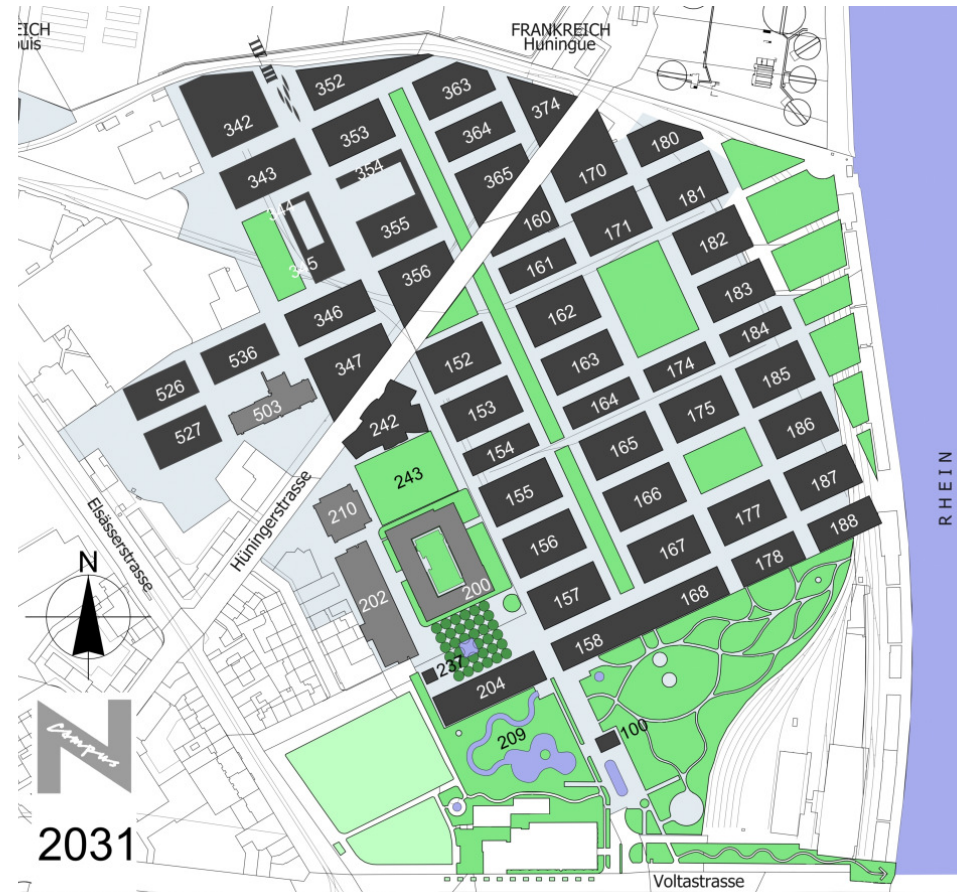
Masterplan
2030



From an Industrial Site to ... a Campus of Innovation and Knowledge (2)



**Site St. Johann
2005**



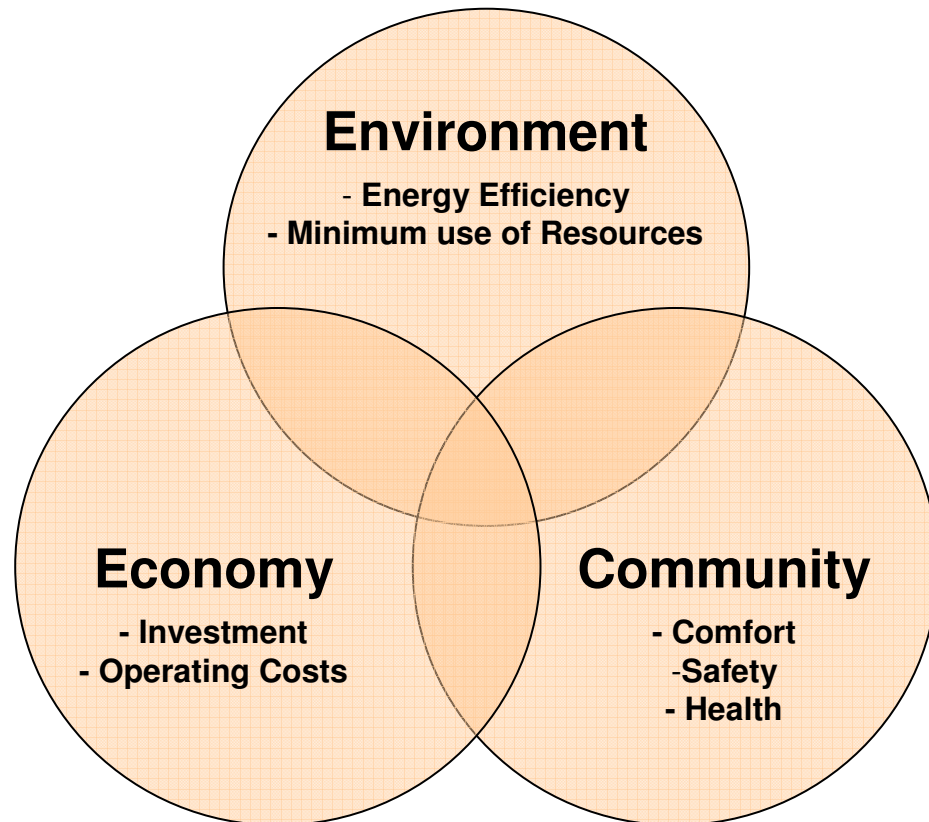
**Masterplan
2031**

Tomorrow begins today

- Vision to act today without jeopardizing our future generations
- Holistic approach for sustainability initiatives at the Basel sites
- Involvement of management and all layers of decision makers and finally all of you
- Technology and nature, begin small but now



Defining sustainable development



Brundtland-Report, 1987:

„Sustainable development meets the needs of the present without compromising the ability of future generations to meet their own needs.“

Areas of application

Resources

Energy, Waste, Ground, Air

e.g.: 2000 Watt Society, energy challenging, energy saving projects, consumption of renewable energies

Material flow

Equipment, Consumables, Solid waste, Waste water

e.g.: Waste separation in buildings, recycling plants, waste incineration

Building materials

Raw materials, Demolition

e.g.: Purchasing guidelines, Building parts exchange, logistics for waste disposal

Mobility / Traffic

Internal and private traffic

e.g. Promotion of public transport and use of bicycle, shuttle buses

Facility Management

Buildings and Plants, Financing

e.g. Novartis Standards, training of building responsible / technicians, sustainable operation, R&M

Social environment

Well-being, Health

e.g. code of conduct, diversity, health promotion programmes, fitness and wellness, fit@work

Sustainable development of energy consumption in the Campus Project

Most important challenges

- Reduction of energy requirement by a factor of 3.
- Usage of renewable and CO₂-free energy
- Processes to ensure that the required specifications are actually being met in the new buildings

Targets

- 2000-Watt society for buildings
- CO₂-free site (according Swiss law)
- 100% renewable energy

Sustainable development of energy consumption in the Campus Project

Process

- Establish clear specifications for planners
- Verify conformity in regular challenging sessions
- Measure success thanks to individual energy statistics
- Measure CO₂ (report to Swiss Federal Office for Energy)

➔ Needs a well-balanced team of investor, planner, engineer and user

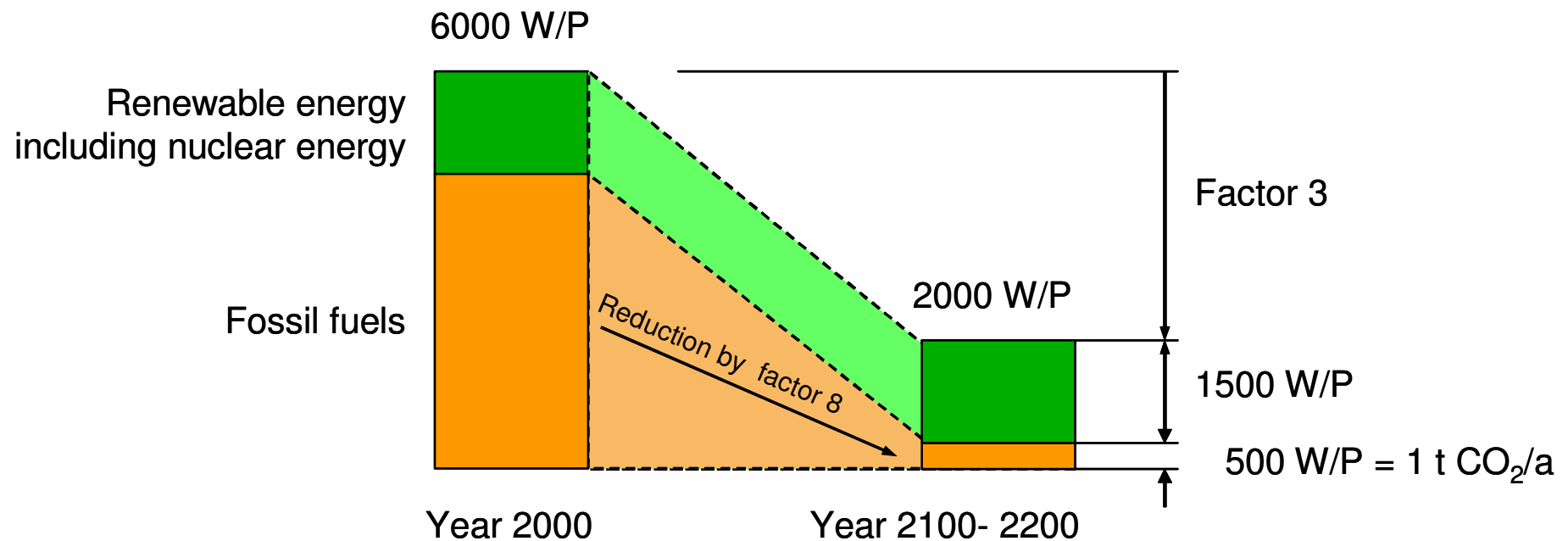
Issues

- Availability of renewable energies
- Architecture vs. sustainability

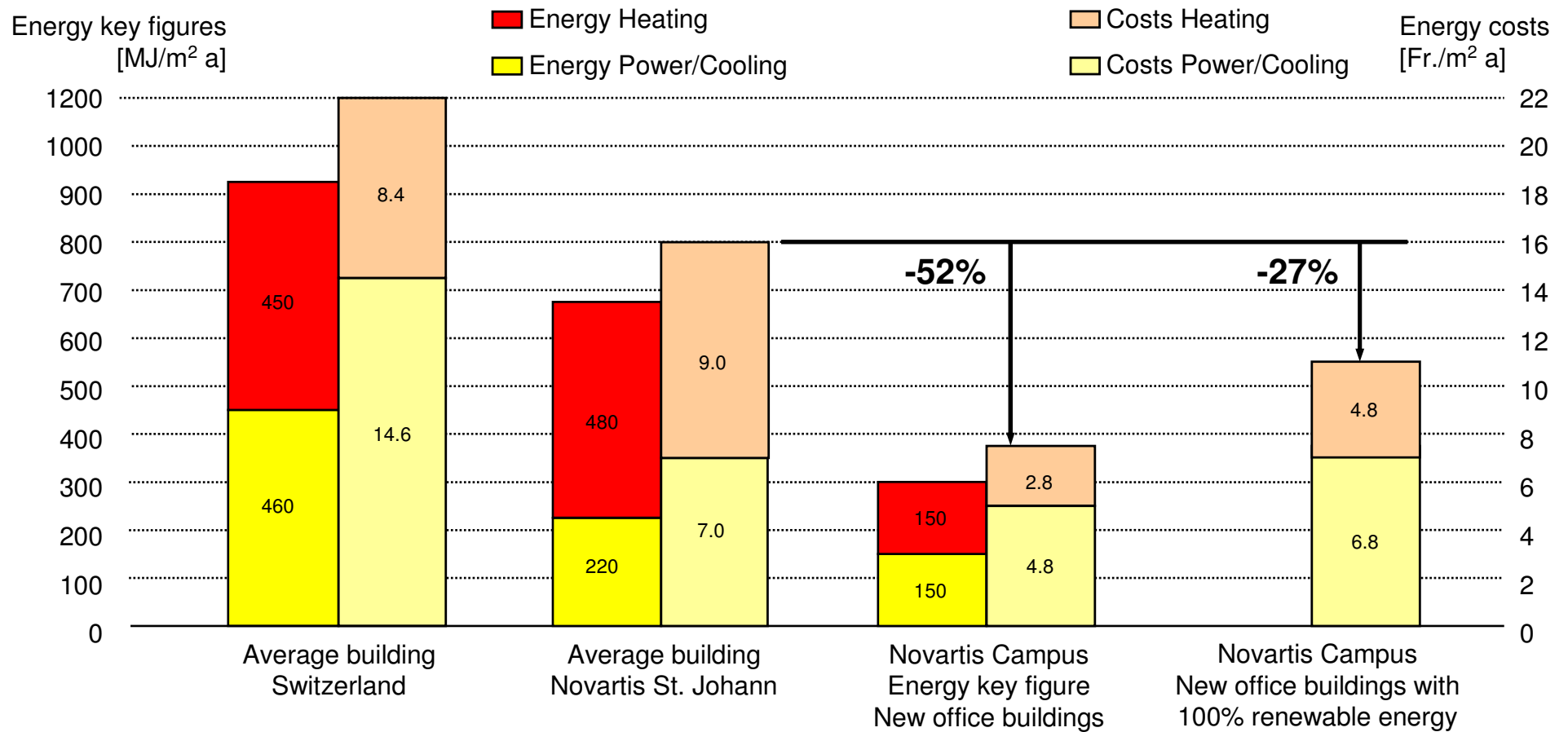
2000 Watt per capita society in buildings

Targets

The 2000 Watt Society aims at reducing CO₂ output by factor 8.
The part of non fossil fuel amounts the issue of the energy supply.
CO₂ output per capita is thereby reduced to 1 t CO₂/a.



Renewable energy in office buildings



Success Stories

Site	Comparison of key data of the years 1990 & 2000					
	Total Energy Consumption 1990	Total Energy Consumption 2000	CO ₂ -Outlet 1990	CO ₂ -Outlet 2000	Reduction of Energy Consumption	Reduction of CO ₂ -Outlet
	GWh	GWh	to CO ₂	to CO ₂	%	%
Klybeck	526	457	89'165	61'339	13.1	31.2
Rosental	136	105	16'624	10'680	22.8	35.7
St. Johann	348	208	38'810	18'165	40.2	53.2
Schweizerhalle	273	354	37'338	0		100.0

Tomorrow begins today - conclusions

- Vision ...and courage
- Everybody needs to be involved and committed
- Awareness campaigns (begin small, grow bigger)
- Sustainability = automatism = ordinary business behaviour



More information and pictures

➔ <http://www.novartis.ch/>