
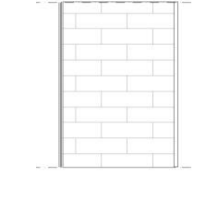
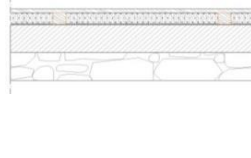

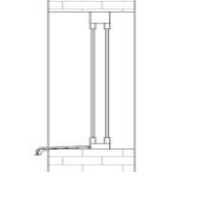

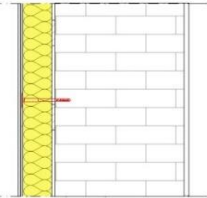
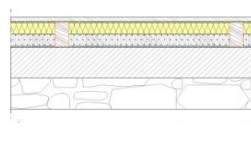
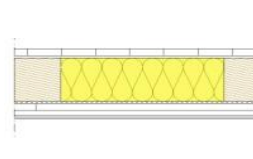
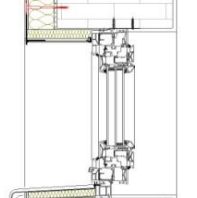

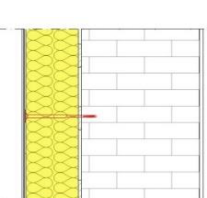
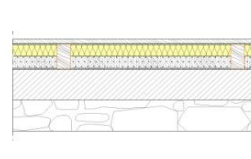
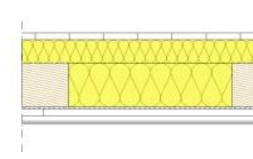
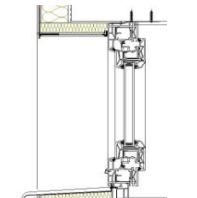


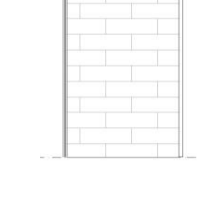
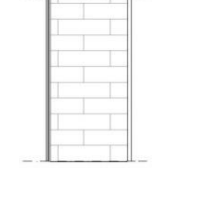
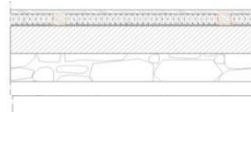

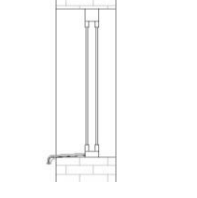

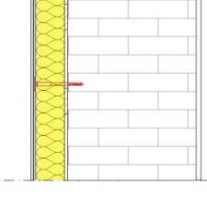
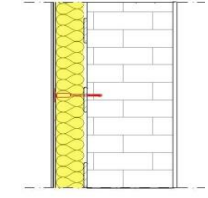
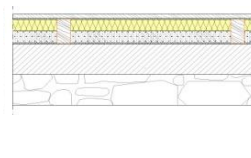
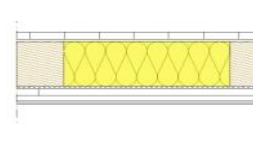
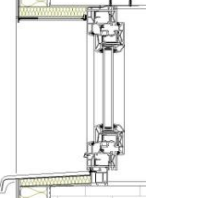

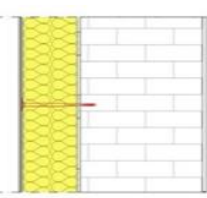
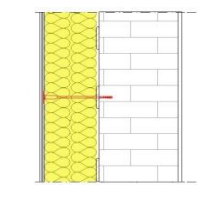
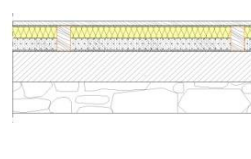
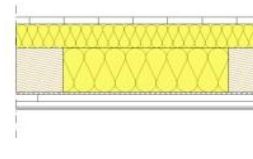
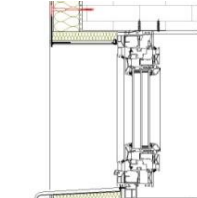
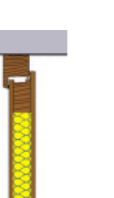

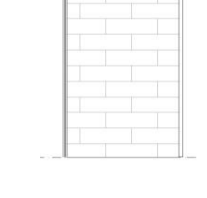
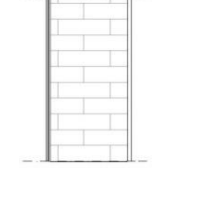
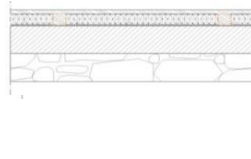
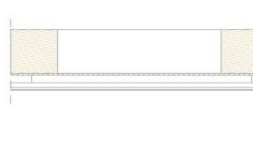
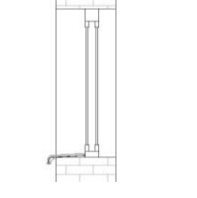

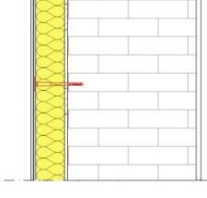
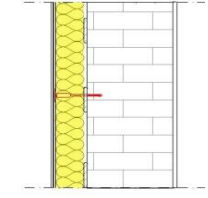
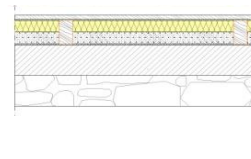
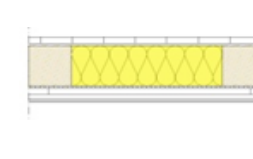
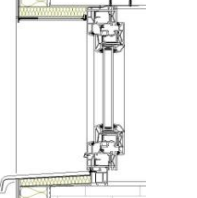

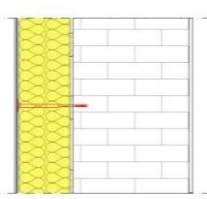
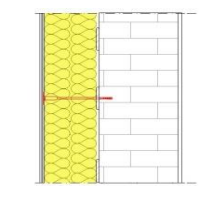
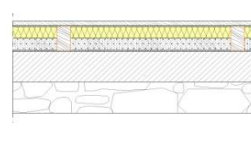
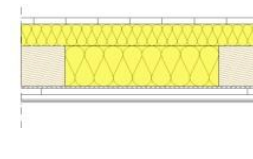
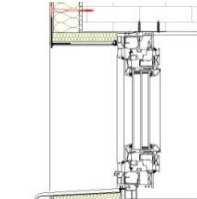
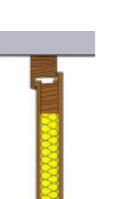

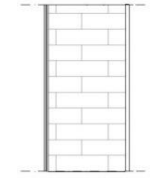


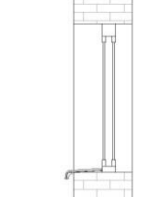

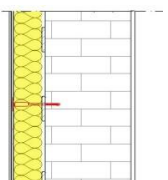
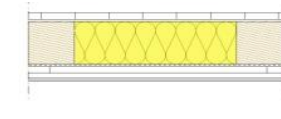
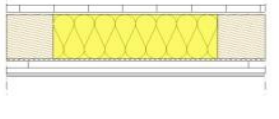
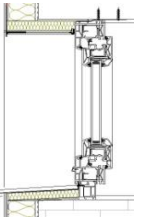

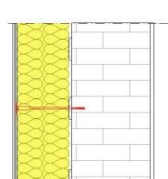
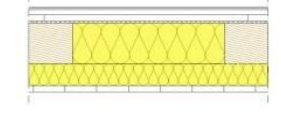
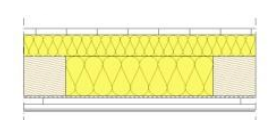
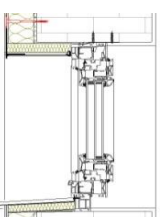
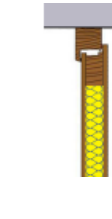

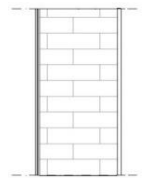
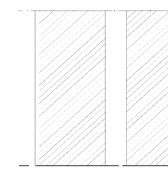
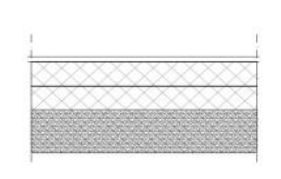
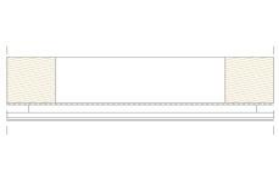
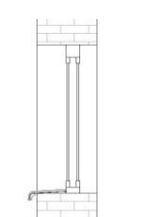

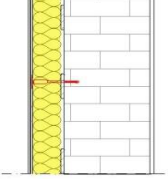
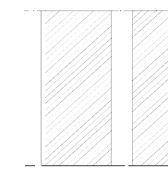
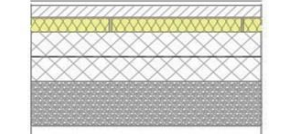
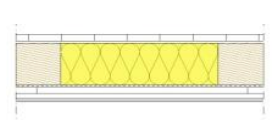
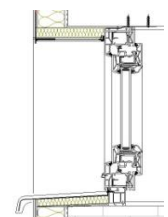

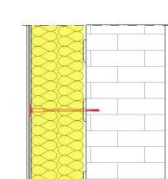

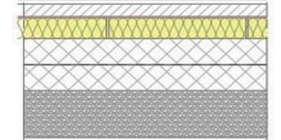
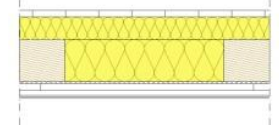
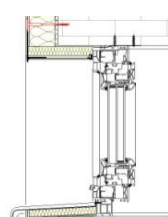
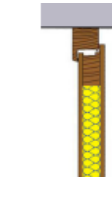

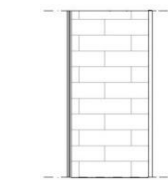
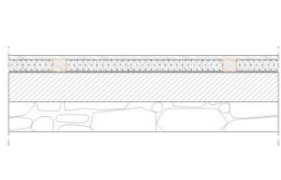

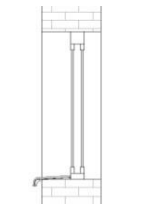

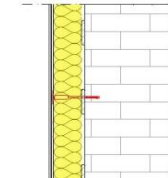
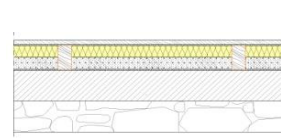
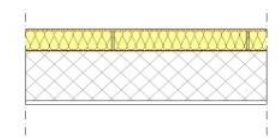
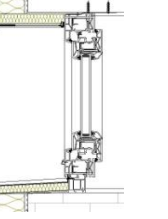

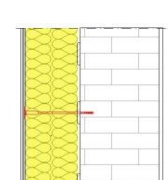
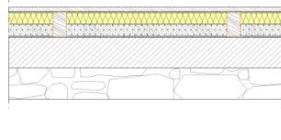
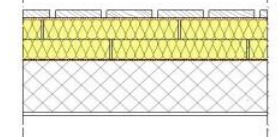
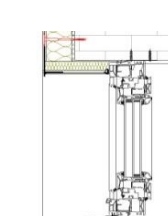
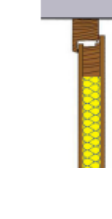
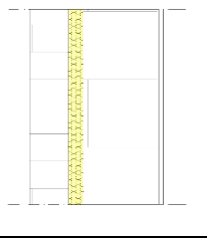
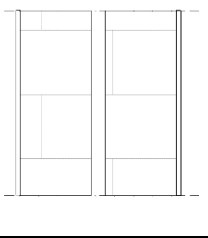
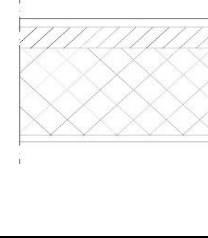
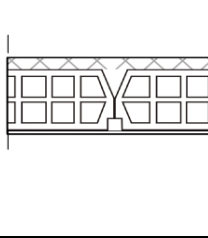
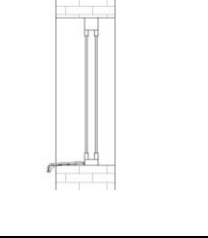
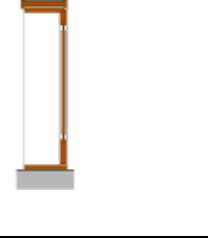

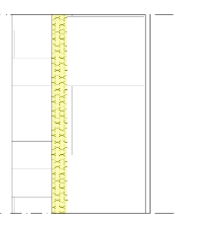
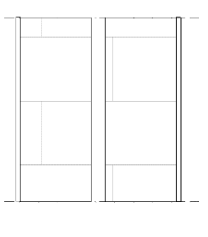
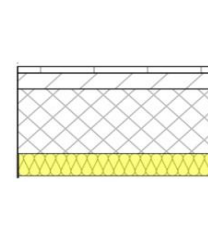
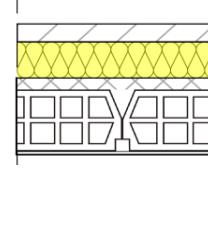
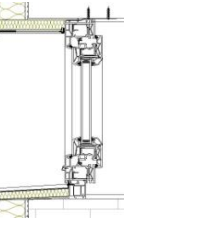
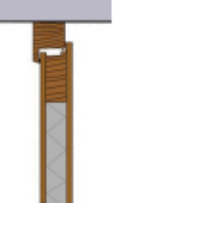
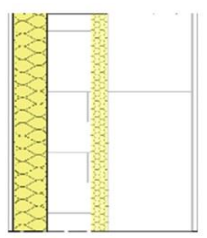
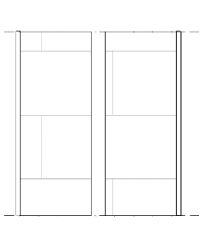
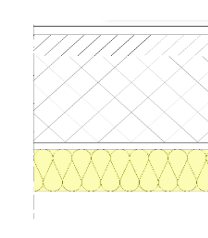
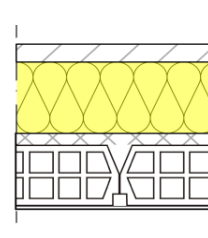
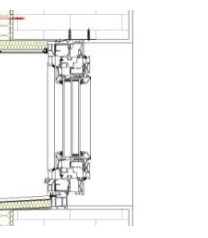
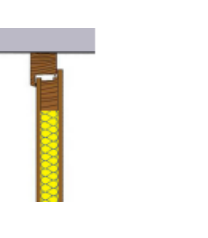
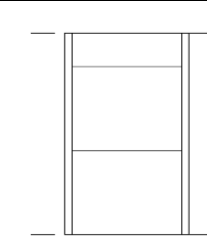
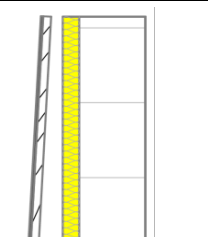
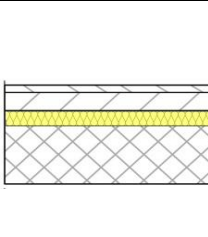
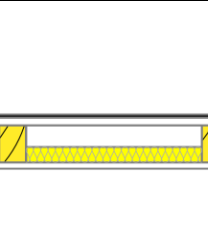
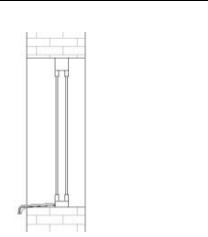

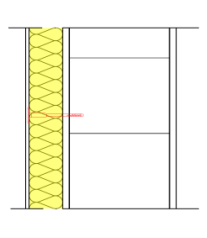
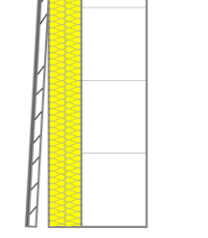
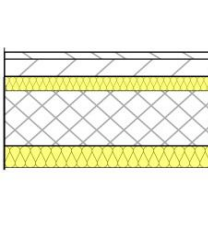
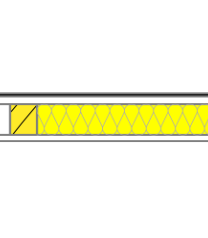
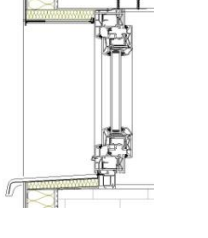

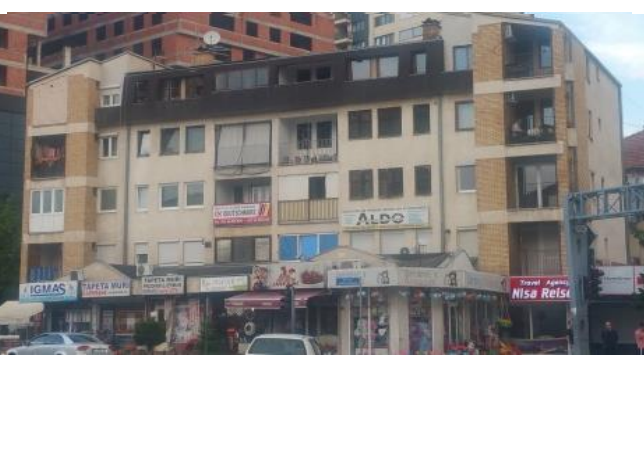
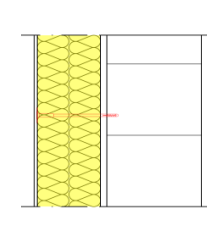
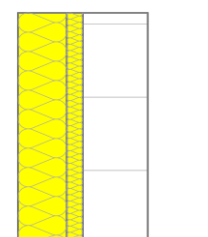
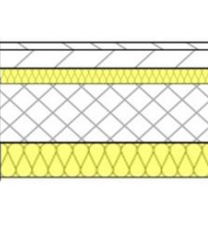
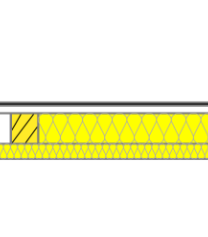
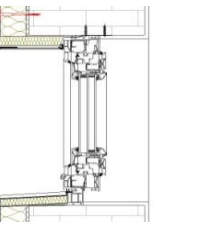
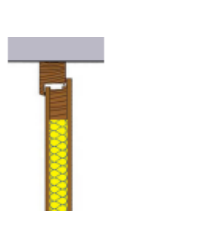
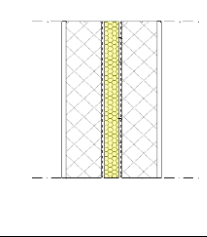
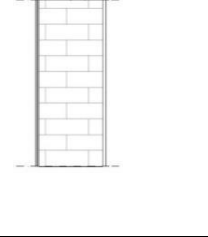
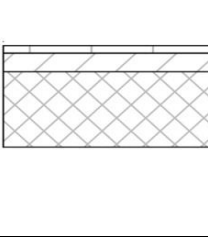
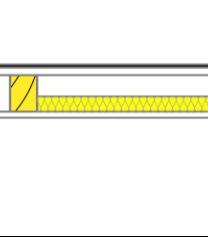
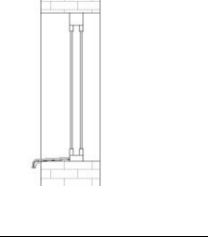

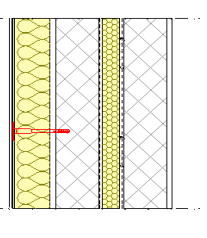
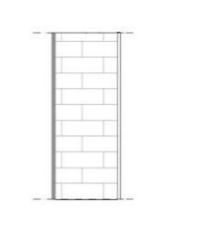
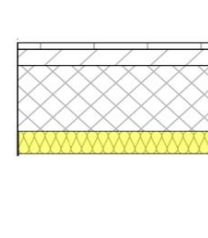
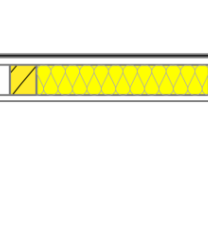
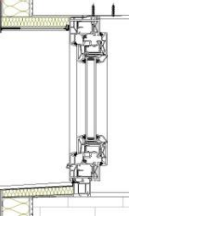


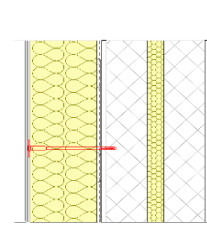
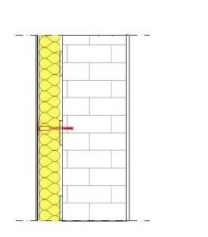
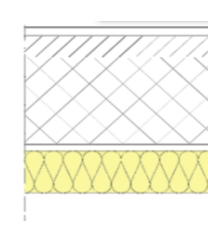
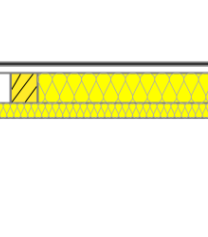
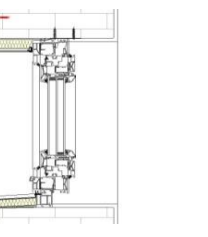
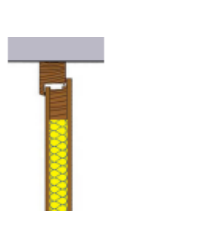



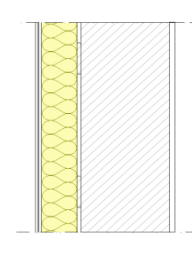
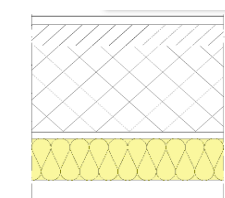
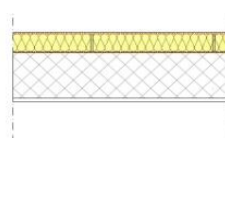
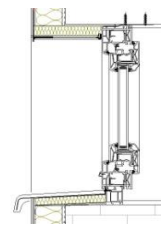

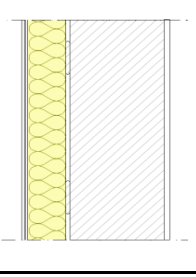
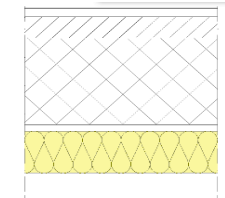
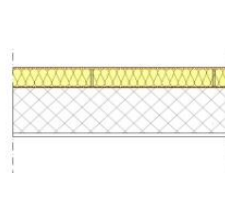
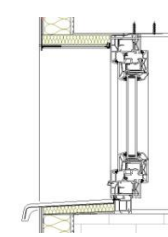

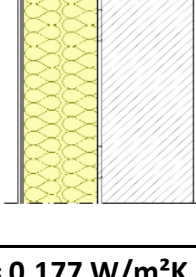
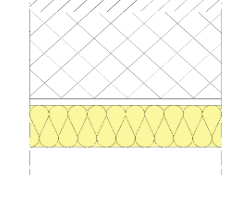
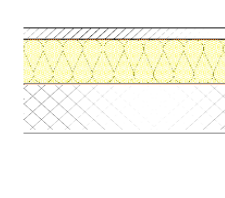
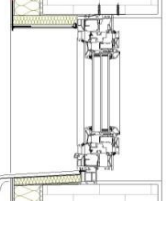
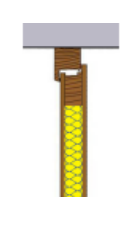

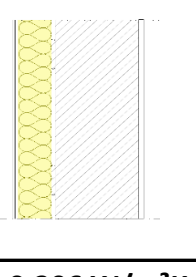
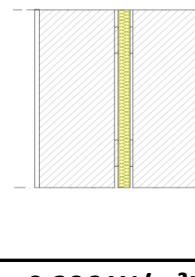
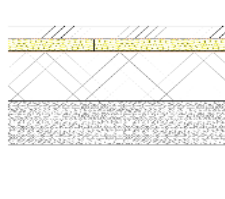
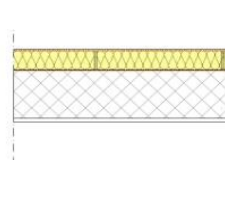
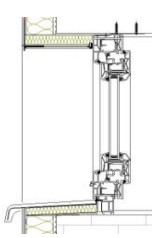

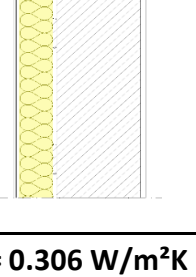
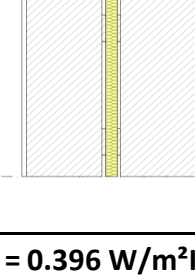
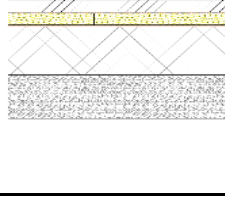
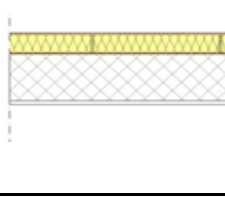
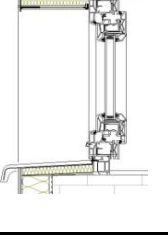
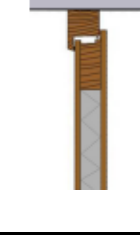
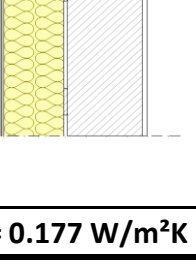
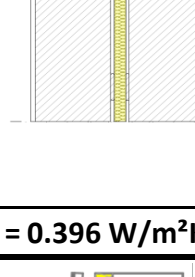
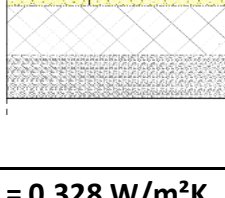
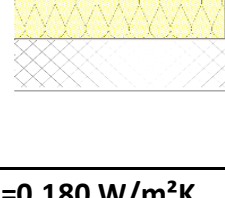
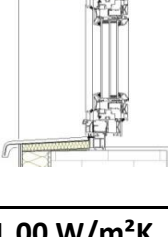


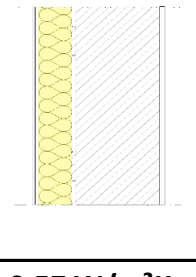
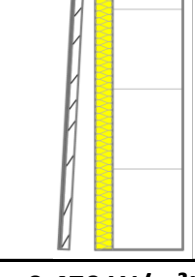
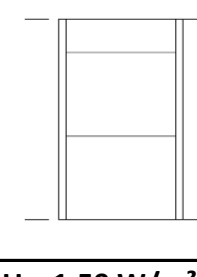
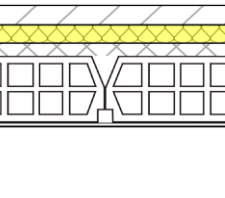
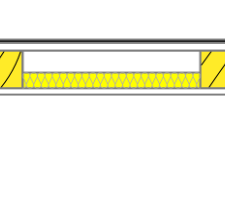
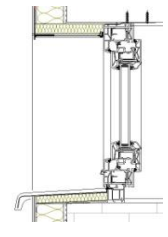
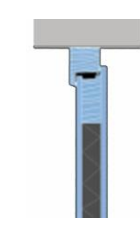
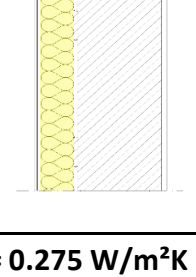
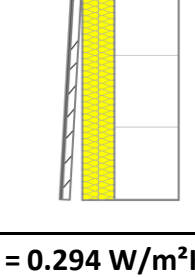
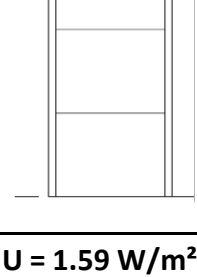
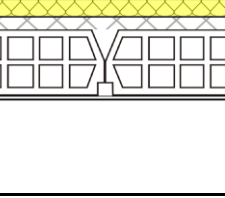
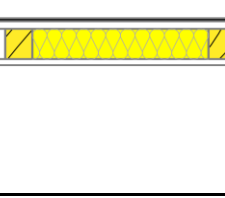
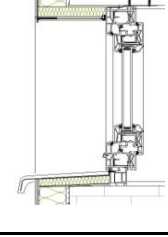
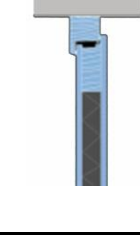
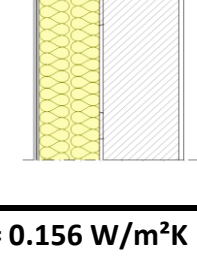
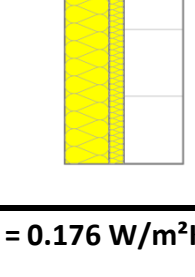
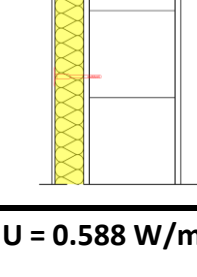
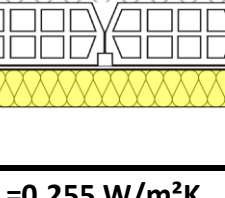
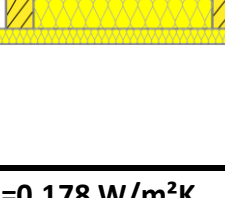
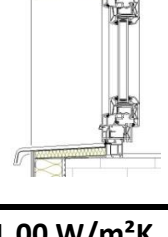
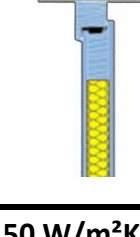
Before 1960		Wall 1	Description	Wall 2	Description	Wall 3	Description	Floor	Description	Roof 1	Description	Windows	Description	Door	Description
	Existing		Plaster 2 cm, solid clay bricks 45 cm, plaster 2cm	N/A	N/A	N/A	N/A		Wooden planks, sand bedding 5 cm, concrete 20 cm		Wooden planks, air space/timber construction beams, straw plaster		Wooden double framed, single grazing		Wooden door
	U-value	$U = 1.135 \text{ W/m}^2\text{K}$						$U = 2.09 \text{ W/m}^2\text{K}$		$U = 1.61 \text{ W/m}^2\text{K}$		$U = 4.80 \text{ W/m}^2\text{K}$		$U = 3.50 \text{ W/m}^2\text{K}$	
	Improvement 1 Optimal measures		Add 10 cm thermal insulation	N/A	N/A	N/A	N/A		Add 5 cm of thermal insulation		Add 16 cm of thermal insulation stone wool		PVC framed, double glazing with low-e		Replacement with a new wooden door
	U-value	$U = 0.296 \text{ W/m}^2\text{K}$						$U = 0.589 \text{ W/m}^2\text{K}$		$U = 0.211 \text{ W/m}^2\text{K}$		$U = 1.60 \text{ W/m}^2\text{K}$		$U = 2.60 \text{ W/m}^2\text{K}$	
Improvement 2 Advanced measures		Add 20 cm thermal insulation	N/A	N/A	N/A	N/A		Add 10 cm of thermal insulation		Add 16+4 cm of thermal insulation stone wool		PVC framed, triple glazing with low-e		Replacement with insulated door	
U-value	$U = 0.170 \text{ W/m}^2\text{K}$						$U = 0.277 \text{ W/m}^2\text{K}$		$U = 0.181 \text{ W/m}^2\text{K}$		$U = 1.0 \text{ W/m}^2\text{K}$		$U = 1.50 \text{ W/m}^2\text{K}$		
	Existing		Plaster 2 cm, solid clay bricks 45 cm, plaster 2cm		Plaster 2 cm, solid clay bricks 31 cm, plaster 2cm	N/A	N/A		Wooden planks, sand bedding 5 cm, concrete 20 cm		Wooden planks, air space/timber construction beams, straw plaster		Wooden double framed, single grazing		Wooden door
	U-value	$U = 1.135 \text{ W/m}^2\text{K}$		$U = 1.45 \text{ W/m}^2\text{K}$				$U = 2.09 \text{ W/m}^2\text{K}$		$U = 1.61 \text{ W/m}^2\text{K}$		$U = 4.8 \text{ W/m}^2\text{K}$		$U = 3.50 \text{ W/m}^2\text{K}$	
	Improvement 1 Optimal measures		Add 10 cm thermal insulation		Add 10 cm thermal insulation	N/A	N/A		Add 5 cm of thermal insulation		Add 16 cm of thermal insulation stone wool		PVC framed, double glazing with low-e		Replacement with a new wooden door
	U-value	$U = 0.296 \text{ W/m}^2\text{K}$		$U = 0.313 \text{ W/m}^2\text{K}$				$U = 0.589 \text{ W/m}^2\text{K}$		$U = 0.211 \text{ W/m}^2\text{K}$		$U = 1.60 \text{ W/m}^2\text{K}$		$U = 2.60 \text{ W/m}^2\text{K}$	
Improvement 2 Advanced measures		Add 20 cm thermal insulation		Add 20 cm thermal insulation	N/A	N/A		Add 10 cm of thermal insulation		Add 16+4 cm of thermal insulation stone wool		PVC framed, triple glazing with low-e		Replacement with insulated door	
U-value	$U = 0.170 \text{ W/m}^2\text{K}$		$U = 0.176 \text{ W/m}^2\text{K}$				$U = 0.277 \text{ W/m}^2\text{K}$		$U = 0.181 \text{ W/m}^2\text{K}$		$U = 1.0 \text{ W/m}^2\text{K}$		$U = 1.50 \text{ W/m}^2\text{K}$		
	Existing		Plaster 2 cm, solid clay bricks 45 cm, plaster 2cm		Plaster 2 cm, solid clay bricks 31 cm, plaster 2cm	N/A	N/A		Wooden planks, sand bedding 5 cm, concrete 20 cm		Wooden planks, air space/timber construction beams, straw plaster		Wooden double framed, single grazing		Wooden door
	U-value	$U = 1.135 \text{ W/m}^2\text{K}$		$U = 1.45 \text{ W/m}^2\text{K}$				$U = 2.09 \text{ W/m}^2\text{K}$		$U = 1.61 \text{ W/m}^2\text{K}$		$U = 4.80 \text{ W/m}^2\text{K}$		$U = 3.50 \text{ W/m}^2\text{K}$	
	Improvement 1 Optimal measures		Add 10 cm thermal insulation		Add 10 cm thermal insulation	N/A	N/A		Add 5 cm of thermal insulation		Add 12 cm of thermal insulation stone wool		PVC framed, double glazing with low-e		Replacement with a new wooden door
	U-value	$U = 0.296 \text{ W/m}^2\text{K}$		$U = 0.313 \text{ W/m}^2\text{K}$				$U = 0.589 \text{ W/m}^2\text{K}$		$U = 0.284 \text{ W/m}^2\text{K}$		$U = 1.60 \text{ W/m}^2\text{K}$		$U = 2.60 \text{ W/m}^2\text{K}$	
Improvement 2 Advanced measures		Add 20 cm thermal insulation		Add 20 cm thermal insulation	N/A	N/A		Add 10 cm of thermal insulation		Add 12+8 cm of thermal insulation stone wool		PVC framed, triple glazing with low-e		Replacement with insulated door	
U-value	$U = 0.170 \text{ W/m}^2\text{K}$		$U = 0.176 \text{ W/m}^2\text{K}$				$U = 0.339 \text{ W/m}^2\text{K}$		$U = 0.180 \text{ W/m}^2\text{K}$		$U = 1.0 \text{ W/m}^2\text{K}$		$U = 1.50 \text{ W/m}^2\text{K}$		

1960-1969		Wall 1	Description	Wall 2	Description	Wall 3	Description	Floor	Description	Roof 1	Description	Windows	Description	Door	Description
	Existing		Plaster 2 cm, solid clay bricks 31 cm, plaster 2cm	N/A	N/A	N/A	N/A		Wooden planks, air space/timber construction beams, straw plaster		Wooden planks, air space/timber construction beams, straw plaster		Wooden double framed, single grazing		Wooden door
	U-value	$U = 1.45 \text{ W/m}^2\text{K}$						$U = 1.36\text{W/m}^2\text{K}$		$U = 1.61 \text{ W/m}^2\text{K}$		$U = 4.80 \text{ W/m}^2\text{K}$		$U = 3.50 \text{ W/m}^2\text{K}$	
	Improvement 1 Optimal measures		Add 10 cm thermal insulation	N/A	N/A	N/A	N/A		Add 10 cm of thermal insulation		Add 12 cm of thermal insulation stone wool		PVC framed, double glazing with low-e		Replacement with a new wooden door
	U-value	$U = 0.313 \text{ W/m}^2\text{K}$						$U = 0.336\text{W/m}^2\text{K}$		$U = 0.284\text{W/m}^2\text{K}$		$U = 1.60 \text{ W/m}^2\text{K}$		$U = 2.60 \text{ W/m}^2\text{K}$	
Improvement 2 Advanced measures		Add 20 cm thermal insulation	N/A	N/A	N/A	N/A		Add 16+4 cm of thermal insulation stone wool		Add 12+8 cm of thermal insulation stone wool		PVC framed, triple glazing with low-e		Replacement with insulated door	
U-value	$U = 0.176 \text{ W/m}^2\text{K}$						$U = 0.174 \text{ W/m}^2\text{K}$		$U = 0.180 \text{ W/m}^2\text{K}$		$U = 1.0 \text{ W/m}^2\text{K}$		$U = 1.50 \text{ W/m}^2\text{K}$		
	Existing		Plaster 2 cm, solid clay bricks 31 cm, plaster 2cm		Plaster 2 cm, clay bricks 25 cm, air gap, clay bricks 25 cm, plaster 2cm	N/A	N/A		Wooden planks 2.4 cm, concrete 10cm + concrete 10 cm.		Wooden planks 1.5cm, timber beams 16/14cm, straw plaster		Wooden double framed, single grazing		Wooden door
	U-value	$U = 1.45 \text{ W/m}^2\text{K}$		$U = 0.865\text{W/m}^2\text{K}$				$U = 2.105 \text{ W/m}^2\text{K}$		$U = 1.61 \text{ W/m}^2\text{K}$		$U = 4.80 \text{ W/m}^2\text{K}$		$U = 3.50 \text{ W/m}^2\text{K}$	
	Improvement 1 Optimal measures		Add 10 cm thermal insulation		No improvements	N/A	N/A		Add 5 cm thermal insulation		Add 12 cm thermal insulation		PVC framed, double glazing with low-e		Replacement with a new wooden door
	U-value	$U = 0.313 \text{ W/m}^2\text{K}$		$U = 0.865\text{W/m}^2\text{K}$				$U = 0.580 \text{ W/m}^2\text{K}$		$U = 0.284 \text{ W/m}^2\text{K}$		$U = 1.60 \text{ W/m}^2\text{K}$		$U = 2.60 \text{ W/m}^2\text{K}$	
Improvement 2 Advanced measures		Add 20 cm thermal insulation		No improvements	N/A	N/A		Add 10 cm thermal insulation		Add 12+8 cm thermal insulation		PVC framed, triple glazing with low-e		Replacement with insulated door	
U-value	$U = 0.176 \text{ W/m}^2\text{K}$		$U = 0.438 \text{ W/m}^2\text{K}$				$U = 0.336 \text{ W/m}^2\text{K}$		$U = 0.180 \text{ W/m}^2\text{K}$		$U = 1.00 \text{ W/m}^2\text{K}$		$U = 1.50 \text{ W/m}^2\text{K}$		
	Existing		Plaster 2 cm, solid clay bricks 31 cm, plaster 2cm	N/A	N/A	N/A	N/A		Wooden planks 2.0cm, concrete 5cm, concrete 10cm.		Plaster 2cm, Reinforced concrete 20cm,		Wooden double framed, single grazing		Wooden door
	U-value	$U = 1.45 \text{ W/m}^2\text{K}$						$U = 2.561 \text{ W/m}^2\text{K}$		$U = 4.073 \text{ W/m}^2\text{K}$		$U = 4.80 \text{ W/m}^2\text{K}$		$U = 3.50 \text{ W/m}^2\text{K}$	
	Improvement 1 Optimal measures		Add 10 cm thermal insulation	N/A	N/A	N/A	N/A		Add 5 cm thermal insulation		Add 12 cm thermal insulation		PVC framed, double glazing with low-e		Replacement with a new wooden door
	U-value	$U = 0.313 \text{ W/m}^2\text{K}$						$U = 0.610 \text{ W/m}^2\text{K}$		$U = 0.294 \text{ W/m}^2\text{K}$		$U = 1.60$		$U = 2.60 \text{ W/m}^2\text{K}$	
Improvement 2 Advanced measures		Add 20 cm thermal insulation	N/A	N/A	N/A	N/A		Add 10 cm thermal insulation		Add 20 cm thermal insulation		PVC framed, triple glazing with low-e		Replacement with insulated door	
U-value	$U = 0.176 \text{ W/m}^2\text{K}$						$U = 0.346 \text{ W/m}^2\text{K}$		$U = 0.180 \text{ W/m}^2\text{K}$		$U = 1.00 \text{ W/m}^2\text{K}$		$U = 1.50 \text{ W/m}^2\text{K}$		

AB 1960-1969	Existing		Plaster 2 cm, solid clay bricks 25 cm, plaster 2cm	N/A	N/A	N/A	N/A		Parquet 2.5 cm, concrete 5cm, wooden fiber panel 2cm, reinforced concrete 20 cm, plaster 2cm		Add 20 cm thermal insulation		Wooden double framed, single glazing		Metal door with glazing		
	U-value	U = 1.352 W/m²K						U = 1.357 W/m²K			U = 4.073 W/m²K			U = 4.80 W/m²K		U = 5.60 W/m²K	
	Improvement 1 Optimal measures		Add 10 cm thermal insulation	N/A	N/A	N/A	N/A		Add 10 cm thermal insulation		Add 12 cm thermal insulation		PVC framed, double glazing with low-e		Replacement with a new aluminum door		
	U-value	U = 0.309W/m2K						U = 0.285 W/m²K			U = 0.294 W/m²K			U = 1.60 W/m²K		U = 2.60 W/m²K	
	Improvement 2 Advanced measures		Add 20 cm thermal insulation	N/A	N/A	N/A	N/A		Add 20 cm thermal insulation		Add 20 cm thermal insulation		PVC framed, triple glazing with low-e		Replacement with insulated door		
U-value	U = 0.174 W/m²K						U = 0.170 W/m²K			U = 0.180 W/m²K			U = 1.00 W/m²K		U = 1.50 W/m²K		
1970-1979		Wall 1	Description	Wall 2	Description	Wall 3	Description	Floor	Description	Roof 1	Description	Windows	Description	Door	Description		
SFH 1970-1979	Existing		Plaster 2 cm, clay blocks 25 cm, plaster 2cm		Plaster 2 cm, clay blocks 25 cm, 10 cm natural stone	N/A	N/A		Parquet 2.5 cm, concrete 5cm, wooden fiber panel 2cm, reinforced concrete 20 cm		Reinforced concrete with hollow clay infill block 20 cm		Wooden double framed, single glazing		Wooden door		
	U-value	U = 1.577 W/m²K			U = 1.536 W/m²K			U = 1.73 W/m²K			U = 1.919 W/m²K			U = 4.80 W/m²K		U = 3.50 W/m²K	
	Improvement 1 Optimal measures		Add 10 cm thermal insulation		Add 10 cm thermal insulation	N/A	N/A		Add 5 cm thermal insulation		Add 12 cm thermal insulation		PVC framed, double glazing with low-e		Replacement with a new wooden door		
	U-value	U = 0.319 W/m²K			U = 0.314 W/m²K			U = 0.547 W/m²K			U = 0.282 W/m²K			U = 1.60 W/m²K		U = 2.60 W/m²K	
	Improvement 2 Advanced measures		Add 20 cm thermal insulation		Add 20 cm thermal insulation	N/A	N/A		Add 10 cm thermal insulation		Add 20 cm thermal insulation		PVC framed, triple glazing with low-e		Replacement with insulated door		
U-value	U = 0.177 W/m²K			U = 0.177 W/m²K			U = 0.316 W/m²K			U = 0.180 W/m²K			U = 1.00 W/m²K		U = 1.50 W/m²K		
TH 1970-1979	Existing		Plaster 2 cm, clay blocks 25 cm, plaster 2cm		Plaster 2 cm, clay blocks 25 cm, air gap, clay block 25 cm, plaster 2cm	N/A	N/A		Parquet 2.5cm, concrete 5 cm, waterproof layer, reinf. Concrete 20 cm.		Lime plaster 2cm, Reinforced concrete with hollow clay infill block 20 cm		Wooden double framed, single glazing		Wooden door		
	U-value	U = 1.577 W/m²K			U = 0.785 W/m²K			U = 1.818 W/m²K			U = 1.919 W/m²K			U = 4.80 W/m²K		U = 3.50 W/m²K	
	Improvement 1 Optimal measures		Add 10 cm thermal insulation		No improvements	N/A	N/A		Add 5 cm thermal insulation		Add 12 cm thermal insulation		PVC framed, double glazing with low-e		Replacement with a new wooden door		
	U-value	U = 0.319 W/m²K			U = 0.785 W/m²K			U = 0.556 W/m²K			U = 0.284 W/m²K			U = 1.60 W/m²K		U = 2.60 W/m²K	
	Improvement 2 Advanced measures		Add 20 cm thermal insulation		No improvements	N/A	N/A		Add 10 cm thermal insulation		Add 20 cm thermal insulation		PVC framed, triple glazing with low-e		Replacement with insulated door		
U-value	U = 0.177 W/m²K			U = 0.785 W/m²K			U = 0.328 W/m²K			U = 0.180 W/m²K			U = 1.0 W/m²K		U = 1.50 W/m²K		

MFH 1970-1979	Existing		Lime-plaster 2 cm, clay block 19 cm, mineral wool 3cm, clay brick 12cm		Plaster 2 cm, solid clay bricks 25 cm, plaster 2cm	N/A	N/A		Parquet 2 cm, concrete 5cm, EPS 4cm, cm, reinforced concrete 15 cm		Concrete tiles 4cm, sand 2cm, waterproof layer, perlite-concrete 5-15 cm, PVS foil, EPS 5cm, Reinforced		Wooden framed, double glazing		Metal door with glazing
	U-value	$U = 0.737 \text{ W/m}^2\text{K}$		$U = 1.754 \text{ W/m}^2\text{K}$				$U = 0.706 \text{ W/m}^2\text{K}$		$U = 0.632 \text{ W/m}^2\text{K}$		$U = 2.60 \text{ W/m}^2\text{K}$		$U = 5.60 \text{ W/m}^2\text{K}$	
	Improvement 1 Optimal measures		Add 12 cm thermal insulation		Add 10 cm thermal insulation	N/A	N/A		No improvements		Remove perlite & EPS/ add 12 cm thermal insulation		PVC framed, double glazing with low-e		Replacement with a new aluminum door
	U-value	$U = 0.298 \text{ W/m}^2\text{K}$		$U = 0.326 \text{ W/m}^2\text{K}$				$U = 0.706 \text{ W/m}^2\text{K}$		$U = 0.30 \text{ W/m}^2\text{K}$		$U = 1.60 \text{ W/m}^2\text{K}$		$U = 2.60 \text{ W/m}^2\text{K}$	
	Improvement 2 Advanced measures		Add 18 cm thermal insulation		Add 20 cm thermal insulation	N/A	N/A		Add 10 cm thermal insulation		Remove perlite & EPS/ add 20 cm thermal insulation		PVC framed, triple glazing with low-e		Replacement with insulated door
	U-value	$U = 0.176 \text{ W/m}^2\text{K}$		$U = 0.18 \text{ W/m}^2\text{K}$				$U = 0.343 \text{ W/m}^2\text{K}$		$U = 0.180 \text{ W/m}^2\text{K}$		$U = 1.0 \text{ W/m}^2\text{K}$		$U = 1.50 \text{ W/m}^2\text{K}$	
AB 1970-1979	Existing		Plaster 2 cm, reinf. Concrete 15 cm, thermal insulation 4 cm, clay brick 12cm.		Gypsum boards 8 cm, EPS 2cm, clay brick 12 cm.		Reinforced concrete 12 cm, EPS 4cm, air gap 1cm, reinf. concrete 7cm.		Ceramic tiles 1cm, concrete 4cm, EPS 1cm, reinf. Concrete 14cm, durisol 5cm		Reinf. Concrete 15cm, perlite concrete 4cm, XPS 4cm, concrete 3cm, gravel 5 cm.		Wooden framed, double glazing		Metal door with glazing
	U-value	$U = 0.677 \text{ W/m}^2\text{K}$		$U = 0.906 \text{ W/m}^2\text{K}$		$U = 1.01 \text{ W/m}^2\text{K}$		$U = 0.90 \text{ W/m}^2\text{K}$		$U = 0.763 \text{ W/m}^2\text{K}$		$U = 2.60 \text{ W/m}^2\text{K}$		$U = 5.60 \text{ W/m}^2\text{K}$	
	Improvement 1 Optimal measures		Add 6 cm thermal insulation		Add 8 cm thermal insulation		Add 8 cm thermal insulation		Add 10 cm thermal insulation		Add 12 cm thermal insulation		PVC framed, double glazing with low-e		Replacement with a new aluminum door
	U-value	$U = 0.318 \text{ W/m}^2\text{K}$		$U = 0.301 \text{ W/m}^2\text{K}$		$U = 0.312 \text{ W/m}^2\text{K}$		$U = 0.344 \text{ W/m}^2\text{K}$		$U = 0.293 \text{ W/m}^2\text{K}$		$U = 1.60 \text{ W/m}^2\text{K}$		$U = 2.60 \text{ W/m}^2\text{K}$	
	Improvement 2 Advanced measures		Add 16 cm thermal insulation		Add 16 cm thermal insulation		Add 18 cm thermal insulation		Add 20 cm thermal insulation		Add 20 cm thermal insulation		PVC framed, triple glazing with low-e		Replacement with insulated door
	U-value	$U = 0.169 \text{ W/m}^2\text{K}$		$U = 0.169 \text{ W/m}^2\text{K}$		$U = 0.167 \text{ W/m}^2\text{K}$		$U = 0.185 \text{ W/m}^2\text{K}$		$U = 0.176 \text{ W/m}^2\text{K}$		$U = 1.0 \text{ W/m}^2\text{K}$		$U = 1.50 \text{ W/m}^2\text{K}$	
1980-1999	Wall 1	Description	Wall 2	Description	Wall 3	Description	Floor	Description	Roof 1	Description	Windows	Description	Door	Description	
SFH 1980-1999	Existing		Plaster 2 cm, clay blocks 25 cm, plaster 2cm	N/A	N/A	N/A	N/A		Parquet 2.5cm, concrete 5 cm, waterproof layer, reinf. Concrete 20 cm.		Reinforced concrete with hollow clay infill block 21cm, Lime plaster 2cm		Wooden framed, double glazing		Wooden door
	U-value	$U = 1.31 \text{ W/m}^2\text{K}$						$U = 3.27 \text{ W/m}^2\text{K}$		$U = 1.919 \text{ W/m}^2\text{K}$		$U = 2.6 \text{ W/m}^2\text{K}$		$U = 3.50 \text{ W/m}^2\text{K}$	
	Improvement 1 Optimal measures		Add 10 cm thermal insulation	N/A	N/A	N/A	N/A		Add 5 cm thermal insulation		Add 10 cm thermal insulation		PVC framed, double glazing with low-e		Replacement with a new wooden door
	U-value	$U = 0.306 \text{ W/m}^2\text{K}$						$U = 0.531 \text{ W/m}^2\text{K}$		$U = 0.282 \text{ W/m}^2\text{K}$		$U = 1.60 \text{ W/m}^2\text{K}$		$U = 2.60 \text{ W/m}^2\text{K}$	
	Improvement 2 Advanced measures		Add 20 cm thermal insulation	N/A	N/A	N/A	N/A		Add 10 cm thermal insulation		Add 20 cm thermal insulation		PVC framed, triple glazing with low-e		Replacement with insulated door
	U-value	$U = 0.174 \text{ W/m}^2\text{K}$						$U = 0.316 \text{ W/m}^2\text{K}$		$U = 0.180 \text{ W/m}^2\text{K}$		$U = 1.0 \text{ W/m}^2\text{K}$		$U = 1.50 \text{ W/m}^2\text{K}$	

TH 1980-1999	Existing		Plaster 2cm, clay block 25cm, mineral wool 5cm, clay brick 12cm.		Plaster 2 cm, clay blocks 25 cm, air gap, clay block 25 cm, plaster 2cm	N/A	N/A		Parquet 2.5cm, concrete 5 cm, waterproof layer, reinf. Concrete 20 cm.		Reinforced concrete with hollow clay infill block 21cm, Lime plaster 2cm		Wooden framed, double glazing		Wooden door	
	U-value	$U = 0.476 \text{ W/m}^2\text{K}$		$U = 0.785 \text{ W/m}^2\text{K}$				$U = 1.68 \text{ W/m}^2\text{K}$		$U = 1.919 \text{ W/m}^2\text{K}$		$U = 2.60 \text{ W/m}^2\text{K}$		$U = 3.50 \text{ W/m}^2\text{K}$		
	Improvement 1 Optimal measures		Add 5 cm thermal insulation		No improvements	N/A	N/A		Add 5 cm thermal insulation		Add 10 cm thermal insulation		PVC framed, double glazing with low-e		Replacement with a new wooden door	
	U-value	$U = 0.298 \text{ W/m}^2\text{K}$		$U = 0.785 \text{ W/m}^2\text{K}$				$U = 0.542 \text{ W/m}^2\text{K}$		$U = 0.282 \text{ W/m}^2\text{K}$		$U = 1.60 \text{ W/m}^2\text{K}$		$U = 2.60 \text{ W/m}^2\text{K}$		
	Improvement 2 Advanced measures		Add 15 cm thermal insulation		No improvements	N/A	N/A		Add 10 cm thermal insulation		Add 20 cm thermal insulation		PVC framed, triple glazing with low-e		Replacement with insulated door	
	U-value	$U = 0.171 \text{ W/m}^2\text{K}$		$U = 0.785 \text{ W/m}^2\text{K}$				$U = 0.323 \text{ W/m}^2\text{K}$		$U = 0.180 \text{ W/m}^2\text{K}$		$U = 1.0 \text{ W/m}^2\text{K}$		$U = 1.50 \text{ W/m}^2\text{K}$		
MFH 1980-1999	Existing		Plaster 2 cm, clay blocks 20 cm, plaster 2cm		Plaster 2cm, clay blocks 20cm, thermal insulation 5cm, air space, wooden planks 2 cm	N/A	N/A		Parquet 2.5cm, concrete 5cm, thermal insulation 4 cm reif. Concrete 20cm.		Gypsum board, timber beams/thermal insulation 5 cm, woodem planks		Wooden framed, double glazing		Metal door with glazing	
	U-value	$U = 1.47 \text{ W/m}^2\text{K}$		$U = 0.479 \text{ W/m}^2\text{K}$				$U = 0.588 \text{ W/m}^2\text{K}$		$U = 0.624 \text{ W/m}^2\text{K}$		$U = 2.60 \text{ W/m}^2\text{K}$		$U = 5.60 \text{ W/m}^2\text{K}$		
	Improvement 1 Optimal measures		Add 10 cm thermal insulation		Add 5 cm thermal insulation	N/A	N/A		Add 10 cm thermal insulation		Replace with 12 cm thermal		PVC framed, double glazing with low-e		Replacement with a new aluminum door	
	U-value	$U = 0.309 \text{ W/m}^2\text{K}$		$U = 0.294 \text{ W/m}^2\text{K}$				$U = 0.310 \text{ W/m}^2\text{K}$		$U = 0.298 \text{ W/m}^2\text{K}$		$U = 1.60 \text{ W/m}^2\text{K}$		$U = 2.60 \text{ W/m}^2\text{K}$		
	Improvement 2 Advanced measures		Add 20 cm thermal insulation		Add 15 cm thermal	N/A	N/A		Add 20 cm thermal insulation		Replace with 20 cm thermal		PVC framed, triple glazing with low-e		Replacement with insulated door	
	U-value	$U = 0.174 \text{ W/m}^2\text{K}$		$U = 0.176 \text{ W/m}^2\text{K}$				$U = 0.177 \text{ W/m}^2\text{K}$		$U = 0.178 \text{ W/m}^2\text{K}$		$U = 1.0 \text{ W/m}^2\text{K}$		$U = 1.50 \text{ W/m}^2\text{K}$		
	AB 1980-1999	Existing		Plaster 2cm, prefab. Reinf. Concrete 10cm, thermal insulation, prefab. Reinf.		Plaster, solid clay brick, plaster	N/A	N/A		Parquet 2.5cm, concrete 3.5cm, waterproof layer, reif. Concrete 20cm.		Gypsum board, timber beams/thermal insulation 5 cm, woodem planks		Wooden framed, double glazing		Metal door with glazing
		U-value	$U = 0.648 \text{ W/m}^2\text{K}$		$U = 2.0 \text{ W/m}^2\text{K}$				$U = 1.02 \text{ W/m}^2\text{K}$		$U = 0.58 \text{ W/m}^2\text{K}$		$U = 2.60 \text{ W/m}^2\text{K}$		$U = 5.60 \text{ W/m}^2\text{K}$	
Improvement 1 Optimal measures			Add 6 cm thermal insulation		No improvements	N/A	N/A		Add 10 cm thermal insulation		Replace with 12 cm thermal		PVC framed, double glazing with low-e		Replacement with a new aluminum door	
U-value		$U = 0.329 \text{ W/m}^2\text{K}$		$U = 2.0 \text{ W/m}^2\text{K}$				$U = 0.288 \text{ W/m}^2\text{K}$		$U = 0.287 \text{ W/m}^2\text{K}$		$U = 1.60 \text{ W/m}^2\text{K}$		$U = 2.60 \text{ W/m}^2\text{K}$		
	Improvement 2 Advanced measures		Add 15 cm thermal insulation		Add 5 cm thermal insulation	N/A	N/A		Add 20 cm thermal insulation		Replace with 20 cm thermal		PVC framed, triple glazing with low-e		Replacement with insulated door	
	U-value	$U = 0.180 \text{ W/m}^2\text{K}$		$U = 0.55 \text{ W/m}^2\text{K}$				$U = 0.167 \text{ W/m}^2\text{K}$		$U = 0.179 \text{ W/m}^2\text{K}$		$U = 1.0 \text{ W/m}^2\text{K}$		$U = 1.50 \text{ W/m}^2\text{K}$		

After 2000	Wall 1	Description	Wall 2	Description	Wall 3	Description	Floor	Description	Roof 1	Description	Windows	Description	Door	Description	
	Existing		Plaster 2 cm, clay blocks 25 cm, plaster 2cm, thermal insulation 10cm, finish layer 0.8cm.	N/A	N/A	N/A	N/A		Parquet 2.5cm, concrete 5 cm, waterproof layer, reinf. Concrete 20 cm, thermal insulation 10cm.		Plaster 2cm, reinforced concrete 20cm, Thermal insulation 10cm.		PVC framed, double glazing		Wooden door
	U-value	$U = 0.306 \text{ W/m}^2\text{K}$						$U = 0.338 \text{ W/m}^2\text{K}$		$U = 0.364 \text{ W/m}^2\text{K}$		$U = 2.50 \text{ W/m}^2\text{K}$		$U = 2.60 \text{ W/m}^2\text{K}$	
	Improvement 1 Optimal measures		No improvements	N/A	N/A	N/A	N/A		No improvements		No improvement		PVC framed, double glazing with low-e		No replacements
	U-value	$U = 0.306 \text{ W/m}^2\text{K}$						$U = 0.338 \text{ W/m}^2\text{K}$		$U = 0.364 \text{ W/m}^2\text{K}$		$U = 1.60 \text{ W/m}^2\text{K}$		$U = 2.60 \text{ W/m}^2\text{K}$	
Improvement 2 Advanced measures		Add 10 cm thermal insulation or replace with 20cm	N/A	N/A	N/A	N/A		No improvements		Add 10 cm thermal insulation + wooden planks or replace with 20cm		PVC framed, triple glazing with low-e		Replacement with insulated door	
U-value	$U = 0.177 \text{ W/m}^2\text{K}$						$U = 0.338 \text{ W/m}^2\text{K}$		$U = 0.180 \text{ W/m}^2\text{K}$		$U = 1.00 \text{ W/m}^2\text{K}$		$U = 1.50 \text{ W/m}^2\text{K}$		
	Existing		Plaster 2 cm, clay blocks 25 cm, plaster 2cm, thermal insulation 10cm, finish layer		Plaster 2 cm, clay blocks 20 cm, thermal insulation 5cm, clay block 20 cm, plaster 2cm	N/A	N/A		Parquet 2.5cm, concrete 5cm, thermal insulation 5 cm reif. Concrete 20cm.		Plaster 2cm, reinforced concrete 20cm, Thermal insulation 10cm.		PVC framed, double glazing		Wooden door
	U-value	$U = 0.306 \text{ W/m}^2\text{K}$			$U = 0.396 \text{ W/m}^2\text{K}$			$U = 0.556 \text{ W/m}^2\text{K}$		$U = 0.347 \text{ W/m}^2\text{K}$		$U = 2.50 \text{ W/m}^2\text{K}$		$U = 2.60 \text{ W/m}^2\text{K}$	
	Improvement 1 Optimal measures		No improvements		No improvements	N/A	N/A		No improvements		No improvement		PVC framed, double glazing with low-e		No improvements
	U-value	$U = 0.306 \text{ W/m}^2\text{K}$			$U = 0.396 \text{ W/m}^2\text{K}$			$U = 0.556 \text{ W/m}^2\text{K}$		$U = 0.347 \text{ W/m}^2\text{K}$		$U = 1.60 \text{ W/m}^2\text{K}$		$U = 2.60 \text{ W/m}^2\text{K}$	
Improvement 2 Advanced measures		Add 10 cm thermal insulation or replace with 20cm		No improvements	N/A	N/A		Add 10 cm thermal insulation		Add 10 cm thermal insulation + wooden planks or replace with 20cm		PVC framed, triple glazing with low-e		Replacement with insulated door	
U-value	$U = 0.177 \text{ W/m}^2\text{K}$			$U = 0.396 \text{ W/m}^2\text{K}$			$U = 0.328 \text{ W/m}^2\text{K}$		$U = 0.180 \text{ W/m}^2\text{K}$		$U = 1.00 \text{ W/m}^2\text{K}$		$U = 1.50 \text{ W/m}^2\text{K}$		
	Existing		Plaster 2 cm, clay blocks 25 cm, plaster 2cm, thermal insulation 5cm, finish layer		Plaster 2cm, clay blocks 20cm, thermal insulation 5cm, air space, wooden planks 2 cm		Plaster, clay block, plaster		Parquet 2.5cm, concrete 5cm, thermal insulation 4cm, Reinforced concrete with hollow clay infill		Gypsum board, timber beams/thermal insulation 5 cm, wooden planks		PVC framed, double glazing		PVC door
	U-value	$U = 0.57 \text{ W/m}^2\text{K}$			$U = 0.479 \text{ W/m}^2\text{K}$		$U = 1.59 \text{ W/m}^2\text{K}$	$U = 0.590 \text{ W/m}^2\text{K}$		$U = 0.624 \text{ W/m}^2\text{K}$		$U = 2.60 \text{ W/m}^2\text{K}$		$U = 2.60 \text{ W/m}^2\text{K}$	
	Improvement 1 Optimal measures		Replace with 10 cm		Add 5 cm thermal insulation		No improvements		No improvements		Replace with 12 cm thermal		PVC framed, double glazing with low-e		No improvements
	U-value	$U = 0.275 \text{ W/m}^2\text{K}$			$U = 0.294 \text{ W/m}^2\text{K}$		$U = 1.59 \text{ W/m}^2\text{K}$	$U = 0.590 \text{ W/m}^2\text{K}$		$U = 0.298 \text{ W/m}^2\text{K}$		$U = 1.60 \text{ W/m}^2\text{K}$		$U = 2.60 \text{ W/m}^2\text{K}$	
Improvement 2 Advanced measures		Replace with 20 cm		Add 15 cm thermal		Add 5 cm		Add 10 cm thermal		Replace with 20 cm thermal		PVC framed, triple glazing with low-e		Replacement with insulated door	
U-value	$U = 0.156 \text{ W/m}^2\text{K}$			$U = 0.176 \text{ W/m}^2\text{K}$		$U = 0.588 \text{ W/m}^2\text{K}$	$U = 0.255 \text{ W/m}^2\text{K}$		$U = 0.178 \text{ W/m}^2\text{K}$		$U = 1.00 \text{ W/m}^2\text{K}$		$U = 1.50 \text{ W/m}^2\text{K}$		

<p>AB 2000-2011</p>	Existing		Plaster 2cm, clay block of 25cm, thermal insulation 10cm, plaster 2cm		Plaster 2cm, clay blocks 20cm, thermal insulation 5cm, clay blocks 20cm, plaster 2cm	N/A	N/A		Parquet 2.5cm, concrete 5cm, reinf. concrete 20cm, thermal insulation 10cm,		Plaster 2cm, reinforced concrete 20cm, Thermal insulation 10cm.		PVC framed, double glazing with low-e		PVC door
	U-value	$U = 0.319 \text{ W/m}^2\text{K}$		$U = 0.396 \text{ W/m}^2\text{K}$		$U = 2.18 \text{ W/m}^2\text{K}$		$U = 0.312 \text{ W/m}^2\text{K}$		$U = 0.351 \text{ W/m}^2\text{K}$		$U = 1.50 \text{ W/m}^2\text{K}$		$U = 2.60 \text{ W/m}^2\text{K}$	
	Improvement 1 Optimal measures		No improvements		No improvement	N/A	N/A		No improvements		No improvement		No improvements		No improvements
	U-value	$U = 0.319 \text{ W/m}^2\text{K}$		$U = 0.396 \text{ W/m}^2\text{K}$				$U = 0.312 \text{ W/m}^2\text{K}$		$U = 0.351 \text{ W/m}^2\text{K}$		$U = 1.50 \text{ W/m}^2\text{K}$		$U = 2.60 \text{ W/m}^2\text{K}$	
	Improvement 2 Advanced measures		Add 10 cm thermal insulation or replace with 20cm		No improvement	N/A	N/A		Add 10 cm thermal insulation or replace with 20cm		Add 10 cm thermal insulation + wooden planks or replace with 20cm		PVC framed, triple glazing with low-e		Replacement with insulated door
	U-value	$U = 0.177 \text{ W/m}^2\text{K}$		$U = 0.396 \text{ W/m}^2\text{K}$				$U = 0.167 \text{ W/m}^2\text{K}$		$U = 0.180 \text{ W/m}^2\text{K}$		$U = 1.00 \text{ W/m}^2\text{K}$		$U = 1.50 \text{ W/m}^2\text{K}$	