IEA SHC Task 40 – ECBCS Annex 52

Subtask C - Advanced building design and engineering

SOLUTION SETS

NZEB SOLUTION SETS - Tobias Weiss

NZEB SOLUTION SETS

PASSIVE DESIGN SOLUTION | RENEWABLES | EFFICIENCY / CONSERVATIO

PASSIVE DESIGN SOLUTIONS

Country	Name of Building	Residential / Non Residential	Heating Dominated / Cooling Dominated	Advanced Thermal Insulation	Advanced Daylighting Measures	Maximization of Passive Solar Heat Gain	Sunshading - Moveable Elements	Sunshading - Fixed Elements	Thermal Mass - Heavy Weight Constr.	Phase Change Materials	Double Skin Facade	Natural Cross Ventilation	Evaporative Cooling	Night Cooling	Earth Tube Heat Exchanger	Heat-Buffer Rooms	Thermal zoning of Interior	Thermal Chimney
Australia	Pixel	Non residential	Cooling Dominated		x	x	x							x				
Austria	AEE INTEC Office Gleisdorf	Non residential	Heating Dominated	x		x			x			x		x	x	x	x	
	Alpine Refuge (Schiestlhaus)			x		x									x	x	x	
	Energy Settlement WEIZ	Residential	Heating Dominated	x		x		x	x						x	x	x	
	Energy Hotel Vienna			x														
Canada	Mtl	Non Residential	Heating Dominated															
	Ecoterra	Residential	Heating Dominated															
	Riverdola																	
	Minto																	
France	Limeil-Brévannes School	Non Residential	Cooling Dominated	x			x											
	Green-Office Building Meudon Paris			x				x						x				
	Enerpos							x				x						
	Elithis tower				x	x		x			x							
	Amplia, Lyon Confluance	Residential	Heating Dominated															
Italy	Naturalia Bau	Non Residential	Cooling Dominated	x														
	School in Lajon			x		x		x										
	Emergency Hospital Sudan							x										
	Polins			x	x			x										
	Leaf house	Residential	Heating Dominated	x											x			
	Cherasco passive house																	
Portugal	Solar XXI	Non Residential	Cooling Dominated		x	x	x					x			x			
	MSF Natura Towers																	
NZ	Little Greenie	Residential	Heating Dominated															
UK	Scottish Natural Heritage Headquarter	Non Residential	Cooling Dominated															
	Zero-carbon mass custom home	Residential	Heating Dominated	x														
	Lighthouse			x	x													
	Bed Zed																	
Germany	Factory « Solvis »; Braunschweig	Non Residential	Cooling Dominated															
	Office « Solon SE »;Berlin																	
	Plus Energy Settlement Freiburg	Residential	Heating Dominated															
	Kleehäuser; Freiburg																	
	R128 Stuttgart																	
	Blaue Heimat, Heidelberg																	
	Haus der Zukunft, Regensburg																	
USA	NREL's Research Support Facility	Non Residential	Cooling Dominated		x		x		x			x	x					
	Leopold ALDO				x							x						x
	Energy Lab Hawaï Gateway																	
Denmark	Bolig +	Residential	Heating Dominated	x								x						
	Active house																	
	Energy Flexhouse																	
Spain	Acciona	Non Residential	Cooling Dominated															
	Arfrisol																	
Sum of Solutions		Residential	Heating Dominated															
Sum of Solutions		Non residential	Cooling Dominated															
Sum of Solutions				13	7	7	4	7	3	0	1	6	1	3	5	3	3	1

RENEWABLES

Name of Building	PV roof integrated	PV facade integrated	PV on site	Windpower	Wooden Pellet Boiler	Biogas / BiofuelCHP	Air to Air Heat Pump	Geothermal Heat Pump	Ground Water Heat Pump	Solar Thermal Domestic Hot Water	Solar Thermal Space Heating	Solar Thermal Chiller	Gas fired absorption heat pump chiller	Renewable Electricity Off Site (Grid)	Renewable Heat Off Site (Grid)
Pixel	x			x										x	
AEE INTEC Office Gleisdorf	x				x					x	x			x	x
Alpine Refuge (Schiestlhaus)		x				x		x		x	x				
Energy Settlement WEIZ	x						x								
Energy Hotel Vienna	x	x		x		x		x		x	x				
Mtl															
Ecoterra															
Riverdola															
Minto															
Limeil-Brévannes School	x	x				x				x					
Green-Office Building Meudon Paris	x	x													
Enerpos	x				x										
Elithis tower	x														
Amplia, Lyon Confluance															
Naturalia Bau	x							x							
School in Lajon	x							x		x					
Emergency Hospital Sudan										x		x			
Polins	x							x							
Leaf house	x							x		x					
Cherasco passive house															
Solar XXI		x													
MSF Natura Towers															
Little Greenie															
Scottish Natural Heritage Headquarter															
Zero-carbon mass custom home	x						x								
Lighthouse	x				x					x					
Bed Zed															
Factory « Solvis »; Braunschweig															
Office « Solon SE »;Berlin															
Plus Energy Settlement Freiburg															
Kleehäuser; Freiburg															
R128 Stuttgart															
Blaue Heimat, Heidelberg															
Haus der Zukunft, Regensburg															
NREL's Research Support Facility	x				x									x	
Leopold ALDO	x							x	x						
Energy Lab Hawaï Gateway															
Bolig +	x	x								x					
Active house															
Energy Flexhouse															
Acciona															
Arfrisol															
Sum of Solutions	17	6	0	2	4	3	2	7	1	9	3	1	0	3	1

EFFICIENCY / CONSERVATION

Name of Building	Heat Recovery	Thermal Storage	Electricity Storage (Battery)	Integrated Monitoring	Energy / Load Management	Efficient Household Appliances	Efficient Office Equipment	Efficient HVAC Equipment	Occupant Information System	Water Conservation Measures	Hot Water Heat Recovery	Mechanical Ventilation	LED Lightning	Vacuum Toilet Technology	Rainwater Recycling	Water Cooled / Heated Building Structure	Low Embodied Energy	Eff .Disassembling & Recyling of Building Materialas	Solar Working Shuttles (Battery)	Green Roof / Facade	Air Threatment (Sand)
Pixel	x			x			x	x		x					x	x	x	x		x	
AEE INTEC Office Gleisdorf		x												x			x	x			
Alpine Refuge (Schiestlhaus)	x	x	x		x	x		x		x		x		x	x		x	x			
Energy Settlement WEIZ	x	x										x					x	x			
Energy Hotel Vienna	x	x			x	x		x		x		x	x	x	x					x	
Mtl																					
Ecoterra																					
Riverdola																					
Minto																					
Limeil-Brévannes School		x										x				x				x	
Green-Office Building Meudon Paris							x	x	x												
Enerpos				x																	
Elithis tower				x	x		x	x	x												
Amplia, Lyon Confluance																					
Naturalia Bau	x											x				x	x			x	
School in Lajon		x														x					
Emergency Hospital Sudan																					x
Polins																	x				
Leaf house	x							x	x			x	x		x						
Cherasco passive house																					
Solar XXI																					
MSF Natura Towers																					
Little Greenie																					
Scottish Natural Heritage Headquarter																					
Zero-carbon mass custom home	x					x						x									
Lighthouse	x	x				x				x		x	x		x		x	x			
Bed Zed																					
Factory « Solvis »; Braunschweig																					
Office « Solon SE »;Berlin																					
Plus Energy Settlement Freiburg																					
Kleehäuser; Freiburg																					
R128 Stuttgart																					
Blaue Heimat, Heidelberg																					
Haus der Zukunft, Regensburg																					
NREL's Research Support Facility								x													
Leopold ALDO																	x				
Energy Lab Hawaï Gateway																					
Bolig +		x										x				x					
Active house																					
Energy Flexhouse																					
Acciona																					
Arfrisol																					
Sum of Solutions	8	8	1	3	3	4	3	7	3	4	0	9	3	3	5	5	8	5	0	4	1