1 Primary school
La Tour - France
2.A. REF: SCHOOL 2005

- Bioclimatic design
- Two rainwater collection tanks of 30 m^3 each
- Buried earth pipes for summer cooling
- Ventilation treatment and control system
- Semi-automatic lighting system
- Controlled ventilation
- Low energy materials
- 12 cm of mineral wool
- PV system on the roof
- BMS (Building Management System)
- Wall: U= 0.47 W/m^2k
- Roof: U= 0.47 $W7m^2k$
- Ground floor: U= 0.43 $W7m^2k$
- Windows U= 2.9 W/m^2k

2 Primary school
Empoli – Italy
1.C. NEW: SCHOOL 2001

- Bioclimatic design
- External sunblinds
- Natural ventilation
- Precast insulation wall
- Air control system

3 High school
St Clément de Rivière – France
1.C. NEW: SCHOOL 2003

- Bioclimatic design
- Concrete structure
- PV on the roof
- Solar collectors
- Natural ventilation
- Skylight

4 Tanga school
Falkenberg-Sweden
1.C. NEW: SCHOOL 2000

- Solar tubes for daylight transportation
- Natural ventilation and solar chimneys to assist air movement

5 Great Notley School_
Braintree - England
1.C. NEW: SCHOOL 1999

- Bioclimatic design
- Timber construction
- Green roof
- Skylight
- Renovable materials
- Wall: U= 0.21 W/m^{2}k
- Roof: U= 0.32 W/m^{2}k
- Ground floor: U= 0.37 W/m^{2}k
- Windows U= 1.6 W/m^{2}k

6 Gerhard Muller Schule
Biberach – Germany
1.C. NEW: SCHOOL 2004

- Bioclimatic design
- PV on the roof
- External sun blinds
- Rain water collection tanks
- Groundwater cooling
- Mechanical ventilation + heat recovery
- Wall: U= 0.20 W/m^{2}k
- Roof: U= 0.23 W/m^{2}k
- Groundfloor: U= 0.27 W/m^{2}k
- Windows U= 1.3 W/m^{2}k

7 Educational Office Building
Southampton - UK
1.C. NEW: SCHOOL 2005

- Bioclimatic design
- Timber construction
- Use of removable resources
- Use of recyclable materials
- PV on the atrium roof
- External sun blinds
- Rain water collection tanks
- Connection to the University's District Heating network
- Buried Heat pipes
- BMS (Building Management System)
- Wall: U= 0.35 W/m^{2}k
- Roof: U= 0.25 W/m^{2}k
- Groundfloor: U= 0.25 W/m^{2}k
- Windows U= 1.5 W/m^{2}k

8 Energie Forum
Berlin – Germany
2.B. REF: OFFICE 2003

- Bioclimatic design
- 16 cm of external insulation
- External sunblinds
- PV system
- Energy piles + heat pump
- Floor heating
- Link to the district heat
- Mechanical ventilation

9 Finish Forest Research Institute
Joensuu – Finland
1.B. NEW: OFFICE 2004

- Bioclimatic design
- External and internal sunblinds
- Use of LCA materials
- Mechanical ventilation + heat recovery
- Link to the district heat
- Wall: U= 0.24 W/m^{2}k
- Windows U= 1.6 W/m^{2}k

10 County Hall Alsace
Strasbourg – France
1.B. NEW: OFFICE 2005

- Bioclimatic design
- Concrete structure
- External sunblinds
- Solar collectors
- Use of ground water
- Mechanical ventilation + heat recovery
- Wall: U= 0, 3 W/m^{2}k
- Roof: U= 0,27 W/m^{2}k
- Windows U= 1,6 W/m^{2}k

11 Centre of Nature Les Planes de Son
Lleida – Spain
1.B. NEW: OFFICE 2002

- Bioclimatic design
- Steel structure + concrete walls
- Green roof
- Solar tubes for daylight capture
- Solar collectors
- PV system
- Use of ground water
- Mechanical ventilation + heat recovery

12 Sanitas
BUPA - Madrid – Spain
1.B. NEW: OFFICE 2000

- Bioclimatic design
- concrete structure
- natural ventilation
- PV system on skylight

13 National Centre of Renewable Energies (CENER)
Navarra – Spain
1.B. NEW: OFFICE 2004

- Bioclimatic design
- Concrete structure
- Use of African teak
- Green roof
- Smartboard (PCM)
- External and internal sunblinds
- Natural ventilation
- Integrated PV system on the roof
- Solar collectors
- Rain water collection tanks

14 Villetta ecocompatibile
El Escorial – Spain
1.A. NEW: SINGLE HOUSE

- Bioclimatic design
- Use of LCA materials
- Timber construction
- External sunblinds

15 Housing for youngsters
Lodi – Italy
1.A. NEW: SINGLE HOUSE 2007

- Bioclimatic design
- Laminated insulating panels in polystyrene
- Adjustable external sun shading
- Large skylight at the centre of the roof
- South-facing glass (direct gain)
- Rain water collecting system
- Radiant panels in the floor
- Photovoltaics
- Automatic heating system control
- Security installation with on-line monitoring
- Light quality control sensors
- Wall: U= 0.11-0.18 W/m2k
- Roof: U= 0.13-0.18 W/m^2k
- Groundfloor: U= 0.38 W/m^2k
- Windows U= 1.1-1.7 W/m^2k
- EP_H = 6 KWh/m^3y

16 Primary Health Care Centre
Barcellona – Spain
1.E. NEW: PUBLIC BUILDINGS

- Bioclimatic design
- Prefabricated concrete elements
- Perforated vertical and horizontal solar protection
- Use of cork insulation
- Rain water collection tanks
- PV system on the façade and on the roof
- Solar collectors
- BMS monitoring
- Natural + mechanical ventilation
- Wall: U= 0.5 W/m^{2}k
- Roof: U= 0.35 W/m^{2}k
- Groundfloor: U= 0.45 W/m^{2}k
- Windows U= 1.79 W/m^{2}k

17 Mercator Center
Lubiana – Slovenia
1.E. NEW: PUBLIC BUILDINGS 2007

- Bioclimatic design
- Low temperature floor cooling/heating system
- Solar tubes for daylight capture
- Displacement ventilation diffuser
- PV system
- BMS monitoring
- Wall: U= 0.2 W/m^{2}k
- Roof: U= 0.24 W/m^{2}k
- Groundfloor: U= 0.21 W/m^{2}k
- Windows U= 1.1 W/m^{2}k

18 Nursing Home and Centre for Senior Citizens
Steinfeld – Austria
1.E. NEW: PUBLIC BUILDNGS

- Bioclimatic design
- Ground floor structure in reinforced concrete + timber construction;
- Roof: gravel + 22 cm of polyurethane
- Ceiling-height windows with low sills
- Geothermal system for heating and cooling
- Natural (central atrium) + mechanical ventilation
- Energy savings in the building amounting to 30% in comparison with similar care centres

19 Dwellings for senior Citizens
Domat – Switzerland
1.E. NEW: PUBLIC BUILDINGS

- Designed to meet the needs of the disabled
- Bioclimatic design
- South façade: fully glazed – north façade: closed
- 20 cm external layer of insulation
- PCM used as heat storage and light control on façade

20 Administrative Headquarters of the Rijkswaterstraat Zeeland
Middelburg - Amsterdam - Netherlands
1.B. NEW: OFFICE

- South faced: external light-deflecting louvers and additional clerestory windows
- North façade: fully glazed
- Roof: 8 cm rock-wool insulation
- Water pipes running through the precast concrete floor slabs
- Energy consumption for space heating: 21 KWh/m^2y

21 Secondary school
Brixlegg - Austria
1.C. NEW: SCHOOL

- Concrete structure
- Solar collectors 200 m^2 + oil-powered heating plant
- Automatically controlled external louver blinds and internal solar ails below the top lights to shade classrooms
- Heating: preheated air is blown into the classroom via inlets in the lower part of the façade
- Cooling: extract air is moistened and thus adiabatically cooled + ventilation plant 24 hours a day
- Wall: U= 0.13 W7m^2k
- Roof: U= 0.1 W7m^2k
- Windows - triple glazing: U= 0.79 W7m^2k
- E Energy consumption for space heating < 15 KWh/m^2y

22 Passive - Energy
Salzburg – Austria
1.A. NEW: SINGLE HOUSE

- Timber construction
- Green roof: 28 cm of triple insulation
- Wall: 3.6 cm of external insulation (additional to cavity insulation)
- Solar collectors on the roof: 200 m^2;
- Windows - triple glazing: U= 0.6 W/m^2k

23 Community Centre
Ludesch – Austria
1.E. NEW: PUBLIC BUILDINGS

- Timber construction
- Fabric sunblinds
- Triple glazing
- Insulation from regenerable materials
- Use of regional silver
- Use of PVC;
- PV on the roof protecting the square (350 m^2)
- Local biomass construction to integrate heating
- Automatic ventilation
- Ground exchange system for cooling

24 Passive school
Laion-Novale (Bolzano) - Italy
1.C. NEW: SCHOOL

- Klimahaus Gold+ rating
- First passive school in Italy
- Ecological materials
- PV on the roof (16,000 KWh/y) produce more electricity than is required for this energy efficient house, three buildings profit from the surplus
- Mechanical ventilation + heat recovery
- 3 bores in the ground
- Solar collectors along the south face
- Under floor heating system
- EP_H = 9 KWh/m^2y

25 Design Office
Enschede - Netherlands
1.B. NEW: OFFICE

- Steel structure
- Roof: 14.5 cm of insulation
- Heat pump + 24 tubes sunk into the groundwater
- Under floor heating system
- 1 KW of electrical energy – 5 KW thermal energy
- Solar collectors
- Mechanical ventilation + heat recovery but also manually operable windows
- Windows - double glazing, U = 1.2 W/m^2k

26 Single Family House
Feldkirch - Austria
1.A. NEW: SINGLE HOUSE

- Prefabricated timber construction
- Unusual outer skin: the entire façade, with the exception of the windows, is clad with a matt-black fabric normally used in horticulture and is articulated by the pattern of rivets that mark the joint lines
- North-facing: largely closed
- South-west facing: opened
- Controlled ventilation system
- Earth collectors + heat pump
- PV on the roof, any excess energy is fed into the public power supply system
- Wall: U = 0.12 W/m^{2}K (34+ 5 cm insulation)
- Windows - triple glazing, U = 0.8 W/m^{2}k

27 House
Hegenlohe - Germany
1.A. NEW: SINGLE HOUSE

- Small S/V = 0.58
- Traditional double-pitched roof imposed by local authority
- Solid mass of the concrete wall functions as a thermal storage volume
- 66 PV modules on the south-west roof's facing (120 m^2), the electricity generated is fed into the public grid, but the installation meets the electrical needs of the house formally
- Two 99-metres bores in the earth
- Wall: U= 0.21 W/m^{2}k (8+8 cm of insulation);
- Roof: U= 0.14 W/m^{2}k (5+20 cm of insulation)
- Windows: U= 1.1 W/m^{2}k
- EP_H = 40 KWh/m^{2}y

28 Scuout's Hotel
Ludesch - Austria
1.E. NEW: PUBLIC BUILDINGS

- Timber construction
- Solar collectors along the south facade
- Strategies: solar collectors + solid structural elements
- No insulated outer wall and no controlled ventilation system;
- North glazing face, U = 0.73 w/m^{2}K
- South double glazing face, U = 1.1 w/m^{2}K

29 Workshop for Disabled People
Lindenberg - Germany
1.E. NEW: PUBLIC BUILDINGS

- Timber construction
- South face: double glazing
- North – east – west faces: triple glazing
- Fixed sun shading with PV
- Green roof
- Special light “stacks” deflect diffuse daylight into the workshop on the lower floor
- Groundwater is fed through pipes in the floor screeds
- Wood –pellets boilers
- Mechanical ventilation + heat recovery
- Heating ceiling

30 Information, Communication and Media Center
Cottbus - Germany
1.E. NEW: PUBLIC BUILDINGS

- Double skin façade: external single glass + internal double glass
- Curtain wall façade: 8 mm toughened glass 1x1m, white screen-printed (40%), with open joints
- Roof with gravel + 20 cm of insulation
- heat pump + 4 areas with geothermal bores
- Cogenerating unit
- 2 gas-fired combined heat-and-power units provide heating energy
- Wall: U= 0.34 W/m^2k
- Roof: U= 0.2 – 0.3 W/m^2k
- Ground floor: U= 0.37 W/m^2k
- Windows: U= 1.46 W/m^2k
- Regenerable energy for heating: 35%
- Regenerable energy for cooling: 58%
- Heating + cooling : 33.79 KWh/m^2y

31 Attic Renovation
Munich - Germany
2.A. REF: SINGLE HOUSE

- Attic of a nineteenth-century apartment building protected under historic-preservation ordinances that was remodelled and linked to a new apartment by a single flight of stairs
- Insulated the entire roof (15 cm mineral wool)
- Special windows on the roof (double glazing - U = 1.5 W/m^2k)
- New larch-wood floor installed between existent beams
- Wall integrated heating elements

32 House at a Lake
Kaufbeuren - Germany
2.A. REF: SINGLE HOUSE

- Housed separate units arranged linearly of 1960's transformed in a spacious residence for one family
- The existing building is a reinforced concrete cross wall construction
- Skylight extends along the entire length of the house and provides daylight to the internal hall zone
- Wall: 14 cm of insulation
- Roof: 18 cm of insulation
- Ground floor: 20 cm of insulation
- 5 water-tanks for thermal- mass storage;
- Heat-pipes integrated in the floors and ceiling
- PV on the south roof's facing (120 m^2) produce more electricity than is required for this energy efficient house, the municipal system profits from the surplus
- Thermal collectors (40 m^2)

33 Apartment House
London - Engeland
2.D. REF: HOUSING

- "Isokon - flats" (1934), social and architectural experiment, aiming to make a modern, urban way of life possible, occupants were artists or writers
- Concrete renovate
- Partition walls equipped with acoustic cladding
- Ceiling soffits fitted with mineral wool insulation and acoustic panel
- Single glazing ⟹ double glazing
- Wall: U= 1.7 ⟹ 1.35 W/m^2k
- Roof: U= 2.3 ⟹ 0.5 W/m^2k

34 Overhaul of Residential Complex
Heumatt - Zurich - Switzerland
2.D. REF: HOUSING

- + exterior insulation + corrugated aluminium
- In the upper reaches of the tower the balconies were enclosed with sliding-folding windows and serve as conservatory or as enlarged living room
- Wall (14 cm of insulation)
- Green roof (12 cm of insulation)
- The flat were equipped with controlled ventilation

35 Remodelling of a Senior centre
Magdeburg -Germany
2.E. REF: PUBLIC BUILDINGS

- Redesigned nursing home built in the 1970s
- Prefabricated module construction
- Green roof (8-16 cm of insulation)
- + thermal composite system at exterior walls (different amounts of insulation depending upon the respective existing assemblies)
- EP_H: 127 → 85 KWh/m^2y

36 Retirement home
Landeck - Austria
2.E. REF: PUBLIC BUILDINGS

- Terraced structure of 1976
- Existing concrete's thermal mass + new wood construction
- + 25 cm of insulation on the ventilated roof
- + 23 cm of insulation on the walls
- New glazing wall: laminated glass + wood window with double glazing

37 Hotel and Tourism Institute
Montreal - Canada
2.B. REF: OFFICE

- Built in 1970 (subway station in the ground floor + 4-storey podium + 7-storey tower)
- + thermal insulation on the existing façade
- + second skin of glass over the original one (the glass elements have varying colours and size, as well as by the different functions it houses)
- In winter the air within the double skin façade is warmed by solar energy and fed into the energy system on the services floor
- In summer, stale air is discharged, via the up-current of warm air, through openings in the façade at the parapet zone

38 Factory conversion
Rehau - Germany
2.B. REF: OFFICE

- 3 different buildings that formed porcelain factory (1920-1950) → a modern workspace for 150 employees
- + automated exterior sun protection and interior glare prevention
- + 16 cm of mineral wool on the roof
- + external insulation on facade

39 Wasgenring School
Basel - Switzerland
2.C. REF: SCHOOL

- 1960, 2004-2005
- North and south facades fully glazed
- Single glazing → double glazing;
- + louver blinds to the south side
- + elements made from aluminium sections with a thermal break on facade
- insulation of the plain east and west ends of each block was not implemented
- + 12 cm of insulation on the roof
- + modern control technology to optimise the natural ventilation
- + weather based control that permits night-time ventilation
- Wall: U= 1.33 → 1.33 W/m^2k
- Roof: U= 0.3 → 0.3 W/m^2k
- Windows: U= 2.8 → 1.3/1.4 W/m^2k
- EP_H: 162 → 131 KWh/m^2y

40 Terrace House
Zurich - Switzerland
2.D. REF: HOUSING

- 1966, 2005
- existing building: concrete structure + brickwork
- + internal insulation
- + 12 cm of insulation on the basement
- Roof: 8 cm of external insulation + 6 cm of internal insulation (with gravel)
- Installation of triple glazed windows
- + solar collectors + district heating installation
- Mechanical ventilation
- Heating/cooling pavement
- Wall: U= 1.2 → 0.4 W/m^2k
- Roof: U= 1.2 → 0.4 W/m^2k
- Windows: U= 3 → 0.8 W/m^2k
- EP_H: 150 → 80 KWh/m^2y

41 Office Buildng
Zurich - Switzerland
2.B. REF: OFFICE

- 1979, 2001
- The gap on the longitudinal façade were closed
- The shopping arcade at ground floor levels were eliminated
- The level of daylight was increased
- High-quality external insulation (12 cm) with weather protection in the form of sheet aluminium separated by an air cavity replaced the internal insulation
- New windows with triple glazing
- Roof with gravel + 16 cm of insulation
- All the installations have been renewed and are now situated in a compact new rooftop plant room
- + heating/cooling ceilings
- A level of illumination of 500 lux is available at every point
- Wall: U= 1.2 → 0.4 W/m^2k
- Roof: U= 1 → 0.3 W/m^2k
- Windows: U= 2.8 → 1.2 W/m^2k
- EP_H: 482 → 142 KWh/m^2y

42 Nursery School
Ulm - Germany
2.C. REF: SCHOOL

- 1965, 2005
- 4 buildings: nursery school, rectory, parish hall, church
- Eternity façade panels + light-weight mineral wood
- Raiators were renewed
- + a new ventilation system + heat recovery
- + decentralised solar energy system (65% of the heating requirement for the hot water provision)
- + triple glazing
- Wll: U= 1.6 → 0.25 W/m^{2}k
- Rof: U= 0.6 → 0.17 W/m^{2}k
- Wndows: U= 2.6 → 1.07 W/m^{2}k
- EP_H: 154 → 60 KWh/m^{2}y

43 Point-block
Ingolstad - Germany
2.D. REF: HOUSING

- 1968, 2003
- Inadequacies: high heat losses, cracks in the upper stories and subsequent saturation of the masonry, damage to the cantilevering concrete balconies, mould growth around thermal bridges
- All apartments remained occupied during the work
- + thermal insulation composite system (12 cm)
- + new windows + exterior roller shutters
- + balconies protected with sliding elements = South- facing conservatory
- + controlled extract system to the existing connection to the district heating system
- Wall: U= 1.2 → 0.3 W/m^{2}k
- Rroof: U= 1 → 0.2 W/m^{2}k
- Windows: U= 2.8 → 1.4 W/m^{2}k
- EP_H: 162 → 113 KWh/m^{2}y

44 Prefabricated panel block
Leinefeld - Germany
2.D. REF: HOUSING

- 1961, 2004
- 5/6 floors → 3/4 floors
- + thermal insulation composite system (wall +10 cm, roof +20 cm)
- Concrete walls and slabs of the old balconies → new steel balconies
- Existing connection to the district heating system;
- Wall: U= 1.2 → 0.3/0.5 W/m^{2}k
- Roof: U= 1 → 0.34 W/m^{2}k
- Windows: U= 2.8 → 1.3 W/m^{2}k
- EP_H: 194 → 107 KWh/m^{2}y

45 Semi-detached houses
Kriens – Switzerland
1.E. NEW: HOUSING 2001

- Bioclimatic design
- Timber superstructure prefabricated and plinth of reinforced concrete
- Ventilation linked to a heat recovery
- Heat pipe pre-warming the outside air
- U wall: 0.1 W/m^{2}K
- U windows: 0.94 W/m^{2}K
- EP_H: 23.6 kWh/m^{2}y

46 Multi-family house
Munich - Germany
1.E. NEW: HOUSING 2001

- Bioclimatic design
- Design for wheelchair access
- Concrete skeleton structure
- Steel balconies suspended from walkways
- Rooms equipped with door-height tube radiators
- 52 m^2 of collectors above balconies
- Installation for rainwater collection (for lavatories and irrigation)
- Floor ventilation ducts for garages
- U wall: 0.24 W/m^{2}K
- U windows: 1.1 W/m^{2}K
- EP_H: 46.5-49.9 kWh/m^{2}y

47 Office and residential building
Munich - Germany
1.B. NEW: OFFICE 2004

- Bioclimatic design
- First project which employ vacuum insulating panels
- CHPP (natural gas-operated Combined Heating and Power Plant)
- Windows with triple-glazed
- Ventilation system with heat recovery
- Future plans for photovoltaic system
- Use of groundwater for cooling
- U wall: 0.13 W/m^{2}K
- U windows: 0.7 W/m^{2}K
- EP_H: 20 kWh/m^{2}y

48 Office and residential building
Wiesbaden - Germany
1.E. NEW: HOUSING 2002

- Bioclimatic design
- Façade prefabricated
- Steel balconies suspended from the roof
- Enclosed by high fire-proof walls
- Windows only on east and west side
- Car elevators
- Regulated ventilation with heat-recovery. The air supplied to the offices is pre-warmed in a geothermal heat exchanger
- Solar installation for warm water
- U wall: 0.21 W/m^{2}K
- U windows: 0.8 W/m^{2}K
- EP_H: 17.8 kWh/m^{2}y

49 Residential building
Madrid - Spain
1.E. NEW: HOUSING 2004

- Social housing project
- Bioclimatic design
- Parking underground with natural light
- Shading and natural ventilation in summer
- Collectors and gas-operated boiler for warm-water (70% of the total warm water)
- Heating provided by a central gas boiler, radiators for distribution, system computer-monitored
- U wall: 0.43/0.58/0.77 W/m^{2}K
- U windows: 2.18 W/m^{2}K
- EP_H: 62.5 kWh/m^{2}y

50 Student residence
Wuppertal - Germany
1.E. NEW: HOUSING 2000/2003

- Bioclimatic design
- Low energy house / passive house standard
- Certified passive windows
- Airtight joints
- Controlled ventilation
- Monitoring process for 3 years by university
- U windows: 1.56/0.82 W/m^{2}K
- EP_H: 68.1/15 kWh/m^{2}y

51 Office and residential building
Sursee - Switzerland
1.B. NEW: OFFICE 2002

- Prefabricated wood construction
- Total construction time: 8 months
- Façade designed with wood cladding
- Protection from sound (façade solution with 2 gypsum board panels)
- Attention for materials used
- Heat recovery
- Heat pumps for heating energy requirement and to provide hot water
- Floor heating
- U wall: 0.18 W/m^{2}K
- U windows: 1.25 W/m^{2}K
- EP_H: 24.4 kWh/m^{2}y

52 Office complex
Duisburg - Germany
1.B. NEW: OFFICE 2002

- Bioclimatic design
- South side: solar façade with panels with glass and honeycomb insulation
- North side: closed and impassive with few “green windows”
- Minimum use of plastics
- Innovative ventilation system: displacement ventilation and building components cooling supplemented by individually operable windows
- Cooling provided by: 1) Night-time ventilation; 2) Water drawn from the harbour; 3) Adsorption chillers
- Rapeseed oil used for the combined power and heat plant and peak load boilers
- Photovoltaic system
- Collection of roof water for toilet flushing
- U wall: 0.33/0.05/0.24 W/m^{2}K
- U windows: 1.1 W/m^{2}K
- EP_H: 9 kWh/m^{2}y

53 Office building
Munich - Germany
1.B. NEW: OFFICE 2003

- Bioclimatic design
- Double-skin façade for sound protection and ventilation
- Top hung-sash windows
- Façade-cleaning robot
- Natural night-time cooling
- Combined heat and power plant for heating and cooling (with a chillers)
- 12-cylinder spark-ignition gas engine
- Sprinkler thanks
- 1:1 mock-up of an office room for experimentation
- U windows: 1.2 W/m^{2}K
- EP_H: 12.10 kWh/m^{2}y

54 Office complex
Wiesbaden - Germany
1.B. NEW: OFFICE 2003

- Bioclimatic design
- Wooden façade with ventilation flaps for natural ventilation
- Light-deflecting element on the north south façade
- Ceiling and floor slabs thermally activated as storage masses
- Individual controls in the office areas activated when needed (for ventilation and light)
- Rainwater is collected and used for irrigation of roof areas
- U wall: 0.2 W/m^{2}K
- U windows: 0.7 W/m^{2}K

55 Parliamentary building
London - England
1.B. NEW: OFFICE 2000

- Ceiling in prefabricated concrete
- Triple glazed windows
- Dark tinted blinds
- Air suctioned in, pre-warmed in rotating heat exchangers and distributed from the inner side of the façade
- Groundwater for cooling is then utilized as gray water for toilet flushing
- U wall: 0.27 W/m^{2}K
- U windows: 1.15 W/m^{2}K
- EP_H: 90 kWh/m^{2}y

56 Office and workshops
Weidling - Germany
1.B. NEW: OFFICE 2003

- Concrete storage wall core
- Timber constructions on the south
- Triple-insulation glazing
- All functions linked to shading and solar energy gains
- Waste water clarified in a biotope treatment plant
- Roof drainage collected
- Cooling with groundwater
- Heat recovery system
- Collectors on the roof
- U wall: 0.18 W/m^{2}K
- U windows: 0.7 W/m^{2}K
- EP_H: 19.4 kWh/m^{2}y

57 Commercial building
Steyr - Austria
1.E. NEW: PUBLIC BUILDINGS 2002

- Prefabricated wood construction
- Triple glazing section of 200 x 400 cm
- Polycarbonate as building skin
- Tower in polycarbonate panels with photovoltaic cells
- Geothermal collector of PE (pipes with heat exchanger)
- Photovoltaic system
- Ventilation system with high efficiency heat exchanger
- Biomass supplementary heating system fired with wood pallets
- Rainwater collecting system
- Solar warm water generation system
- U wall: 0.12 W/m^{2}K
- U windows: 0.82 W/m^{2}K
- EP_H: 14 kWh/m^{2}y

58 School complex
Pichling - Austria
1.C. NEW: SCHOOL 2003

- Attention to colours and materials
- Suspended shading louvers
- Optimized and well distributed light
- Ventilation system with heat recovery and geothermal heat exchanger
- Economic, continuous night-time ventilation in summer
- Solar collectors (20m^2)
- U wall: 0.17/0.19 W/m^{2}K
- U windows: 1.1 W/m^{2}K
- EP_H: 34.8 kWh/m^{2}y

59 School
Aufkirchen - Germany
1.C. NEW: SCHOOL 2004

- Bioclimatic design
- Combination of reinforced concrete and wood
- Skylights on the roof
- Controlled ventilation with heat recovery
- U wall: 0.18 W/m^{2}K
- U windows: 0.7 W/m^{2}K
- EP_H: 13.5 kWh/m^{2}y

60 Comprehensive school
Gelsenkirchen - Germany
1.C. NEW: SCHOOL 2004

- Idea of miniature city
- Excellent daylight quality
- Ventilation tower
- Radiant ceiling panels
- Geothermal tunnel to pre-warm or cool outside air
- Exhaust shaft for natural ventilation
- Skylights on the roof
- U wall: 0.33 W/m^{2}K
- U windows: 0.23 W/m^{2}K