


 European Cooperation in the field of Scientific and Technical Research
www.cost.esf.org **Building Integration of Solar Thermal Systems – TU1205 – BISTS**

Taxonomy of Integrated Solar Energy Systems for BISTS

3rd WG Meeting, Corsica
March 27th & 28th 2014


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 European Cooperation in the field of Scientific and Technical Research
www.cost.esf.org **Building Integration of Solar Thermal Systems – TU1205 – BISTS**

Scope of Systems

- Solar Thermal, Solar PV and combined systems
- Heating and cooling Air, Water, and generating Electricity
- Applied to Building envelopes such as walls, roofs, and ground space etc.
- New build and retrofit to existing buildings
- New Innovations, designs and applications
- Passive and Active Systems

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Building Integration of Solar Thermal Systems – TU1205 – BISTS

APPROACH

- PRODUCT DESIGN
- APPLICATIONS AND NEEDS
- TIME OF USE
- INTEGRATED TO BUILDINGS
- LIGHT, AIR, WATER, ELECTRICITY,
- CONDUCTION, CONVECTION, RADIATION,
- HEATING, COOLING,
- SMART MATERIALS




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		Building Integration of Solar Thermal Systems – TU1205 – BISTS									
		Installed on									
				Wall		Roof		Other			
				New	Refurbishment	New	Refurbishment	New	Refurbishment		
Output	Air	Air heating	Active	Barra-Costantini system (Barra and Constantini, 1975)	Trombe wall air heater schematic for retrofit	RSC	Transparent overcladding to form an air heating solar collector (Lu and Norton, 1998)	N/A	N/A		
			Passive								
		Space heating	Active		External TIM	Integrated BIST roof material	Retrofitted collector panels	Yard mounted collectors	Space heating		
			Passive	TAP Low heat-loss glazings					Doma solar		
	Water	Combi systems	Active	Façade Collectors Asymmetric wall-mounted concentrators (Adesen)	Refurbished hybrid system	BIST roofing material (shingles/tiles) with hybrid photovoltaic/thermal technology	Hybrid roof PV/thermal system	Free standing canopies structure supporting collector/panels (bio-texture)	Centrifugal shades featuring thermally copper collectors glazed with tempered glass (Bio-texture)		
			Passive								
		Water heating	Active	BIST water heating façade panels	Retrofit water heating wall panels	Water heating unit integrated on flat or inclined roofing	Evacuated tube collectors retrofitted on original roofing	Standalone hybrid panels	Balcony mounted panel panel		
			Passive								
		Cooling	Active	Trombe wall for cooling		Building integrated solar thermal material prior to roof installation for night roofing (Sol-ice)	Night cooler roofing system to reduce cooling load on building during the night (Solawall)	N/A	N/A		
			Passive								
	Other	Other	Active	Integrated poultry drying panels	Poultry ventilation system (Solarwall)	Roof integrated PV/T	Photovoltaic panelled garage future concept electric car charging	Lumber drying process BIST integrated container panel (Solarwall)	Lean to solar thermal panels, made by DIT final year student		
			Passive								
	Electricity	PV/T	Active	Photovoltaic window paints	Photovoltaic window shades	Transparent roofing Photovoltaic underlayer	Retrofitting photovoltaic panels to original structure	Snow management (Sol-ice)	Photovoltaic Awnings		
			Passive								



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Definitions

- RSC: Roof space collector
 - TIM: Transparent insulation material
 - IPSWM: Integral passive solar water heating
 - PV/T Photovoltaic thermal
-
- **Factors not included in this table**
 - Concentrating, non-concentrating
 - Colour, texture, aesthetics, dimensional limits, weight, weather proofing, structural integrity
 - Integration; Additional, Re-purposed, integral climatic suitability, application context (heating, cooling, both)
 - Product certification, regulatory compliance
 - Life cycle analysis/costing



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**Example of water heating
system used on flat roof,
pitched roof or ground**



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Building Integration of Solar Thermal Systems – TU1205 – BISTS




			Installed on ...						
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			New	Refurbishment	New	Refurbishment	New	Refurbishment	
Output	Air	Air heating	Active	Barra-Costantini system (Barra and Costantini, 1979)	Trombe wall air heater schematic for retrofit	RSC	Transparent overcladding to form an air heating solar collector (Lo and Norton, 1996)	N/A	N/A
			Passive						
	Space heating		Active	TAP Low-heat-loss glazings	External TIM	Integrated BIST roof material	Retrofitted collector panels	Yard mounted collectors	Space heating Doma solar
			Passive						
	Water	Combinisystems	Active	Façade Collectors Asymmetric wall-mounted concentrators (Adesem)	Refurbished hybrid system	BIST roofing material (shingles/tiles) with hybrid photovoltaic/thermal technology	Hybrid roof PV/thermal system	Free standing canopies structure supporting collectors/panels (bio-texture)	Cantilevered shades featuring thermally copper collectors glazed with tempered glass (Bio-texture)
			Passive						
		Water heating	Active	BIST water heating façade panels	Retrofit water heating wall panels	Water heat integrated on inclined plane	Hybrid tube retrofitted on existing	Standalone hybrid panels	Balcony mounted panel panel
			Passive						
	Cooling		Active	Trombe wall for cooling		Building integrated solar thermal material prior to roof installation for night cooling (Sol-ice)	Nightsolar cooling system to reduce cooling load on building during the night (Solarwall)	N/A	N/A
			Passive						
	Other	Other	Active	Integrated poultry drying panels	Poultry ventilation system (Solarwall)	Roof integrated PV/T	Photovoltaic panelled garage future concept electric car charging	Lumber drying process BIST integrated container panel (Solarwall)	Lean to solar thermal panels, made by DIT final year student
			Passive						
Electricity	PV/T		Active	Photovoltaic windowpanels	Photovoltaic window shades	Transparent roofing Photovoltaic underlayer	Retrofitting photovoltaic panels to original structure	Snow management (Sol-ice)	Photovoltaic Awnings




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'SolTech' solution from the Swedish energy company implements glass tiles on top of highly efficient, mono crystalline solar panels to generate electricity.






Installation at Malmsjö elementary school



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Building Integration of Solar Thermal Systems – TU1205 – BISTS




Installed on

		Wall		Roof		Other		
		New	Refurbishment	New	Refurbishment	New	Refurbishment	
Output	Air	Air heating	Active Barra-Colantoni system (Barra and Colantoni, 1978)	Passive Trombe wall air heater schematic for retrofit	RSC	Transparent overcladding to form an air heating solar collector (Lis and Norton, 1998)	N/A	N/A
		Space heating	Active TAP	Passive Low heat-loss glazings	External TIM	Integrated BIST roof material	Retrofitted collector panels	Yard mounted collectors
	Water	Combi systems	Active Façade Collectors Asymmetric wall-mounted concentrators (Adesen)	Passive Refurbished hybrid system	BIST roofing material (shingles/tiles) with hybrid photovoltaic thermal technology	Hybrid roof PV/thermal system	Free standing canopies structure supporting collector panels (bio-texture)	Centrifugal shades featuring thermal film copper collectors glazed with tempered glass (Bio-texture)
		Water heating	Active BIST water heating façade panels	Passive Retrofit water heating wall panels	Water heating unit integrated on flat or inclined roofing	Evacuated tube reflectors retrofitted on original roofing	Standalone hybrid panels	Balcony mounted panel panel
		Cooling	Active Trombe wall for cooling	Passive Building integrated solar thermal material prior to roof installation for night roofing (Sol-ice)	Night time cooling system to reduce cooling load on building during the night (Sol-ice)	N/A	N/A	N/A
			Other	Active Integrated poultry drying panels	Passive Poultry ventilation system (Solarwall)	Roof integrated PV/IT	Photovoltaic panels (active full electric car charging)	Lumber drying process BIST integrated container panel (Solarwall)
	Electricity	PV/IT	Active Photovoltaic windowpanes	Photovoltaic window shades	Transparent Photovoltaic	Photovoltaic panels to original structure	Snow management (Sol-ice)	Photovoltaic Awnings



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‘Solex’ Roofing - Solar heating without the panels

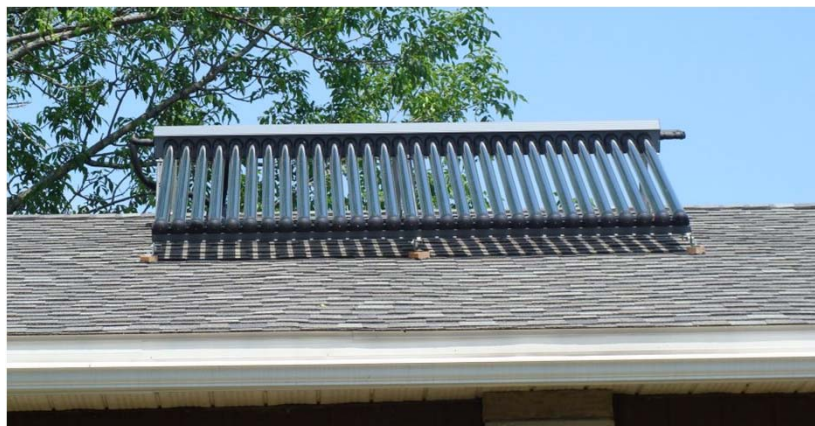


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Array of evacuated tubes, placed to get the most of the sun hitting the garage roof.



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			New	Refurbishment	New	Refurbishment	New	Refurbishment	
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			Passive						
	Space heating		Active	TAP	External TIM	Integrated BIST roof material	Retrofitted collector panels	Yard mounted collectors	Space heating Domsa solar
			Passive	Low-heat-loss glazings					
	Water	Combinisystems	Active	Façade Collectors Asymmetric wall-mounted concentrators (Adesem)	Refurbished hybrid system	BIST roofing material (shingles/tiles) with hybrid photovoltaic/thermal technology	Hybrid roof PV/thermal system	Free standing canopies structure supporting collectors/panels (bio-texture)	Cantilevered shades featuring thermally copper collectors glazed with tempered glass (Bio-texture)
			Passive						
		Water heating	Active	BIST water heating façade panels	Retrofit water heating wall panels	Water heating unit integrated on flat or inclined roofing		Standalone hybrid panels	Balcony mounted panel panel
			Passive						
	Cooling		Active	Trombe wall for cooling		Building integrated solar thermal material prior to roof installation for night cooling (Sol-ice)	Nightsolar cooling system to reduce cooling load on building during the night (Solarwall)	N/A	N/A
			Passive						
	Other	Other	Active	Integrated poultry drying panels	Poultry ventilation system (Solarwall)	Roof integrated PV/IT	Photovoltaic panelled garage future concept electric car charging	Lumber drying process BIST integrated container panel (Solarwall)	Lean to solar thermal panels, made by DIT final year student
			Passive						
	Electricity	PV/IT	Active	Photovoltaic window paints	Photovoltaic window shades	Transparent roofing Photovoltaic underlayer	Retrofitting photovoltaic panels to original structure	Snow management (Sol-ice)	Photovoltaic Awnings



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			Building Integration of Solar Thermal Systems – TU1205 – BISTS					
			SolarAir Heater					
			DIT student thesis					
								

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11/10/2012

Output

Water

Other

Electricity

Installed on ...

New

Refurbishment

New

Refurbishment

New

Refurbishment

Air heating

Active

Passive

Barra-Costantini system (Barra and Costantini, 1979)

Trombe wall air heater schematic for retrofit

RSC

Transparent overcladding to form an air heating solar collector (Lo and Norton, 1996)

N/A

N/A

Space heating

Active

Passive

TAP Low-heat-loss glazings

External TIM

Integrated BIST roof material

Retrofitted collector panels

Yard mounted collectors

Space heating Doma solar

Combinisystems

Active

Passive

Façade Collectors Asymmetric wall-mounted concentrators (Adesem)

Refurbished hybrid system

BIST roofing material (shingles/tiles) with hybrid photovoltaic/thermal technology

Hybrid roof PV/thermal system

Free standing canopies structure supporting collectors/panels (Bo-texture)

Cantilevered shades featuring thermally copper collectors glazed with tempered glass (Bo-texture)

Water heating

Active

Passive

BIST water heating façade panels

Retrofit water heating wall panels

Water heating unit integrated on flat or inclined roofing

Evacuated tube collectors retrofitted on original roofing

Standalone hybrid panels

Balcony mounted panel panel

Cooling

Active

Passive

Trombe wall for cooling

Building integrated solar thermal material prior to roof installation for night cooling (Sol-ice)

Nightsolar cooling system to reduce cooling load on building during the night (Solarwall)

N/A

N/A

Other

Active

Passive

Integrated poultry drying panels

Poultry ventilation system (Solarwall)

Roof integrated PV/T

Photovoltaic panelled garage future concept electric car charging

Lumber drying process BIST integrated container panel (Solarwall)

Low temperature thermal panel DIT final year student

Electricity

PV/T

Active

Photovoltaic window shades


Photovoltaic window shades

Transparent roofing Photovoltaic underlayer

Retrofitting photovoltaic panels to original structure


Snow management (Sol-ice)


Photovoltaic Awnings




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		Building Integration of Solar Thermal Systems – TU1205 – BISTS											
Facade Integrated Flat Plate Solar Thermal System													
													
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			Wall		Roof		Other		
			New	Refurbishment	New	Refurbishment	New	Refurbishment	
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			Passive						
		Space heating	Active	TAP	External TIM	Integrated BIST roof material	Retrofitted collector panels	Yard mounted collectors	Space heating Doma solar
			Passive	Low-heat-loss glazing					
	Water	Combinisystems	Active		Refurbished hybrid system	BIST roofing material (shingles/tiles) with hybrid photovoltaic/thermal technology	Hybrid roof PV/thermal system	Free standing canopies structure supporting collectors/panels (bio-texture)	Canververed shades featuring thermalfin copper collectors glazed with tempered glass (Bio-texture)
			Passive						
		Water heating	Active	BIST water heating façade panels	Retrofit water heating wall panels	Water heating unit integrated on flat or inclined roofing	Evacuated tube collectors retrofitted on original roofing	Standalone hybrid panels	Balcony mounted panel panel
			Passive						
		Cooling	Active	Trombe wall for cooling		Building integrated solar thermal material prior to roof installation for night cooling (Sol-ice)	Nightsolar cooling system to reduce cooling load on building during the night (Solawall)	N/A	N/A
			Passive						
	Other	Other	Active	Integrated poultry drying panels	Poultry ventilation system (Solarwall)	Roof integrated PV/T	Photovoltaic panelled garage future concept electric car charging	Lumber drying process BIST integrated container panel (Solarwall)	Lean to solar thermal panels, made by DIT final year student
			Passive						
	Electricity	PV/T	Active	Photovoltaic windowpanels	Photovoltaic window shades	Transparent roofing Photovoltaic underlayer	Retrofitting photovoltaic panels to original structure	Snow management (Sol-ice)	Photovoltaic Awnings
			Passive						



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	Air	Air heating	Active	Trombe wall air heater schematic for retrofit	RSC	Transparent overcladding to form an air heating solar collector (Lo and Norton, 1996)	N/A	N/A
			Passive					
		Space heating	Active	TAP	External TIM	Integrated BIST roof material	Retrofitted collector panels	Yard mounted collectors
			Passive	Low-heat-loss glazing				Space heating Doma solar
	Water	Combinisystems	Active	Façade Collectors Asymmetric wall-mounted concentrators (Adesan)	Refurbished hybrid system	BIST roofing material (shingles/tiles) with hybrid photovoltaic/thermal technology	Hybrid roof PV/thermal system	Free standing canopies structure supporting collectors/panels (bio-texture)
			Passive					Cantervered shades featuring thermalfin copper collectors glazed with tempered glass (Bio-texture)
		Water heating	Active	BIST water heating façade panels	Retrofit water heating wall panels	Water heating unit integrated on flat or inclined roofing	Evacuated tube collectors retrofitted on original roofing	Standalone hybrid panels
			Passive					Balcony mounted panel panel
		Cooling	Active	Trombe wall for cooling		Building integrated solar thermal material prior to roof installation for night cooling (Sol-ice)	Nightsolar cooling system to reduce cooling load on building during the night (Solawall)	N/A
			Passive					N/A
	Other	Other	Active	Integrated poultry drying panels	Poultry ventilation system (Solarwall)	Roof integrated PV/T	Photovoltaic panelled garage future concept electric car charging	Lumber drying process BIST integrated container panel (Solarwall)
	Electricity	PV/T	Active	Photovoltaic windowpanels	Photovoltaic window shades	Transparent roofing Photovoltaic underlayer	Retrofitting photovoltaic panels to original structure	Snow management (Sol-ice)
			Passive					Photovoltaic Awnings

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	Water	Combisystems	Active Passive	Façade Collectors Asymmetric wall-mounted concentrators (Adesen)	Refurbished hybrid system	BIST roofing material (shingles/tiles) with hybrid photovoltaic/thermal technology	Hybrid roof PV/thermal system
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		Cooling	Active Passive	Trombe wall for cooling		Building integrated solar thermal material prior to roof installation for night cooling (Sol-ice)	Nightsolar cooling system to reduce cooling load on building during the night (Solarwall)
		Other	Active Passive	Integrated poultry drying panels	Poultry ventilation system (Solarwall)	Roof integrated PV/T	Photovoltaic panelled garage future concept electric car charging (Solarwall)
	Electricity	PV/T	Active	Photovoltaic windowpanes	Photovoltaic window shades	Transparent roofing Photovoltaic underlayer	Retrofitting photovoltaic panels to original structure
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	Electricity	PV/T	Active	Photovoltaic windowpanes	Photovoltaic window shades	Transparent roofing Photovoltaic underlayer	Retrofitting photovoltaic panels to original structure
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		Water heating	Active	BIST water heating façade panels	Retrofit water heating wall panels	Water heating unit integrated on flat or inclined roofing	Standalone hybrid panels
			Passive				Balcony mounted panel panel
		Cooling	Active	Trombe wall for cooling		Building integrated solar thermal material prior to roof installation for night cooling (Sol-ice)	N/A
			Passive			Nightsolar cooling system to reduce cooling load on building during the night (Solawall)	N/A
	Other	Other	Active	Integrated poultry drying panels	Poultry ventilation system (Solarwall)	Roof integrated PV/T	Lumber drying process BIST integrated container panel (Solarwall)
	Electricity	PV/T	Passive	Photovoltaic windowpanels	Photovoltaic window shades	Transparent roofing Photovoltaic underlayer	Snow management (Sol-ice)
			Active				Photovoltaic Awnings

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Output				Installed on			
				Wall		Roof	
				New	Refurbishment	New	Other
	Air	Air heating	Active	Barra-Costantini system (Barra and Costantini, 1979)	Trombe wall air heater schematic for retrofit	RSC	Transparent overcladding to form an air heating solar collector (Lo and Norton, 1996)
			Passive				
		Space heating	Active	TAP	External TIM		Retrofitted collector panels
			Passive	Low heat-loss glazings			Yard mounted collectors
	Water	Combinisystems	Active	Façade Collectors Asymmetric wall-mounted concentrators (Adesan)	Refurbished hybrid system	BIST roofing material (shingles/tiles) with hybrid photovoltaic/thermal technology	Free standing canopies structure supporting collector/panels (bio-texture)
			Passive				Cantervered shades featuring thermalfin copper collectors glazed with tempered glass (Bio-texture)
		Water heating	Active	BIST water heating façade panels	Retrofit water heating wall panels	Water heating unit integrated on flat or inclined roofing	Standalone hybrid panels
			Passive				Balcony mounted panel panel
		Cooling	Active	Trombe wall for cooling		Building integrated solar thermal material prior to roof installation for night cooling (Sol-ice)	N/A
			Passive			Nightsolar cooling system to reduce cooling load on building during the night (Solawall)	N/A
	Other	Other	Active	Integrated poultry drying panels	Poultry ventilation system (Solarwall)	Roof integrated PV/T	Lumber drying process BIST integrated container panel (Solarwall)
	Electricity	PV/T	Passive	Photovoltaic windowpanels	Photovoltaic window shades	Transparent roofing Photovoltaic underlayer	Snow management (Sol-ice)
			Active				Photovoltaic Awnings


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		European Cooperation in the field of Scientific and Technical Research									
		Building Integration of Solar Thermal Systems – TU1205 – BISTS									
Output				Installed on							
				Wall		Roof		Other			
				New	Refurbishment	New	Refurbishment	New	Refurbishment		
Output	Air	Air heating	Active	Barra-Costantini system (Barra and Costantini, 1979)	Trombe wall air heater schematic for retrofit	RSC	Transparent overcladding to form an air heating solar collector (Lo and Norton, 1996)	N/A	N/A		
			Passive								
	Air	Space heating	Active	TAP	External TIM	Integrated BIST roof material		Yard mounted collectors	Space heating Doma solar		
			Passive	Low-heat-loss glazings							
	Water	Combinisystems	Active	Façade Collectors Asymmetric wall-mounted concentrators (Adesan)	Refurbished hybrid system	BIST roofing material (shingles/tiles) with hybrid photovoltaic/thermal technology	Hybrid roof PV/thermal system	Free standing canopies structure supporting collectors/panels (bio-texture)	Cantervered shades featuring thermalfin copper collectors glazed with tempered glass (Bio-texture)		
			Passive								
		Water heating	Active	BIST water heating façade panels	Retrofit water heating wall panels	Water heating unit integrated on flat or inclined roofing	Evacuated tube collectors retrofitted on original roofing	Standalone hybrid panels	Balcony mounted panel panel		
			Passive								
	Cooling		Active	Trombe wall for cooling		Building integrated solar thermal material prior to roof installation for night cooling (Sol-ice)	Nightsolar cooling system to reduce cooling load on building during the night (Solarwall)	N/A	N/A		
			Passive								
	Other	Other	Active	Integrated poultry drying panels	Poultry ventilation system (Solarwall)	Roof integrated PV/T	Photovoltaic panelled garage future concept electric car charging	Lumber drying process BIST integrated container panel (Solarwall)	Lean to solar thermal panels, made by DIT final year student		
	Other	Other	Passive								
	Electricity	PV/T	Active	Photovoltaic windowpanels	Photovoltaic window shades	Transparent roofing Photovoltaic underlayer	Retrofitting photovoltaic panels to original structure	Snow management (Sol-ice)	Photovoltaic Awnings		


		European Cooperation in the field of Scientific and Technical Research									
		Building Integration of Solar Thermal Systems – TU1205 – BISTS									
Output				Installed on							
				Wall		Roof		Other			
				New	Refurbishment	New	Refurbishment	New	Refurbishment		
Output	Air	Air heating	Active	Barra-Costantini system (Barra and Costantini, 1979)	Trombe wall air heater schematic for retrofit	RSC	Transparent overcladding to form an air heating solar collector (Lo and Norton, 1996)	N/A	N/A		
			Passive								
	Air	Space heating	Active	TAP	External TIM	Integrated BIST roof material	Retrofitted collector panels		Space heating Doma solar		
			Passive	Low-heat-loss glazings							
	Water	Combinisystems	Active	Façade Collectors Asymmetric wall-mounted concentrators (Adesan)	Refurbished hybrid system	BIST roofing material (shingles/tiles) with hybrid photovoltaic/thermal technology	Hybrid roof PV/thermal system	Free standing canopies structure supporting collectors/panels (bio-texture)	Cantervered shades featuring thermalfin copper collectors glazed with tempered glass (Bio-texture)		
			Passive								
		Water heating	Active	BIST water heating façade panels	Retrofit water heating wall panels	Water heating unit integrated on flat or inclined roofing	Evacuated tube collectors retrofitted on original roofing	Standalone hybrid panels	Balcony mounted panel panel		
			Passive								
	Cooling		Active	Trombe wall for cooling		Building integrated solar thermal material prior to roof installation for night cooling (Sol-ice)	Nightsolar cooling system to reduce cooling load on building during the night (Solarwall)	N/A	N/A		
			Passive								
	Other	Other	Active	Integrated poultry drying panels	Poultry ventilation system (Solarwall)	Roof integrated PV/T	Photovoltaic panelled garage future concept electric car charging	Lumber drying process BIST integrated container panel (Solarwall)	Lean to solar thermal panels, made by DIT final year student		
	Other	Other	Passive								
	Electricity	PV/T	Active	Photovoltaic windowpanels	Photovoltaic window shades	Transparent roofing Photovoltaic underlayer	Retrofitting photovoltaic panels to original structure	Snow management (Sol-ice)	Photovoltaic Awnings		





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Installed on

Output				Installed on									
				Wall		Roof		Other					
				New	Refurbishment	New	Refurbishment	New	Refurbishment				
	Air	Air heating	Active	Barra-Costantini system (Barra and Costantini, 1979)	Trombe wall air heater schematic for retrofit	RSC	Transparent overcladding to form an air heating solar collector (Lo and Norton, 1996)	N/A	N/A				
			Passive										
	Space heating		Active	TAP	External TIM	Integrated BIST roof material	Retrofitted collector panels	Yard mounted collectors					
			Passive	Low-heat-loss glazings									
	Water	Combinisystems	Active	Façade Collectors Asymmetric wall-mounted concentrators (Adesem)	Refurbished hybrid system	BIST roofing material (shingles/tiles) with hybrid photovoltaic/thermal technology	Hybrid roof PV/thermal system	Free standing canopies structure supporting collectors/panels (bio-texture)	Canterleaved shades featuring thermafin copper collectors glazed with tempered glass (Bio-texture)				
			Passive										
		Water heating	Active	BIST water heating façade panels	Retrofit water heating wall panels	Water heating unit integrated on flat or inclined roofing	Evacuated tube collectors retrofitted on original roofing	Standalone hybrid panels	Balcony mounted panel panel				
			Passive										
		Cooling	Active	Trombe wall for cooling		Building integrated solar thermal material prior to roof installation for night cooling (Sol-ice)	Nightsolar cooling system to reduce cooling load on building during the night (Solarwall)	N/A	N/A				
			Passive										
	Other	Other	Active	Integrated poultry drying panels	Poultry ventilation system (Solarwall)	Roof integrated PV/T	Photovoltaic panelled garage future concept electric car charging	Lumber drying process BIST integrated container panel (Solarwall)	Lean to solar thermal panels, made by DIT final year student				
			Passive										
	Electricity	PV/T	Active	Photovoltaic windowpanels	Photovoltaic window shades	Transparent roofing Photovoltaic underlayer	Retrofitting photovoltaic panels to original structure	Snow management (Sol-ice)	Photovoltaic Awnings				



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			Installed on ...							
Output			Wall		Roof		Other			
			New	Refurbishment	New	Refurbishment	New	Refurbishment	New	Refurbishment
	Air	Air heating	Active	Barra-Costantini system (Barra and Costantini, 1979)	Trombe wall air heater schematic for retrofit	RSC	Transparent overcladding to form an air heating solar collector (Lo and Norton, 1996)	N/A	N/A	
			Passive							
	Space heating		Active	TAP	External TIM	Integrated BIST roof material	Retrofitted collector panels	Yard mounted collectors	Space heating Doma solar	
			Passive	Low-heat-loss glazings						
	Water	Combinisystems	Active		Refurbished hybrid system	BIST roofing material (shingles/tiles) with hybrid photovoltaic/thermal technology	Hybrid roof PV/thermal system	Free standing canopies structure supporting collectors/panels (bio-texture)	Canterleaved shades featuring thermafin copper collectors glazed with tempered glass (Bio-texture)	
			Passive							
		Water heating	Active	BIST water heating façade panels	Retrofit water heating wall panels	Water heating unit integrated on flat or inclined roofing	Evacuated tube collectors retrofitted on original roofing	Standalone hybrid panels	Balcony mounted panel panel	
			Passive							
	Cooling		Active	Trombe wall for cooling		Building integrated solar thermal material prior to roof installation for night cooling (Sol-ice)	Nightsolar cooling system to reduce cooling load on building during the night (Solawall)	N/A	N/A	
			Passive							
	Other	Other	Active	Integrated poultry drying panels	Poultry ventilation system (Solarwall)	Roof integrated PV/T	Photovoltaic panelled garage future concept electric car charging	Lumber drying process BIST integrated container panel (Solarwall)	Lean to solar thermal panels, made by DIT final year student	
			Passive							
	Electricity	PV/T	Active	Photovoltaic windowpanels	Photovoltaic window shades	Transparent roofing Photovoltaic underlayer	Retrofitting photovoltaic panels to original structure	Snow management (Sol-ice)	Photovoltaic Awnings	



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			Installed on						
			Wall		Roof		Other		
			New	Refurbishment	New	Refurbishment	New	Refurbishment	
Output	Air	Air heating	Active	Barra-Costantini system (Barra and Costantini, 1979)	Trombe wall air heater schematic for retrofit	RSC	Transparent overcladding to form an air heating solar collector (Lo and Norton, 1996)	N/A	N/A
		Passive							
		Space heating	Active	TAP	External TIM	Integrated BIST roof material	Retrofitted collector panels	Yard mounted collectors	Space heating Doma solar
		Passive	Low heat-loss glazings						
	Water	Combinisystems	Active	Façade Collectors Asymmetric wall-mounted concentrators (Adesan)		BIST roofing material (shingles/tiles) with hybrid photovoltaic/thermal technology	Hybrid roof PV/thermal system	Free standing canopies structure supporting collectors/panels (bio-texture)	Cantervered shades featuring thermalfin copper collectors glazed with tempered glass (Bio-texture)
		Passive							
		Water heating	Active	BIST water heating façade panels	Retrofit water heating wall panels	Water heating unit integrated on flat or inclined roofing	Evacuated tube collectors retrofitted on original roofing	Standalone hybrid panels	Balcony mounted panel panel
		Passive							
		Cooling	Active	Trombe wall for cooling		Building integrated solar thermal material prior to roof installation for night cooling (Sol-ice)	Nightsolar cooling system to reduce cooling load on building during the night (Solawall)	N/A	N/A
		Passive							
Other	Other	Active	Integrated poultry drying panels	Poultry ventilation system (Solarwall)	Roof integrated PV/T	Photovoltaic panelled garage future concept electric car charging	Lumber drying process BIST integrated container panel (Solarwall)	Lean to solar thermal panels, made by DIT final year student	
Passive									
Electricity	PV/T	Active	Photovoltaic windowpanels	Photovoltaic window shades	Transparent roofing Photovoltaic underlayer	Retrofitting photovoltaic panels to original structure	Snow management (Sol-ice)	Photovoltaic Awnings	
Passive									


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			Installed on						
			Wall		Roof		Other		
			New	Refurbishment	New	Refurbishment	New	Refurbishment	
Output	Air	Air heating	Active	Barra-Costantini system (Barra and Costantini, 1979)	Trombe wall air heater schematic for retrofit	RSC	Transparent overcladding to form an air heating solar collector (Lo and Norton, 1996)	N/A	N/A
		Passive							
		Space heating	Active	TAP	External TIM	Integrated BIST roof material	Retrofitted collector panels	Yard mounted collectors	Space heating Doma solar
		Passive	Low heat-loss glazings						
	Water	Combinisystems	Active	Façade Collectors Asymmetric wall-mounted concentrators (Adesan)	Refurbished hybrid system		Hybrid roof PV/thermal system	Free standing canopies structure supporting collectors/panels (bio-texture)	Cantervered shades featuring thermalfin copper collectors glazed with tempered glass (Bio-texture)
		Passive							
		Water heating	Active	BIST water heating façade panels	Retrofit water heating wall panels	Water heating unit integrated on flat or inclined roofing	Evacuated tube collectors retrofitted on original roofing	Standalone hybrid panels	Balcony mounted panel panel
		Passive							
		Cooling	Active	Trombe wall for cooling		Building integrated solar thermal material prior to roof installation for night cooling (Sol-ice)	Nightsolar cooling system to reduce cooling load on building during the night (Solawall)	N/A	N/A
		Passive							
Other	Other	Active	Integrated poultry drying panels	Poultry ventilation system (Solarwall)	Roof integrated PV/T	Photovoltaic panelled garage future concept electric car charging	Lumber drying process BIST integrated container panel (Solarwall)	Lean to solar thermal panels, made by DIT final year student	
Passive									
Electricity	PV/T	Active	Photovoltaic windowpanels	Photovoltaic window shades	Transparent roofing Photovoltaic underlayer	Retrofitting photovoltaic panels to original structure	Snow management (Sol-ice)	Photovoltaic Awnings	
Passive									

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				Installed on					
				Wall		Roof		Other	
				New	Refurbishment	New	Refurbishment	New	Refurbishment
Output	Air	Air heating	Active	Barra-Constantini system (Barra and Constantini, 1979)	Trombe wall air heater schematic for retrofit	RSC	Transparent overcladding to form an air heating solar collector (Lo and Norton, 1996)	N/A	N/A
			Passive						
	Space heating		Active	TAP	External TIM	Integrated BIST material	Retrofitted collector panels	Yard mounted collectors	Space heating Doma solar
			Passive	Low heat-loss glazings					
	Water	Combinisystems	Active	Façade Collectors Asymmetric wall-mounted concentrators (Adesan)	Refurbished hybrid system	BIST roofing material (shingles/tiles) with hybrid photovoltaic/thermal technology		Free standing canopies structure supporting collector/panels (bio-texture)	Canterleaved shades featuring thermafin copper collectors glazed with tempered glass (Bio-texture)
			Passive						
		Water heating	Active	BIST water heating façade panels	Retrofit water heating wall panels	Water heating unit integrated on flat or inclined roofing	Evacuated tube collectors retrofitted on original roofing	Standalone hybrid panels	Balcony mounted panel panel
			Passive						
	Cooling		Active	Trombe wall for cooling		Building integrated solar thermal material prior to roof installation for night cooling (Sol-ice)	Nightsolar cooling system to reduce cooling load on building during the night (Solarwall)	N/A	N/A
			Passive						
	Other	Other	Active	Integrated poultry drying panels	Poultry ventilation system (Solarwall)	Roof integrated PV/T	Photovoltaic panelled garage future concept electric car charging	Lumber drying process BIST integrated container panel (Solarwall)	Lean to solar thermal panels, made by DIT final year student
			Passive						
	Electricity	PV/T	Active	Photovoltaic windowpanels	Photovoltaic window shades	Transparent roofing Photovoltaic underlayer	Retrofitting photovoltaic panels to original structure	Snow management (Sol-ice)	Photovoltaic Awnings



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				Installed on									
				Wall		Roof		Other					
				New		Refurbishment		New		Refurbishment		New	
Output	Air	Air heating	Active	Barra-Costantini system (Barra and Costantini, 1979)	Trombe wall air heater schematic for retrofit	RSC	Transparent overcladding to form an air heating solar collector (Lo and Norton, 1996)	N/A	N/A				
			Passive										
	Space heating		Active	TAP	External TIM	Integrated BIST material	Retrofitted collector panels	Yard mounted collectors	Space heating Doma solar				
			Passive	Low heat-loss glazings									
	Water	Combinisystems	Active	Façade Collectors Asymmetric wall-mounted concentrators (Adesan)	Refurbished hybrid system	BIST roofing material (shingles/tiles) with hybrid photovoltaic/thermal technology	Hybrid roof PV/thermal system	Canterleaved shades featuring thermafin copper collectors glazed with tempered glass (Bio-texture)	Balcony mounted panel panel				
			Passive										
		Water heating	Active	BIST water heating façade panels	Retrofit water heating wall panels	Water heating unit integrated on flat or inclined roofing	Evacuated tube collectors retrofitted on original roofing	Standalone hybrid panels	Balcony mounted panel panel				
			Passive										
	Cooling		Active	Trombe wall for cooling		Building integrated solar thermal material prior to roof installation for night cooling (Sol-ice)	Nightsolar cooling system to reduce cooling load on building during the night (Solarwall)	N/A	N/A				
			Passive										
	Other	Other	Active	Integrated poultry drying panels	Poultry ventilation system (Solarwall)	Roof integrated PV/T	Photovoltaic panelled garage future concept electric car charging	Lumber drying process BIST integrated container panel (Solarwall)	Lean to solar thermal panels, made by DIT final year student				
	Electricity	PV/T	Active	Photovoltaic windowpanels	Photovoltaic window shades	Transparent roofing Photovoltaic underlayer	Retrofitting photovoltaic panels to original structure	Snow management (Sol-ice)	Photovoltaic Awnings				

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			Installed on					
			Wall		Roof		Other	
			New	Refurbishment	New	Refurbishment	New	Refurbishment
Output	Air	Air heating	Active	Barra-Costantini system (Barra and Costantini, 1979)	Trombe wall air heater schematic for retrofit	RSC	Transparent overglazing to form an air-heating solar collector (Domenico Norton, 1996)	N/A
			Passive					
	Space heating		Active	TAP	External TIM	Integrated BIST roof material	Retrofitted collector panels	Yard mounted collectors
			Passive	Low-heat-loss glazings				Doms solar
	Water	Combinisystems	Active	Façade Collectors Asymmetric wall-mounted concentrators (Adesem)	Refurbished hybrid system	BIST roofing material (shingles/tiles) with hybrid photovoltaic/thermal technology	Hybrid roof PV/thermal system	Free standing canopies structure supporting collectors/panels (bio-texture)
			Passive					
		Water heating	Active	BIST water heating façade panels	Retrofit water heating wall panels	Water heating unit integrated on flat or inclined roofing	Evacuated tube collectors retrofitted on original roofing	Standalone hybrid panels
			Passive					Balcony mounted panel panel
		Cooling	Active	Trombe wall for cooling		Building integrated solar thermal material prior to roof installation for night cooling (Sol-ice)	Nightsolar cooling system to reduce cooling load on building during the night (Solarwall)	N/A
			Passive					N/A
	Other	Other	Active	Integrated poultry drying panels	Poultry ventilation system (Solarwall)	Roof integrated PV/T	Photovoltaic panelled garage future concept electric car charging	Lumber drying process BIST integrated container panel (Solarwall)
			Passive					Lean to solar thermal panels, made by DIT final year student
	Electricity	PV/T	Active	Photovoltaic window paints	Photovoltaic window shades	Transparent roofing Photovoltaic underlayer	Retrofitting photovoltaic panels to original structure	Snow management (Sol-ice)
								Photovoltaic Awnings



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				Installed on ...					
				Wall		Roof		Other	
				New	Refurbishment	New	Refurbishment	New	Refurbishment
Output	Air	Air heating	Active	Barra-Constantini system (Barra and Constantini, 1978)	Trombe wall air heater schematic for retrofit	RSC	Transparent overcladding to form an air heating solar collector (Lo and Norton, 1996)	N/A	N/A
			Passive						
		Space heating	Active	TAP	External TIM	Integrated BIST roof material	Retrofitted collector panels	Yard mounted collectors	Space heating
			Passive	Low-heat-loss glazings					Doma solar
	Water	Combinisystems	Active	Façade Collectors	Refurbished hybrid system	BIST roofing material (shingles/tiles) with hybrid photovoltaic/thermal technology	Hybrid roof PV/thermal system	Free standing canopies structure supporting collector/panels (bio-texture)	Canververed shades featuring thermalfin copper collectors glazed with tempered glass (Bio-texture)
			Passive	Asymmetric wall-mounted concentrators (Adesan)					
		Water heating	Active		Retrofit water heating wall panels	Water heating unit integrated on flat or inclined roofing	Evacuated tube collectors retrofitted on original roofing	Standalone hybrid panels	Balcony mounted panel panel
			Passive						
		Cooling	Active	Trombe wall for cooling		Building integrated solar thermal material prior to roof installation for night cooling (Sol-ice)	Nightsolar cooling system to reduce cooling load on building during the night (Solawall)	N/A	N/A
			Passive						
	Other	Other	Active	Integrated poultry drying panels	Poultry ventilation system (Solarwall)	Roof integrated PV/T	Photovoltaic panelled garage future concept electric car charging	Lumber drying process BIST integrated container panel (Solarwall)	Lean to solar thermal panels, made by DIT final year student
			Passive						
	Electricity	PV/T	Active	Photovoltaic windowpanels	Photovoltaic window shades	Transparent roofing Photovoltaic underlayer	Retrofitting photovoltaic panels to original structure	Snow management (Sol-ice)	Photovoltaic Awnings



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		Installed on							
		Wall		Roof		Other			
		New	Refurbishment	New	Refurbishment	New	Refurbishment		
Output	Air	Air heating	Active	Barra-Constantini system (Barra and Constantini, 1979)	Trombe wall air heater schematic for retrofit	RSC	Transparent overcladding to form an air heating solar collector (Lo and Norton, 1996)	N/A	N/A
			Passive						
		Space heating	Active	TAP Low-heat-loss glazings	External TIM	Integrated BIST roof material	Retrofitted collector panels	Yard mounted collectors	Space heating Doma solar
			Passive						
	Water	Combinisystems	Active	Façade Collectors Asymmetric wall-mounted concentrators (Adesani)	Refurbished hybrid system	BIST roofing material (shingles/tiles) with photovoltaic thermal technology	Hybrid roof PV/thermal system	Free standing canopies structure supporting collectors/panels (bio-texture)	Canilevered shades featuring thermally copper collectors glazed with tempered glass (Bio-texture)
			Passive						
		Water heating	Active	BIST water heating façade panels	Retrofit water heating wall panels		Evacuated tube collectors retrofitted on original roofing	Standalone hybrid panels	Balcony mounted panel panel
			Passive						
		Cooling	Active	Trombe wall for cooling		Building integrated solar thermal material prior to roof installation for night cooling (Sol-ice)	Nightsolar cooling system to reduce cooling load on building during the night (Solarwall)	N/A	N/A
			Passive						
	Other	Other	Active	Integrated poultry drying panels	Poultry ventilation system (Solarwall)	Roof integrated PV/T	Photovoltaic panelled garage future concept electric car charging	Lumber drying process BIST integrated container panel (Solarwall)	Lean to solar thermal panels, made by DIT final year student
	Electricity	PV/T	Passive						
			Active	Photovoltaic windowpanes	Photovoltaic window shades	Transparent roofing Photovoltaic underlayer	Retrofitting photovoltaic panels to original structure	Snow management (Sol-ice)	Photovoltaic Awnings



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				Installed on ...					
				Wall		Roof		Other	
				New	Refurbishment	New	Refurbishment	New	Refurbishment
Output	Air	Air heating	Active	Barra-Costantini system (Barra and Costantini, 1979)	Trombe wall air heater schematic for retrofit	RSC	Transparent overcladding to form an air heating solar collector (Lo and Norton, 1996)	N/A	N/A
			Passive						
		Space heating	Active						
			Passive	TAP Low-heat-loss glazings	External TIM	Integrated BIST roof material	Retrofitted collector panels	Yard mounted collectors	Space heating Doma solar
	Water	Combinisystems	Active	Façade Collectors Asymmetric wall-mounted concentrators (Adesani)	Refurbished hybrid system	BIST roofing material (shingles/tiles) with hybrid photovoltaic thermal technology	Hybrid roof PV/thermal system	Free standing canopies structure supporting collector/panels (Bio-texture)	Cantilevered shades featuring thermalfin copper collectors glazed with tempered glass (Bio-texture)
			Passive						
		Water heating	Active	BIST water heating façade panels	Retrofit water heating wall panels	Water heating unit integrated on flat or inclined roofing		Standalone hybrid panels	Balcony mounted panel panel
			Passive						
		Cooling	Active	Trombe wall for cooling		Building integrated solar thermal material prior to roof installation for night cooling (Sol-ice)	Nightsolar cooling system to reduce cooling load on building during the night (Solawall)	N/A	N/A
			Passive						
	Other	Other	Active	Integrated poultry drying panels	Poultry ventilation system (Solarwall)	Roof integrated PV/T	Photovoltaic panelled garage future concept electric car charging	Lumber drying process BIST integrated container panel (Solarwall)	Lean to solar thermal panels, made by DIT final year student
			Passive						
	Electricity	PV/T	Active	Photovoltaic windowpanes	Photovoltaic window shades	Transparent roofing Photovoltaic underlayer	Retrofitting photovoltaic panels to original structure	Snow management (Sol-ice)	Photovoltaic Awnings
			Passive						



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				European Cooperation in the field of Scientific and Technical Research					
				Building Integration of Solar Thermal Systems – TU1205 – BISTS					
				Installed on					
				Wall		Roof		Other	
				New	Refurbishment	New	Refurbishment	New	Refurbishment
Output	Air	Air heating	Active	Barra-Costantini system (Barra and Costantini, 1979)	Trombe wall air heater schematic for retrofit	RSC	Transparent overcladding to form an air heating solar collector (Lo and Norton, 1996)	N/A	N/A
			Passive						
		Space heating	Active	TAP	External TIM	Integrated BIST roof material	Retrofitted collector panels	Yard mounted collectors	Space heating Doma solar
			Passive	Low heat-loss glazings					
	Water	Combinisystems	Active	Façade Collectors Asymmetric wall-mounted concentrators (Adesani)	Refurbished hybrid system	BIST roofing material (shingles/tiles) with hybrid photovoltaic/thermal technology	Hybrid roof PV/thermal system	Free standing canopies structure supporting collectors/panels (bio-texture)	Cantervered shades featuring thermalfin copper collectors glazed with tempered glass (Bio-texture)
			Passive						
		Water heating	Active	BIST water heating façade panels	Retrofit water heating wall panels	Water heating unit integrated on flat or inclined roofing	Evacuated tube collectors retrofitted on original roofing	Balcony mounted panel panel	
			Passive						
		Cooling	Active	Trombe wall for cooling		Building integrated solar thermal material prior to roof installation for night cooling (Sol-ice)	Nightsolar cooling system to reduce cooling load on building during the night (Solawall)	N/A	N/A
			Passive						
	Other	Other	Active	Integrated poultry drying panels	Poultry ventilation system (Solarwall)	Roof integrated PV/T	Photovoltaic panelled garage future concept electric car charging	Lumber drying process BIST integrated container panel (Solarwall)	Lean to solar thermal panels, made by DIT final year student
	Electricity	PV/T	Active	Photovoltaic windowpanels	Photovoltaic window shades	Transparent roofing Photovoltaic underlayer	Retrofitting photovoltaic panels to original structure	Snow management (Sol-ice)	Photovoltaic Awnings

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				European Cooperation in the field of Scientific and Technical Research					
				Building Integration of Solar Thermal Systems – TU1205 – BISTS					
				Installed on					
				Wall		Roof		Other	
				New	Refurbishment	New	Refurbishment	New	Refurbishment
Output	Air	Air heating	Active	Barra-Costantini system (Barra and Costantini, 1979)	Trombe wall air heater schematic for retrofit	RSC	Transparent overcladding to form an air heating solar collector (Lo and Norton, 1996)	N/A	N/A
			Passive						
		Space heating	Active	TAP	External TIM	Integrated BIST roof material	Retrofitted collector panels	Yard mounted collectors	Space heating Doma solar
			Passive	Low heat-loss glazings					
	Water	Combinisystems	Active	Façade Collectors Asymmetric wall-mounted concentrators (Adesani)	Refurbished hybrid system	BIST roofing material (shingles/tiles) with hybrid photovoltaic/thermal technology	Hybrid roof PV/thermal system	Free standing canopies structure supporting collectors/panels (bio-texture)	Cantervered shades featuring thermalfin copper collectors glazed with tempered glass (Bio-texture)
			Passive						
		Water heating	Active	BIST water heating façade panels	Retrofit water heating wall panels	Water heating unit integrated on flat or inclined roofing	Evacuated tube collectors retrofitted on original roofing	Standalone hybrid panels	
			Passive						
		Cooling	Active	Trombe wall for cooling		Building integrated solar thermal material prior to roof installation for night cooling (Sol-ice)	Nightsolar cooling system to reduce cooling load on building during the night (Solawall)	N/A	N/A
			Passive						
	Other	Other	Active	Integrated poultry drying panels	Poultry ventilation system (Solarwall)	Roof integrated PV/T	Photovoltaic panelled garage future concept electric car charging	Lumber drying process BIST integrated container panel (Solarwall)	Lean to solar thermal panels, made by DIT final year student
	Electricity	PV/T	Active	Photovoltaic windowpanels	Photovoltaic window shades	Transparent roofing Photovoltaic underlayer	Retrofitting photovoltaic panels to original structure	Snow management (Sol-ice)	Photovoltaic Awnings

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			Installed on ...						
			Wall		Roof		Other		
			New	Refurbishment	New	Refurbishment	New	Refurbishment	
Output	Air	Air heating	Active	Barra-Constantini system (Barra and Constantini, 1979)	Trombe wall air heater schematic for retrofit	RSC	Transparent overcladding to form an air heating solar collector (Lo and Norton, 1996)	N/A	N/A
			Passive						
		Space heating	Active	TAP	External TIM	Integrated BIST roof material	Retrofitted collector panels	Yard mounted collectors	Space heating Doma solar
			Passive	Low-heat-loss glazings					
	Water	Combinisystems	Active	Façade Collectors Asymmetric wall-mounted concentrators (Adesan)	Refurbished hybrid system	BIST roofing material (shingles/tiles) with integrated photovoltaic thermal technology	Hybrid roof PV/thermal system	Free standing canopies structure supporting collectors/panels (bio-texture)	Canilevered shades featuring thermalfin copper collectors glazed with tempered glass (Bio-texture)
			Passive						
		Water heating	Active	BIST water heating façade panels	Retrofit water heating wall panels	Water heating unit integrated on flat or inclined roofing	Evacuated tube collectors retrofitted on original roofing	Standalone hybrid panels	
			Passive						
		Cooling	Active	Trombe wall for cooling			Nightsolar cooling system to reduce cooling load on building during the night (Solarwall)	N/A	N/A
			Passive						
	Other	Other	Active	Integrated poultry drying panels	Poultry ventilation system (Solarwall)	Roof integrated PV/T	Photovoltaic panelled garage future concept electric car charging	Lumber drying process BIST integrated container panel (Solarwall)	Lean to solar thermal panels, made by DIT final year student
			Passive						
	Electricity	PV/T	Active	Photovoltaic windowpanels	Photovoltaic window shades	Transparent roofing Photovoltaic underlayer	Retrofitting photovoltaic panels to original structure	Snow management (Sol-ice)	Photovoltaic Awnings



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				Installed on ...					
				Wall		Roof		Other	
				New	Refurbishment	New	Refurbishment	New	Refurbishment
Output	Air	Air heating	Active	Barra-Constantini system (Barra and Constantini, 1979)	Trombe wall air heater schematic for retrofit	RSC	Transparent overcladding to form an air heating solar collector (Lo and Norton, 1996)	N/A	N/A
			Passive						
		Space heating	Active	TAP	External TIM	Integrated BIST roof material	Retrofitted collector panels	Yard mounted collectors	Space heating Doma solar
			Passive	Low heat-loss glazings					
	Water	Combinisystems	Active	Façade Collectors Asymmetric wall-mounted concentrators (Adesan)	Refurbished hybrid system	BIST roofing material (shingles/tiles) with hybrid photovoltaic thermal technology	Hybrid roof PV/thermal system	Free standing canopies structure supporting collectors/panels (Bio-texture)	Canilevered shades featuring thermalfin copper collectors glazed with tempered glass (Bio-texture)
			Passive						
		Water heating	Active	BIST water heating façade panels	Retrofit water heating wall panels	Water heating unit integrated on flat or inclined roofing	Evacuated tube collectors retrofitted on original roofing	Standalone hybrid panels	
			Passive						
		Cooling	Active	Trombe wall for cooling		Building integrated solar thermal material prior to roof installation for right roofing (Sol-ice)		N/A	N/A
			Passive						
	Other	Other	Active	Integrated poultry drying panels	Poultry ventilation system (Solarwall)	Roof integrated PV/T	Photovoltaic panelled garage future concept electric car charging	Lumber drying process BIST integrated container panel (Solarwall)	Lean to solar thermal panels, made by DIT final year student
			Passive						
	Electricity	PV/T	Active	Photovoltaic windowpanels	Photovoltaic window shades	Transparent roofing Photovoltaic underlayer	Retrofitting photovoltaic panels to original structure	Snow management (Sol-ice)	Photovoltaic Awnings



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		European Cooperation in the field of Scientific and Technical Research		Building Integration of Solar Thermal Systems – TU1205 – BISTS					
				Installed on					
				Wall		Roof		Other	
				New	Refurbishment	New	Refurbishment	New	Refurbishment
Output	Air	Air heating	Active	Barra-Constantini system (Barra and Constantini, 1979)	Trombe wall air heater schematic for retrofit	RSC	Transparent overcladding to form an air heating solar collector (Lo and Norton, 1996)	N/A	N/A
			Passive						
		Space heating	Active	TAP	External TIM	Integrated BIST roof material	Retrofitted collector panels	Yard mounted collectors	Space heating Doma solar
			Passive	Low heat-loss glazing					
	Water	Combinisystems	Active	Façade Collectors Asymmetric wall-mounted concentrators (Adesan)	Refurbished hybrid system	BIST roofing material (shingles/tiles) with hybrid photovoltaic/thermal technology	Hybrid roof PV/thermal system	Free standing canopies structure supporting collector/panels (bio-texture)	Cantervered shades featuring thermafin copper collectors glazed with tempered glass (Bio-texture)
			Passive						
		Water heating	Active	BIST water heating façade panels	Retrofit water heating wall panels	Water heating unit integrated on flat or inclined roofing	Evacuated tube collectors retrofitted on original roofing	Standalone hybrid panels	
			Passive						
		Cooling	Active	Trombe wall for cooling		Building integrated solar thermal material prior to roof installation for night cooling (Sol-ice)		N/A	N/A
			Passive						
	Other	Other	Active		Poultry ventilation system (Solarwall)	Roof integrated PV/T	Photovoltaic panelled garage future concept electric car charging	Lumber drying process BIST integrated container panel (Solarwall)	Lean to solar thermal panels, made by DIT final year student
	Electricity	PV/T	Active	Photovoltaic windowpanels	Photovoltaic window shades	Transparent roofing Photovoltaic underlayer	Retrofitting photovoltaic panels to original structure	Snow management (Sol-ice)	Photovoltaic Awnings

		European Cooperation in the field of Scientific and Technical Research		Building Integration of Solar Thermal Systems – TU1205 – BISTS					
				Installed on					
				Wall		Roof		Other	
				New	Refurbishment	New	Refurbishment	New	Refurbishment
Output	Air	Air heating	Active	Barra-Constantini system (Barra and Constantini, 1979)	Trombe wall air heater schematic for retrofit	RSC	Transparent overcladding to form an air heating solar collector (Lo and Norton, 1996)	N/A	N/A
			Passive						
		Space heating	Active	TAP	External TIM	Integrated BIST roof material	Retrofitted collector panels	Yard mounted collectors	Space heating Doma solar
			Passive	Low heat-loss glazing					
	Water	Combinisystems	Active	Façade Collectors Asymmetric wall-mounted concentrators (Adesan)	Refurbished hybrid system	BIST roofing material (shingles/tiles) with hybrid photovoltaic/thermal technology	Hybrid roof PV/thermal system	Free standing canopies structure supporting collector/panels (bio-texture)	Cantervered shades featuring thermafin copper collectors glazed with tempered glass (Bio-texture)
			Passive						
		Water heating	Active	BIST water heating façade panels	Retrofit water heating wall panels	Water heating unit integrated on flat or inclined roofing	Evacuated tube collectors retrofitted on original roofing	Standalone hybrid panels	Balcony mounted panel panel
			Passive						
		Cooling	Active	Trombe wall for cooling		Building integrated solar thermal material prior to roof installation for night cooling (Sol-ice)	Night cooler cooling system to reduce cooling load on building during the night (Solarwall)	N/A	N/A
			Passive						
	Other	Other	Active	Integrated poultry drying panels		Roof integrated PV/T	Photovoltaic panelled garage future concept electric car charging	Lumber drying process BIST integrated container panel (Solarwall)	Lean to solar thermal panels, made by DIT final year student
	Electricity	PV/T	Active	Photovoltaic windowpanels	Photovoltaic window shades	Transparent roofing Photovoltaic underlayer	Retrofitting photovoltaic panels to original structure	Snow management (Sol-ice)	Photovoltaic Awnings

cost		European Cooperation in the field of Scientific and Technical Research					
www.cost.esf.org		Building Integration of Solar Thermal Systems – TU1205 – BISTS					
Output	Air	Air heating	Active Passive	Installed on			
				Wall		Roof	
				New	Refurbishment	New	Refurbishment
		Air heating	Active	Barra-Costantini system (Barra and Costantini, 1979)	Trombe wall air heater schematic for retrofit	RSC	Transparent overcladding to form an air heating solar collector (Lo and Norton, 1996)
		Space heating	Active	TAP Low heat-loss glazings	External TIM	Integrated BIST roof material	Retrofitted collector panels
	Water	Combinisystems	Active	Façade Collectors Asymmetric wall-mounted concentrators (Adesan)	Refurbished hybrid system	BIST roofing material (shingles/tiles) with hybrid photovoltaic/thermal technology	Hybrid roof PV/thermal system
		Water heating	Active	BIST water heating façade panels	Retrofit water heating wall panels	Water heating unit integrated on flat or inclined roofing	Evacuated tube collectors retrofitted on original roofing
		Cooling	Active	Trombe wall for cooling		Building integrated solar thermal material prior to roof installation for right roofing (Sol-ice)	Nightsolar cooling system to reduce cooling load on building during the night (Solairwall)
		Other	Active	Integrated poultry drying panels	Poultry ventilation system (Solarwall)	Photovoltaic panelled garage future concept electric car charging	Lumber drying process BIST integrated container panel (Solarwall)
	Electricity	PV/T	Active	Photovoltaic windowpanels	Photovoltaic window shades	Transparent roofing Photovoltaic underlayer	Retrofitting photovoltaic panels to original structure
							Snow management (Sol-ice)
							Photovoltaic Awnings


cost		European Cooperation in the field of Scientific and Technical Research					
www.cost.esf.org		Building Integration of Solar Thermal Systems – TU1205 – BISTS					
Output	Air	Air heating	Active Passive	Installed on			
				Wall		Roof	
				New	Refurbishment	New	Refurbishment
		Air heating	Active	Barra-Costantini system (Barra and Costantini, 1979)	Trombe wall air heater schematic for retrofit	RSC	Transparent overcladding to form an air heating solar collector (Lo and Norton, 1996)
		Space heating	Active	TAP Low heat-loss glazings	External TIM	Integrated BIST roof material	Retrofitted collector panels
	Water	Combinisystems	Active	Façade Collectors Asymmetric wall-mounted concentrators (Adesan)	Refurbished hybrid system	BIST roofing material (shingles/tiles) with hybrid photovoltaic/thermal technology	Hybrid roof PV/thermal system
		Water heating	Active	BIST water heating façade panels	Retrofit water heating wall panels	Water heating unit integrated on flat or inclined roofing	Evacuated tube collectors retrofitted on original roofing
		Cooling	Active	Trombe wall for cooling		Building integrated solar thermal material prior to roof installation for right roofing (Sol-ice)	Nightsolar cooling system to reduce cooling load on building during the night (Solairwall)
		Other	Active	Integrated poultry drying panels	Poultry ventilation system (Solarwall)	Roof integrated PV/T	Lumber drying process BIST integrated container panel (Solarwall)
	Electricity	PV/T	Active	Photovoltaic windowpanels	Photovoltaic window shades	Transparent roofing Photovoltaic underlayer	Retrofitting photovoltaic panels to original structure
							Snow management (Sol-ice)
							Photovoltaic Awnings





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				Installed on					
				Wall		Roof		Other	
				New	Refurbishment	New	Refurbishment	New	Refurbishment
Output	Air	Air heating	Active	Barra-Costantini system (Barra and Costantini, 1979)	Trombe wall air heater schematic for retrofit	RSC	Transparent overcladding to form an air heating solar collector (Lo and Norton, 1996)	N/A	N/A
			Passive						
		Space heating	Active	TAP Low heat-loss glazings	External TIM	Integrated BIST roof material	Retrofitted collector panels	Yard mounted collectors	Space heating Doma solar
			Passive						
	Water	Combi systems	Active	Façade Collectors Asymmetric wall-mounted concentrators (Adesan)	Refurbished hybrid system	BIST roofing material (shingles/tiles) with hybrid photovoltaic/thermal technology	Hybrid roof PV/thermal system	Free standing canopies structure supporting collectors/panels (bio-texture)	Cantervered shades featuring thermalfin copper collectors glazed with tempered glass (Bio-texture)
			Passive						
		Water heating	Active	BIST water heating façade panels	Retrofit water heating wall panels	Water heating unit integrated on flat or inclined roofing	Evacuated tube collectors retrofitted on original roofing	Standalone hybrid panels	Balcony mounted panel panel
			Passive						
		Cooling	Active	Trombe wall for cooling		Building integrated solar thermal material prior to roof installation for night cooling (Sol-ice)	Nightsolar cooling system to reduce cooling load on building during the night (Solawall)		N/A
			Passive						
	Other	Other	Active	Integrated poultry drying panels	Poultry ventilation system (Solarwall)	Roof integrated PV/T	Photovoltaic panelled garage future concept electric car charging		Lean to solar thermal panels, made by DIT final year student
			Passive						
	Electricity	PV/T	Active	Photovoltaic windowpanels	Photovoltaic window shades	Transparent roofing Photovoltaic underlayer	Retrofitting photovoltaic panels to original structure	Snow management (Sol-ice)	Photovoltaic Awnings



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				Installed on ...					
				Wall		Roof		Other	
				New	Refurbishment	New	Refurbishment	New	Refurbishment
Output	Air	Air heating	Active	Barra-Costantini system (Barra and Costantini, 1979)	Trombe wall air heater schematic for retrofit	RSC	Transparent overcladding to form an air heating solar collector (Lo and Norton, 1996)	N/A	N/A
			Passive						
		Space heating	Active		External TIM	Integrated BIST roof material	Retrofitted collector panels	Yard mounted collectors	Space heating Doma solar
			Passive	TAP Low heat-loss glazings					
	Water	Combi systems	Active	Façade Collectors Asymmetric wall-mounted concentrators (Adesan)	Refurbished hybrid system	BIST roofing material (shingles/tiles) with hybrid photovoltaic/thermal technology	Hybrid roof PV/thermal system	Free standing canopies structure supporting collectors/panels (Bio-texture)	Cantervered shades featuring thermalfin copper collectors glazed with tempered glass (Bio-texture)
			Passive						
		Water heating	Active	BIST water heating façade panels	Retrofit water heating wall panels	Water heating unit integrated on flat or inclined roofing	Evacuated tube collectors retrofitted on original roofing	Standalone hybrid panels	Balcony mounted panel panel
			Passive						
		Cooling	Active	Trombe wall for cooling		Building integrated solar thermal material prior to roof installation for night cooling (Sol-ice)	Nightsolar cooling system to reduce cooling load on building during the night (Solawall)	N/A	
			Passive						
	Other	Other	Active	Integrated poultry drying panels	Poultry ventilation system (Solarwall)	Roof integrated PV/T	Photovoltaic panelled garage future concept electric car charging	Lumber drying process BIST integrated container panel (Solarwall)	
			Passive						
	Electricity	PV/T	Active	Photovoltaic windowpanels	Photovoltaic window shades	Transparent roofing Photovoltaic underlayer	Retrofitting photovoltaic panels to original structure	Snow management (Sol-ice)	Photovoltaic Awnings

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				Installed on					
				Wall		Roof		Other	
				New	Refurbishment	New	Refurbishment	New	Refurbishment
Output	Air	Air heating	Active	Barra-Costantini system (Barra and Costantini, 1979)	Trombe wall air heater schematic for retrofit	RSC	Transparent overcladding to form an air heating solar collector (Lo and Norton, 1996)	N/A	N/A
			Passive						
	Space heating	Space heating	Active	TAP	External TIM	Integrated BIST roof material	Retrofitted collector panels	Yard mounted collectors	Space heating Doma solar
			Passive	Low-heat-loss glazings					
	Water	Combinisystems	Active	Façade Collectors Asymmetric wall-mounted concentrators (Adesan)	Refurbished hybrid system	BIST roofing material (shingles/tiles) with hybrid photovoltaic/thermal technology	Hybrid roof PV/thermal system	Free standing canopies structure supporting collector/panels (bio-texture)	Canistered shades featuring thermally copper collectors glazed with tempered glass (Bio-texture)
			Passive						
		Water heating	Active	BIST water heating façade panels	Retrofit water heating wall panels	Water heating unit integrated on flat or inclined roofing	Evacuated tube collectors retrofitted on original roofing	Standalone hybrid panels	Balcony mounted panel panel
			Passive						
	Cooling	Cooling	Active	Trombe wall for cooling		Building integrated solar thermal material prior to roof installation for night cooling (Sol-ice)	Nightsolar cooling system to reduce cooling load on building during the night (Solawall)	N/A	N/A
			Passive						
	Other	Other	Active	Integrated poultry panels	Poultry ventilation system (Solarwall)	Roof integrated PV/T	Photovoltaic panelled garage future concept electric car charging	Lumber drying process BIST integrated container panel (Solarwall)	Lean to solar thermal panels, made by DIT final year student
			Passive						
	Electricity	PV/T	Active		Photovoltaic window shades	Transparent roofing Photovoltaic underlayer	Retrofitting photovoltaic panels to original structure	Snow management (Sol-ice)	Photovoltaic Awnings



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			Installed on ...					
Output			Wall		Roof		Other	
			New	Refurbishment	New	Refurbishment	New	Refurbishment
	Air	Air heating	Passive	Barra-Costantini system (Barra and Costantini, 1979)	Trombe wall air heater schematic for retrofit	RSC	Transparent overcladding to form an air heating solar collector (Lo and Norton, 1996)	N/A
			Active					
	Space heating	Space heating	Active	TAP	External TIM	Integrated BIST roof material	Retrofitted collector panels	Yard mounted collectors
			Passive	Low heat-loss glazings				Space heating Doma solar
	Water	Combinisystems	Active	Façade Collectors Asymmetric wall-mounted concentrators (Adesan)	Refurbished hybrid system	BIST roofing material (shingles/tiles) with hybrid photovoltaic/thermal technology	Hybrid roof PV/thermal system	Free standing canopies structure supporting collector/panels glazed with tempered glass (Bio-texture)
			Passive					Canistered shades featuring thermally copper collectors glazed with tempered glass (Bio-texture)
		Water heating	Active	BIST water heating façade panels	Retrofit water heating wall panels	Water heating unit integrated on flat or inclined roofing	Evacuated tube collectors retrofitted on original roofing	Standalone hybrid panels
			Passive					Balcony mounted panel panel
	Cooling	Cooling	Active	Trombe wall for cooling		Building integrated solar thermal material prior to roof installation for night cooling (Sol-ice)	Nightsolar cooling system to reduce cooling load on building during the night (Solarwall)	N/A
			Passive					N/A
	Other	Other	Active	Integrated poultry drying panels	Poultry ventilation system (Solarwall)	Roof integrated PV/T	Photovoltaic panelled garage future concept electric car charging	Lumber drying process BIST integrated container panel (Solarwall)
			Passive					Lean to solar thermal panels, made by DIT final year student
	Electricity	PV/T	Active	Photovoltaic window shades		Transparent roofing Photovoltaic underlayer	Retrofitting photovoltaic panels to original structure	Snow management (Sol-ice)



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			Installed on ...						
			Wall		Roof		Other		
			New	Refurbishment	New	Refurbishment	New	Refurbishment	
Output	Air	Air heating	Passive	Barra-Constantini system (Barra and Constantini, 1979)	Trombe wall air heater schematic for retrofit	RSC	Transparent overcladding to form an air heating solar collector (Lo and Norton, 1996)	N/A	N/A
		Space heating	Active	TAP Low-heat-loss glazings	External TIM	Integrated BIST roof material	Retrofitted collector panels	Yard mounted collectors	Space heating Doma solar
	Water	Combinisystems	Active	Façade Collectors Asymmetric wall-mounted concentrators (Adesan)	Refurbished hybrid system	BIST roofing material (shingles/tiles) with hybrid photovoltaic/thermal technology	Hybrid roof PV/thermal system	Free standing canopies structure supporting collector/panels (bio-texture)	Canilevered shades featuring thermalfin copper collectors glazed with tempered glass (Bio-texture)
			Passive						
		Water heating	Active	BIST water heating façade panels	Retrofit water heating wall panels	Water heating unit integrated on flat or inclined roofing	Evacuated tube collectors retrofitted on original roofing	Standalone hybrid panels	Balcony mounted panel panel
			Passive						
	Cooling		Active	Trombe wall for cooling		Building integrated solar thermal material prior to roof installation for night cooling (Sol-ice)	Nightsolar cooling system to reduce cooling load on building during the night (Sol-wall)	N/A	N/A
			Passive						
	Other	Other	Active	Integrated poultry drying panels	Poultry ventilation system (Solarwall)	Roof integrated PV/T	Photovoltaic panelled garage future concept electric car charging	Lumber drying process BIST integrated container panel (Solarwall)	Lean to solar thermal panels, made by DIT final year student
			Passive						
	Electricity	PV/T	Active	Photovoltaic windowpanels	Photovoltaic window shades			Retrofitted photovoltaic panels to original structure	Snow management (Sol-ice)



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European Cooperation in the field of Scientific and Technical Research


Building Integration of Solar Thermal Systems – TU1205 – BISTS

				Installed on ...					
				Wall		Roof		Other	
				New	Refurbishment	New	Refurbishment	New	Refurbishment
Output	Air	Air heating	Active	Barra-Constantini system (Barra and Constantini, 1979)	Trombe wall air heater schematic for retrofit	RSC	Transparent overcladding to form an air heating solar collector (Lo and Norton, 1996)	N/A	N/A
			Passive						
		Space heating	Active	TAP	External TIM	Integrated BIST roof material	Retrofitted collector panels	Yard mounted collectors	Space heating Doma solar
			Passive	Low-heat-loss glazings					
	Water	Combinisystems	Active	Façade Collectors Asymmetric wall-mounted concentrators (Adesan)	Refurbished hybrid system	BIST roofing material (shingles/tiles) with hybrid photovoltaic/thermal technology	Hybrid roof PV/thermal system	Free standing canopies structure supporting collector/panels (Bio-texture)	Canilevered shades featuring thermalfin copper collectors glazed with tempered glass (Bio-texture)
			Passive						
		Water heating	Active	BIST water heating façade panels	Retrofit water heating wall panels	Water heating unit integrated on flat or inclined roofing	Evacuated tube collectors retrofitted on original roofing	Standalone hybrid panels	Balcony mounted panel panel
			Passive						
		Cooling	Active	Trombe wall for cooling		Building integrated solar thermal material prior to roof installation for night cooling (Sol-ice)	Nightsolar cooling system to reduce cooling load on building during the night (Sol-wall)	N/A	N/A
			Passive						
	Other	Other	Active	Integrated poultry drying panels	Poultry ventilation system (Solarwall)	Roof integrated PV/T	Photovoltaic panelled garage future concept electric car charging	Lumber drying process BIST integrated container panel (Solarwall)	Lean to solar thermal panels, made by DIT final year student
			Passive						
	Electricity	PV/T	Active	Photovoltaic windowpanels	Photovoltaic window shades	Transparent roofing Photovoltaic underlayer	Retrofitted photovoltaic panels to original structure	Snow management (Sol-ice)	Photovoltaic Awnings
			Passive						




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		Building Integration of Solar Thermal Systems – TU1205 – BISTS									
Output				Installed on							
				Wall		Roof		Other			
				New	Refurbishment	New	Refurbishment	New	Refurbishment		
	Air	Air heating	Active	Barra-Costantini system (Barra and Costantini, 1979)	Trombe wall air heater schematic for retrofit	RSC	Transparent overcladding to form an air heating solar collector (Lo and Norton, 1996)	N/A	N/A		
			Passive								
		Space heating	Active	TAP	External TIM	Integrated BIST roof material	Retrofitted collector panels	Yard mounted collectors	Space heating Doma solar		
			Passive	Low heat-loss glazings							
	Water	Combinisystems	Active	Façade Collectors Asymmetric wall-mounted concentrators (Adesan)	Refurbished hybrid system	BIST roofing material (shingles/tiles) with hybrid photovoltaic/thermal technology	Hybrid roof PV/thermal system	Free standing canopies structure supporting collectors/panels (bio-texture)	Cantilevered shades featuring thermalfilm copper collectors glazed with tempered glass (Bio-texture)		
			Passive								
		Water heating	Active	BIST water heating façade panels	Retrofit water heating wall panels	Water heating unit integrated on flat or inclined roofing	Evacuated tube collectors retrofitted on original roofing	Standalone hybrid panels	Balcony mounted panel panel		
			Passive								
		Cooling	Active	Trombe wall for cooling		Building integrated solar thermal material prior to roof installation for night cooling (Sol-ice)	Nightsolar cooling system to reduce cooling load on building during the night (Solawall)	N/A	N/A		
			Passive								
	Other	Other	Active	Integrated poultry drying panels	Poultry ventilation system (Solarwall)	Roof integrated PV/T	Photovoltaic panelled garage future concept electric car charging	Lumber drying process BIST integrated container panel (Solarwall)	Lean to solar thermal panels, made by DIT final year student		
			Passive								
	Electricity	PV/T	Active	Photovoltaic windowpanels	Photovoltaic window shades	Transparent roofing Photovoltaic underlayer	Retrofitting photovoltaic panels to original structure		Photovoltaic Awnings		

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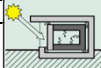
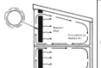

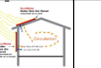
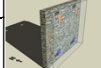


















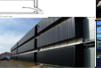













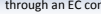





		European Cooperation in the field of Scientific and Technical Research									
		Building Integration of Solar Thermal Systems – TU1205 – BISTS									
Output				Installed on							
				Wall		Roof		Other			
				New	Refurbishment	New	Refurbishment	New	Refurbishment		
	Air	Air heating	Active	Barra-Costantini system (Barra and Costantini, 1979)	Trombe wall air heater schematic for retrofit	RSC	Transparent overcladding to form an air heating solar collector (Lo and Norton, 1996)	N/A	N/A		
			Passive								
		Space heating	Active	TAP	External TIM	Integrated BIST roof material	Retrofitted collector panels	Yard mounted collectors	Space heating Doma solar		
			Passive	Low heat-loss glazings							
	Water	Combinisystems	Active	Façade Collectors Asymmetric wall-mounted concentrators (Adesan)	Refurbished hybrid system	BIST roofing material (shingles/tiles) with hybrid photovoltaic/thermal technology	Hybrid roof PV/thermal system	Free standing canopies structure supporting collectors/panels (bio-texture)	Cantilevered shades featuring thermalfilm copper collectors glazed with tempered glass (Bio-texture)		
			Passive								
		Water heating	Active	BIST water heating façade panels	Retrofit water heating wall panels	Water heating unit integrated on flat or inclined roofing	Evacuated tube collectors retrofitted on original roofing	Standalone hybrid panels	Balcony mounted panel panel		
			Passive								
		Cooling	Active	Trombe wall for cooling		Building integrated solar thermal material prior to roof installation for night cooling (Sol-ice)	Nightsolar cooling system to reduce cooling load on building during the night (Solawall)	N/A	N/A		
			Passive								
	Other	Other	Active	Integrated poultry drying panels	Poultry ventilation system (Solarwall)	Roof integrated PV/T	Photovoltaic panelled garage future concept electric car charging	Lumber drying process BIST integrated container panel (Solarwall)	Lean to solar thermal panels, made by DIT final year student		
			Passive								
	Electricity	PV/T	Active	Photovoltaic windowpanels	Photovoltaic window shades	Transparent roofing Photovoltaic underlayer	Retrofitting photovoltaic panels to original structure	Snow management (Sol-ice)			

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 European Cooperation in the field of Scientific and Technical Research Building Integration of Solar Thermal Systems – TU1205 – BISTS				Installed on					
				Wall		Roof		Other	
				New	Refurbishment	New	Refurbishment	New	Refurbishment
Output	Air	Air heating	Active					N/A	N/A
			Passive						
	Water	Space heating	Active						
			Passive						
		Combi systems	Active						
			Passive						
	Water heating	Active							
		Passive							
	Cooling	Active					N/A	N/A	
		Passive							
	Other	Other	Active						
	Electricity	PV/T	Active						
			Passive						

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Outcomes WG4

Taxonomy of B I S T S

Return feedback to David.Kennedy@dit.ie

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