



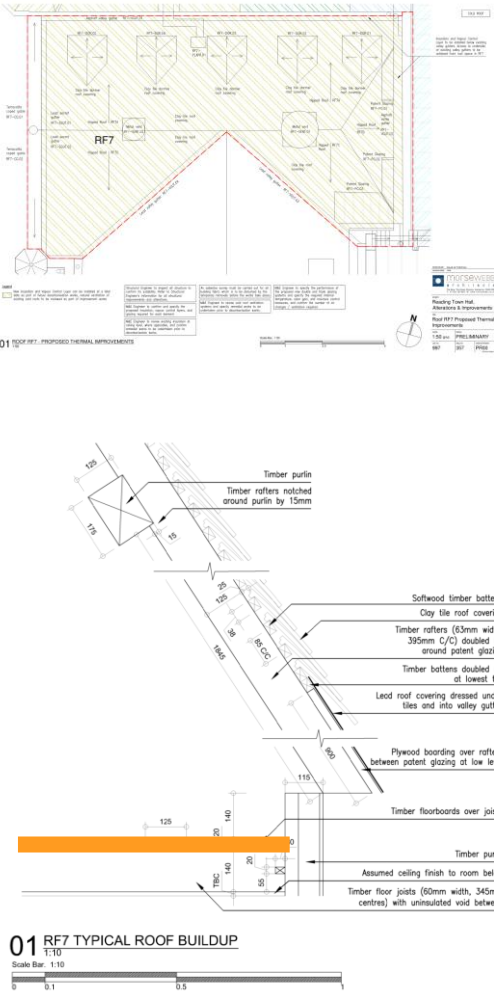
RTH: Roof Upgrade Discussion

01270 // 17.02.2026

Roof Upgrades Summary – Target – 0.245

Roof Element	Existing U-value	Proposed U-value	Improvement %	Comments
Roof 7	0.385	0.217	44%	Loft level insulation
Roof 8	0.402	0.214	47%	Loft level insulation
Roof 8 Flat	1.058	0.397	63%	Warm Roof
Roof 8 Glazed	5.200	1.00	80%	New thermally broken patent glazing system
Roof 9	-	-		As Roof 7
Roof 10	-	-		As Roof 7
Roof 11 Flat	0.290	0.283	3%	Same as existing roof height
Roof 11 Glazed	5.200	1.00	80%	New thermally broken patent glazing system
Roof 12	-	-		
Roof 13 Glazed	1.8	1.00	45%	New thermally broken patent glazing system
Roof 14	0.350	0.444	-26%	Warm Roof Existing insulation height unknown – Minimum insulation assumed
Roof 15	0.350	0.444	-26%	Warm Roof Existing insulation height unknown – Minimum insulation assumed
Roof 16	0.407	0.217	47%	Cold Roof
Roof 17	0.407	0.217	47%	Cold Roof
Roof 18	-	-		As Roof 7
Roof 19	-	-		As Roof 7
Roof 20	1.500	0.438	71%	Warm Roof
Roof 21	0.275	0.263	5%	Warm Roof Existing insulation height unknown – Minimum insulation assumed
Roof 22	-	-		As Roof 7

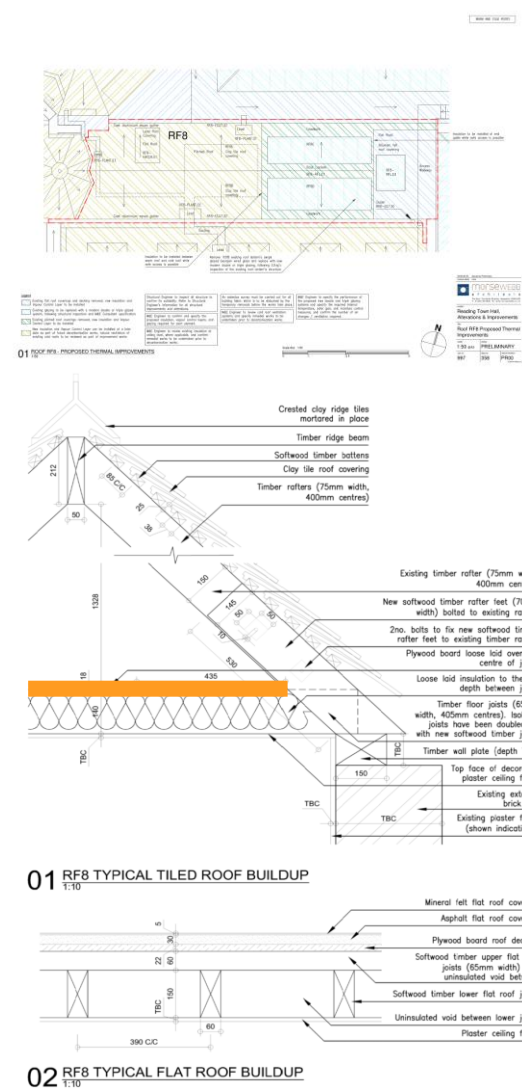




Description	RF7
Roof Type	WARM
Target U-Value (W/m².K)	0.245
Proposed Insulation	140mm Loft Insulation (≤0.035) Rockwool or similar https://www.rockwool.com/uk/products/flexi/
Proposed VCL	Surface Weight - 110g/m2 Vapour Resistance (Humidity Variable) – Sd 0.25- >25m Product – Intello Plus or similar intelligent membrane https://proclima.com/products/internal-sealing/intello-plus
Tapes	ProClima Tescon Vana https://www.ecologicalbuildingsystems.com/product/tescon-vana
Breather Membrane	-
Achieved U-value	0.217

Option 1

Description of building assembly					Assembly no.	
RF07					01ud	
Orientation of building assembly (or R_{si})		1-Roof	Interior insulation?			
Adjacent to (or R_{se})		3-Ventilated	U-value supplement [W/(m²K)]			
Area section 1	λ [W/(mK)]	Area section 2 (optional)	λ [W/(mK)]	Area section 3 (optional)	λ [W/(mK)]	Thickness [mm]
Plaster	0.600					13
Rockwool Flexi	0.035	Timber Joists	0.130			140
Rockwool Flexi	0.038					50
Plywood	0.130					20
Percentage of sec. 1:	83%	Percentage of sec. 2:	17.4%	Percentage of sec. 3:		
Heat transmission resistance coefficients					Total thickness [cm]: 22.3	
Interior R_{si} :		0.10	m²K/W		U-value [W/(m²K)]: 0.217	
Exterior R_{se} :		0.10	m²K/W			

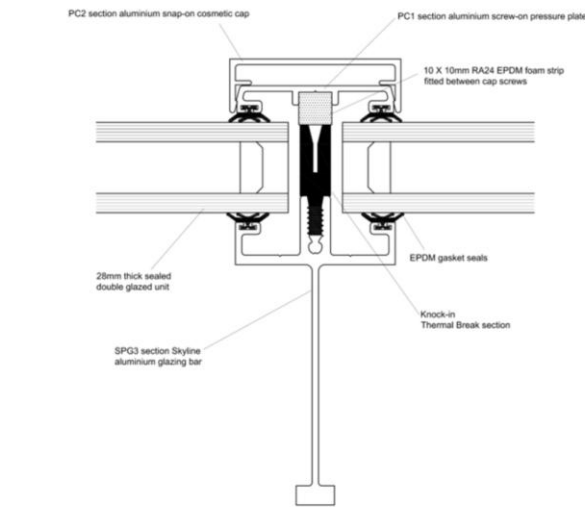


Description	RF8 – Tiled Roof
Roof Type	WARM
Target U-Value (W/m².K)	0.245
Proposed Insulation	140mm Loft Insulation (≤0.035) Rockwool or similar https://www.rockwool.com/uk/products/flexi/
Proposed VCL	Surface Weight - 110g/m2 Vapour Resistance (Humidity Variable) – Sd 0.25- >25m Product – Intello Plus or similar intelligent membrane https://proclima.com/products/internal-sealing/intello-plus
Tapes	ProClima Tescon Vana https://www.ecologicalbuildingsystems.com/product/tescon-vana
Breather Membrane	-
Achieved U-value	0.214

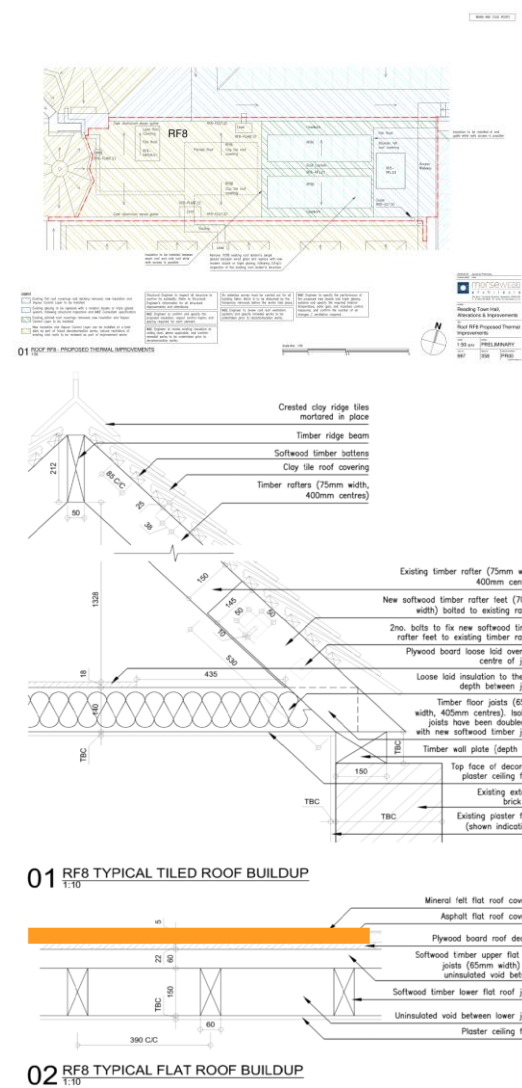
Option 1

Description of building assembly					Assembly no.	
RF08 - Tiled Roof					02ud	
Orientation of building assembly (or R_{si})		1-Roof	Interior insulation?			
Adjacent to (or R_{se})		3-Ventilated	U-value supplement [W/(m²K)]			
Area section 1	λ [W/(mK)]	Area section 2 (optional)	λ [W/(mK)]	Area section 3 (optional)	λ [W/(mK)]	Thickness [mm]
Plaster	0.600					13
Rockwool Flexi	0.035	Timber Joists	0.130			140
Rockwool Flexi	0.038					50
Plywood	0.130					20
Percentage of sec. 1:		84%	Percentage of sec. 2:		16.0%	Percentage of sec. 3:
Heat transmission resistance coefficients						
Interior R_{si} :		0.10	m²K/W		Total thickness [cm]: 22.3	
Exterior R_{se} :		0.10	m²K/W		U-value [W/(m²K)]: 0.214	

DGU Patent Glazing



- Condensation Risk Management:
- Thermally broken glazing bars
 - Warm edge spacers
 - Additional clip-on thermal pads (TBC)
 - Ventilation – 50-55% RH
 - High level supply of warm air



DescriptionRF8 – Flat Roof	
Roof Type	COLD
Target U-Value (W/m².K)	0.245
Proposed Insulation	Bauder foamglass https://www.bauder.co.uk/getcontentasset/81ec60df-c66b-41d7-ac30-c5d25f046977/7d6e2dfa-e012-4c99-925b-dc695a20fab7/bauderglas-roof-board-g2-t3-technical-data-sheet.pdf Bauder Mineral wool https://www.bauder.co.uk/getcontentasset/ed89e39f-e6ea-4606-a417-f5019cd08ee2/7d6e2dfa-e012-4c99-925b-dc695a20fab7/bauderrock-flatboard-insulation-technical-data-sheet.pdf
Proposed VCL	Bauder System
Tapes	Bauder System
Breather Membrane	-
Achieved U-value	0.397/0.423

Option 1

Description of building assembly						Assembly no.
RF08 - Flat Roof						03ud
Orientation of building assembly (or R _{si})		1-Roof		Interior insulation?		
Adjacent to (or R _{se})		1-Outdoor air		U-value supplement [W/(m²K)]		
Area section 1	λ [W/(mK)]	Area section 2 (optional)	λ [W/(mK)]	Area section 3 (optional)	λ [W/(mK)]	Thickness [mm]
Plaster	0.600					13
Unventilated Cavity	0.920	Timber Joists	0.130			140
Unventilated Cavity	0.370	Timber Joists	0.130			140
Plywoodboard decking	0.130					22
Bauder RockFlatboard	0.039					60
Percentage of sec. 1:	84%	Percentage of sec. 2:	16.0%	Percentage of sec. 3:		
Heat transmission resistance coefficients						Total thickness [cm]: 37.5
Interior R _{si} :		0.10	m²K/W			
Exterior R _{se} :		0.04	m²K/W			U-value [W/(m²K)]: 0.397

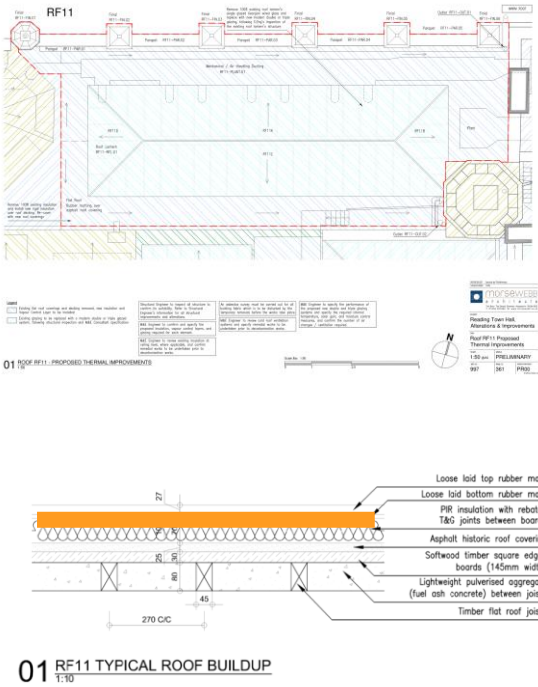
Option 2

Description of building assembly						Assembly no.
RF08 - Flat Roof						03ud
Orientation of building assembly (or R _{si})		1-Roof		Interior insulation?		
Adjacent to (or R _{se})		1-Outdoor air		U-value supplement [W/(m²K)]		
Area section 1	λ [W/(mK)]	Area section 2 (optional)	λ [W/(mK)]	Area section 3 (optional)	λ [W/(mK)]	Thickness [mm]
Plaster	0.600					13
Unventilated Cavity	0.920	Timber Joists	0.130			140
Unventilated Cavity	0.370	Timber Joists	0.130			140
Plywoodboard decking	0.130					22
Bauder GLAST3	0.036					50
Percentage of sec. 1:	84%	Percentage of sec. 2:	16.0%	Percentage of sec. 3:		
Heat transmission resistance coefficients						Total thickness [cm]: 36.5
Interior R _{si} :		0.10	m²K/W			
Exterior R _{se} :		0.04	m²K/W			U-value [W/(m²K)]: 0.423

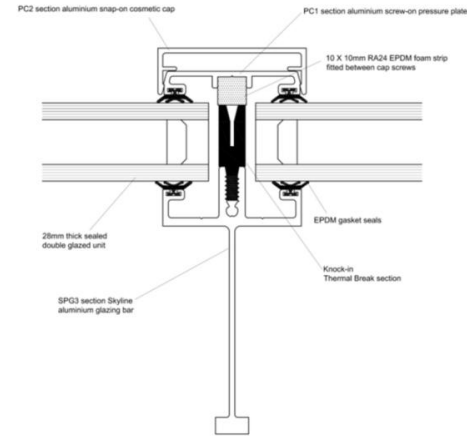


Proposal as per RF7

RF11



DGU Patent Glazing



DescriptionRF11 – Flat Roof	
Roof Type	COLD
Target U-Value (W/m².K)	0.245
Proposed Insulation	Bauder foamglass https://www.bauder.co.uk/getcontentasset/81ec60df-c66b-41d7-ac30-c5d25f046977/7d6e2dfa-e012-4c99-925b-dc695a20fab7/bauderglas-roof-board-g2-t3-technical-data-sheet.pdf Bauder Mineral wool https://www.bauder.co.uk/getcontentasset/ed89e39f-e6ea-4606-a417-f5019cd08ee2/7d6e2dfa-e012-4c99-925b-dc695a20fab7/bauderrock-flatboard-insulation-technical-data-sheet.pdf
Proposed VCL	Bauder System
Tapes	Bauder System
Breather Membrane	-
Achieved U-value	0.283/0.264

Condensation Risk Management:

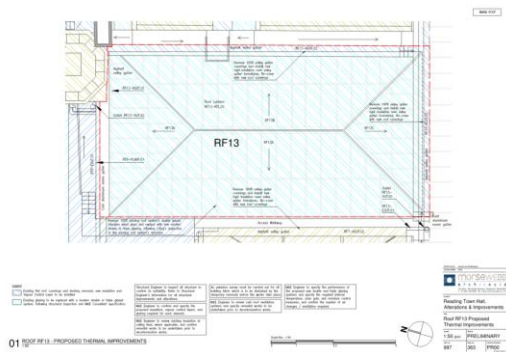
- Thermally broken glazing bars
- Warm edge spacers
- Additional clip-on thermal pads (TBC)
- Ventilation – 50-55% RH
- High level supply of warm air

Option 1

Description of building assembly						Assembly no.	
RF11						04ud	
Orientation of building assembly (or R_{si})		1-Roof		Interior insulation?			
Adjacent to (or R_{se})		1-Outdoor air		U-value supplement [W/(m²K)]			
Area section 1	λ [W/(mK)]	Area section 2 (optional)	λ [W/(mK)]	Area section 3 (optional)	λ [W/(mK)]	Thickness [mm]	
Concrete	2.100	Timber Joists	0.130			80	
Timber board	0.130					30	
Bauder RockFlatboard	0.039					120	
Bauder LiquiTOP						4	
Percentage of sec. 1:	83%	Percentage of sec. 2:	16.6%	Percentage of sec. 3:			
Heat transmission resistance coefficients						Total thickness [cm]:	
Interior R_{si} :		0.10	m²K/W		23.4		
Exterior R_{se} :		0.04	m²K/W		U-value [W/(m²K)]:		
						0.283	

Option 2

Description of building assembly					Assembly no.	
RF11					04ud	
Orientation of building assembly (or R _{si})		1-Roof		Interior insulation?		
Adjacent to (or R _{se})		1-Outdoor air		U-value supplement [W/(m²K)]		
Area section 1	λ [W/(mK)]	Area section 2 (optional)	λ [W/(mK)]	Area section 3 (optional)	λ [W/(mK)]	Thickness [mm]
Concrete	2.100	Timber Joists	0.130			80
Timber board	0.130					30
Bauder GlasT3	0.036					120
Bauder LiquiTOP system						4
Percentage of sec. 1:	83%	Percentage of sec. 2:	16.6%	Percentage of sec. 3:		
Heat transmission resistance coefficients				Total thickness [cm]:		
Interior R _{si} :	0.10	m²K/W		23.4		
Exterior R _{se} :	0.04	m²K/W		U-value [W/(m²K)]:		
				0.264		



Description	RF13 – Glazed Roof
Roof Type	COLD
Target U-Value (W/m².K)	1.40
Proposed Insulation	-
Proposed VCL	-
Tapes	-
Breather Membrane	-
Glazing	Heritage Patent Glazing (thermally broken frames)
Achieved U-value	0.10

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The Standard
Patent Glazing Company

Drg No.SD-1050< use this ref for downloading from the internet

Title : Skyline SPG3 type Glazing Bar Double Glazed (28mm)

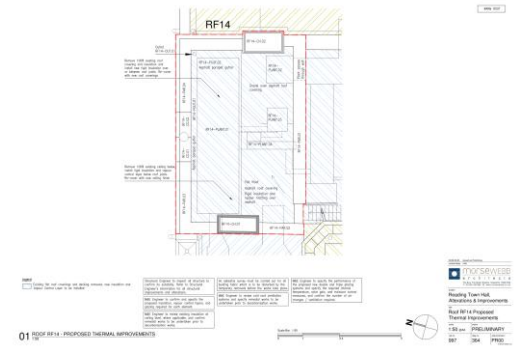
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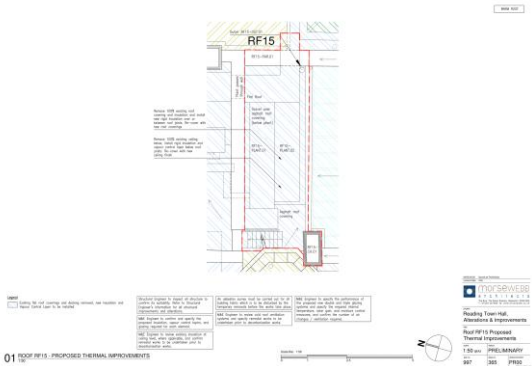
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- Condensation Risk Management:
- Thermally broken glazing bars
 - Warm edge spacers
 - Additional clip-on thermal pads (TBC)
 - Ventilation – 50-55% RH
 - High level supply of warm air

RF14 & 15



01 RF14 TYPICAL ROOF BUILDUP (SECTION)
1:10



01 RF15 TYPICAL ROOF BUILDUP
1:10

Description	RF14/15 – Flat Roof
Roof Type	COLD
Target U-Value (W/m².K)	0.245
Proposed Insulation	Bauder foamglass https://www.bauder.co.uk/getcontentasset/81ec60df-c66b-41d7-ac30-c5d25f046977/7d6e2dfa-e012-4c99-925b-dc695a20fab7/bauderglas-roof-board-g2-t3-technical-data-sheet.pdf Bauder Mineral wool https://www.bauder.co.uk/getcontentasset/ed89e39f-e6ea-4606-a417-f5019cd08ee2/7d6e2dfa-e012-4c99-925b-dc695a20fab7/bauderrock-flatboard-insulation-technical-data-sheet.pdf
Proposed VCL	Bauder System
Tapes	Bauder System
Breather Membrane	-
Achieved U-value	0.444/0.477

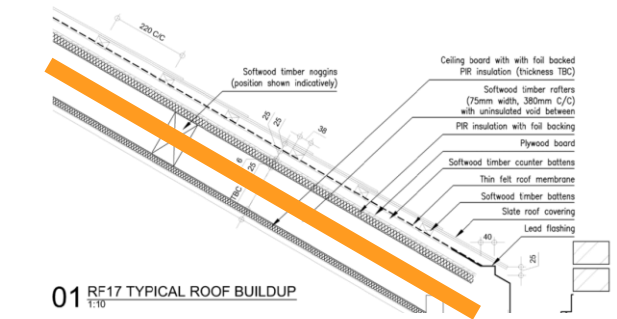
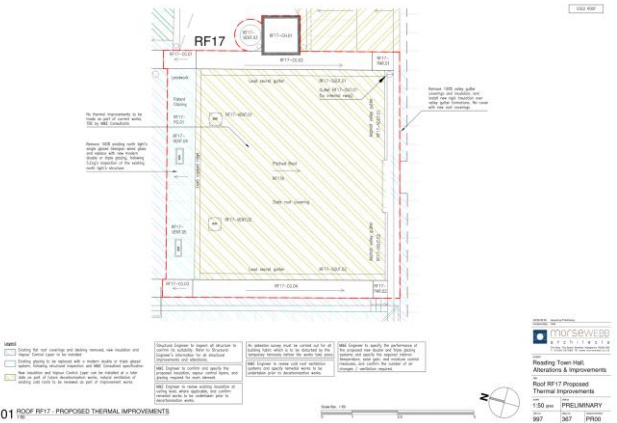
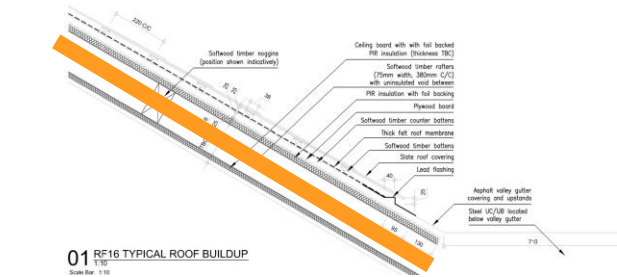
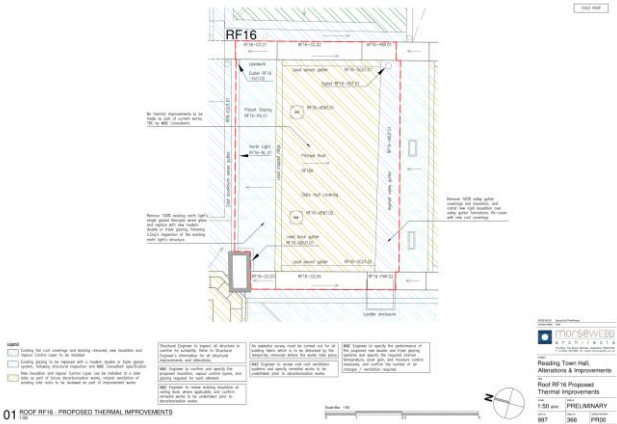
Option 1

Description of building assembly						Assembly no.	
RF14 & RF15						10ud	
Orientation of building assembly (or R _{si})		1-Roof		Interior insulation?			
Adjacent to (or R _{se})		1-Outdoor air		U-value supplement [W/(m²K)]			
Area section 1	λ [W/(mK)]	Area section 2 (optional)	λ [W/(mK)]	Area section 3 (optional)	λ [W/(mK)]	Thickness [mm]	
Plasterboard	0.250					13	
Unventilated	1.700	Timber Joists	0.130			277	
Timber board	0.130					30	
Bauder RockFlatboard	0.039					60	
Bauder LiquiTOP						4	
Percentage of sec. 1:		80%	Percentage of sec. 2:		19.7%	Percentage of sec. 3:	
Heat transmission resistance coefficients						Total thickness [cm]:	
Interior R _{si} :		0.10	m²K/W		38.4		
Exterior R _{se} :		0.04	m²K/W		U-value [W/(m²K)]:		
						0.444	

Option 2

Description of building assembly						Assembly no.	
RF14 & RF15						10ud	
Orientation of building assembly (or R _{si})		1-Roof		Interior insulation?			
Adjacent to (or R _{se})		1-Outdoor air		U-value supplement [W/(m²K)]			
Area section 1	λ [W/(mK)]	Area section 2 (optional)	λ [W/(mK)]	Area section 3 (optional)	λ [W/(mK)]	Thickness [mm]	
Plasterboard	0.250					13	
Unventilated	1.700	Timber Joists	0.130			277	
Timber board	0.130					30	
Bauder GLAST3	0.036					50	
Bauder LiquiTOP						4	
Percentage of sec. 1:	80%	Percentage of sec. 2:	19.7%	Percentage of sec. 3:			
Heat transmission resistance coefficients						Total thickness [cm]:	
Interior R _{si} :		0.10	m²K/W		37.4		
Exterior R _{se} :		0.04	m²K/W		U-value [W/(m²K)]:		
						0.477	

RF16 & RF17



Description	RF16/17
Roof Type	COLD
Target U-Value (W/m².K)	0.245
Proposed Insulation	140mm insulation in between the rafters Rockwool or similar https://www.rockwool.com/uk/products/flexi/ 60mm insulation on top or below the rafters https://www.rockwool.com/uk/products/hardrock-multi-fix-dd/
Proposed VCL	Surface Weight - 110g/m2 Vapour Resistance (Humidity Variable) – Sd 0.25- >25m Product – Intello Plus or similar intelligent membrane https://proclima.com/products/internal-sealing/intello-plus
Tapes	Pro Clima Tescon Vana https://www.ecologicalbuildingsystems.com/product/tescon-vana Pro Clima Contega Solido Exo https://www.ecologicalbuildingsystems.com/product/contega-solido-exo
Breather Membrane	Pro Clima Solitex Plus https://www.ecologicalbuildingsystems.com/product/solitex-plus
Achieved U-value	0.217

Option 1

Description of building assembly					Assembly no.
RG16					05ud
Orientation of building assembly (or R _{si})					1-Roof
Adjacent to (or R _{se})					3-Ventilated
Interior insulation?					
U-value supplement [W/(m²K)]					
Area section 1	λ [W/(mK)]	Area section 2 (optional)	λ [W/(mK)]	Area section 3 (optional)	λ [W/(mK)]
Plasterboard	0.250				
Rockwool Flexi	0.035	Timber Joists	0.130		
Hardrock Multi Fix DD	0.039				
Percentage of sec. 1:	80%	Percentage of sec. 2:	19.7%	Percentage of sec. 3:	

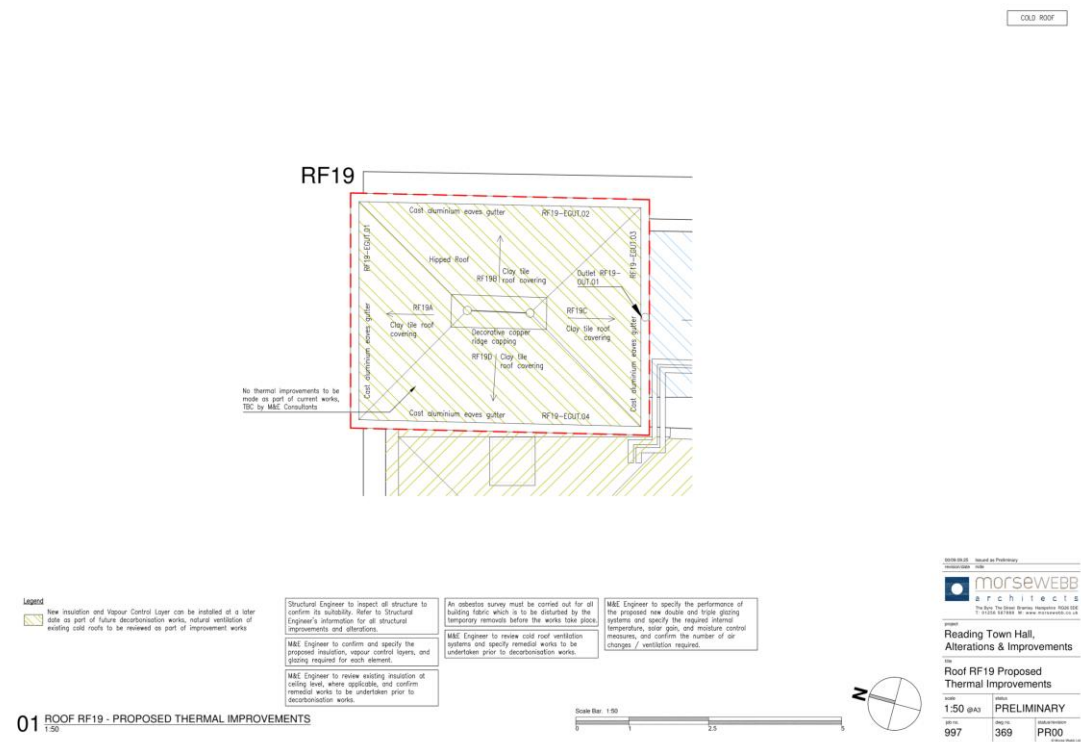
Heat transmission resistance coefficients

Interior R _{si} :	0.10	m²K/W
Exterior R _{se} :	0.10	m²K/W

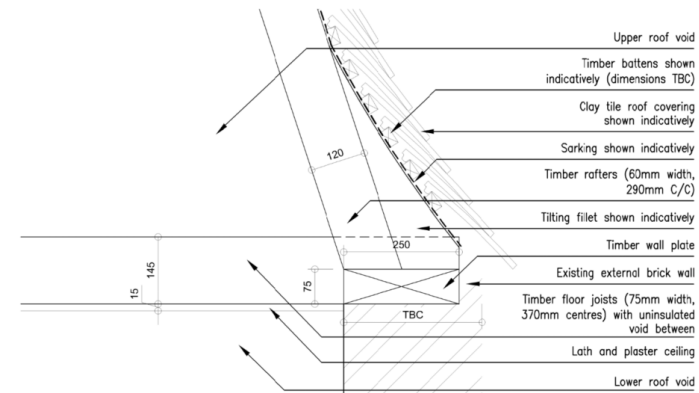
Total thickness [cm]: 21.3

U-value [W/(m²K)]: 0.217

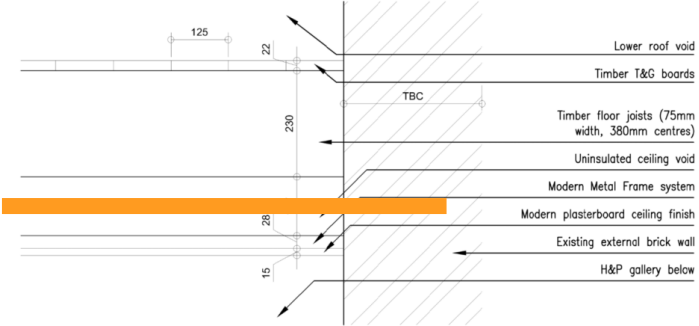




Proposal as per RF7

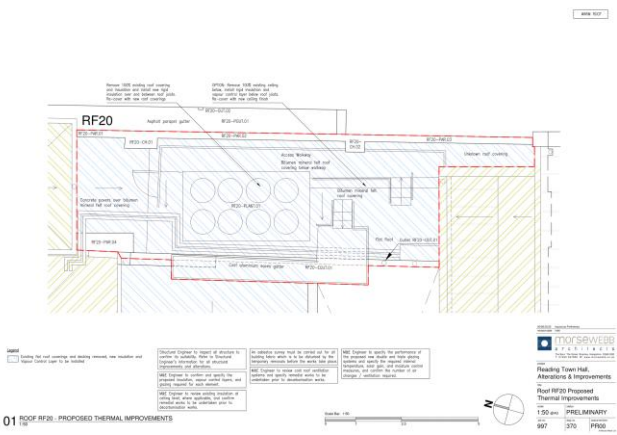


01 RF19 ROOF SPACE CEILING JOISTS AND ROOF RAFTERS

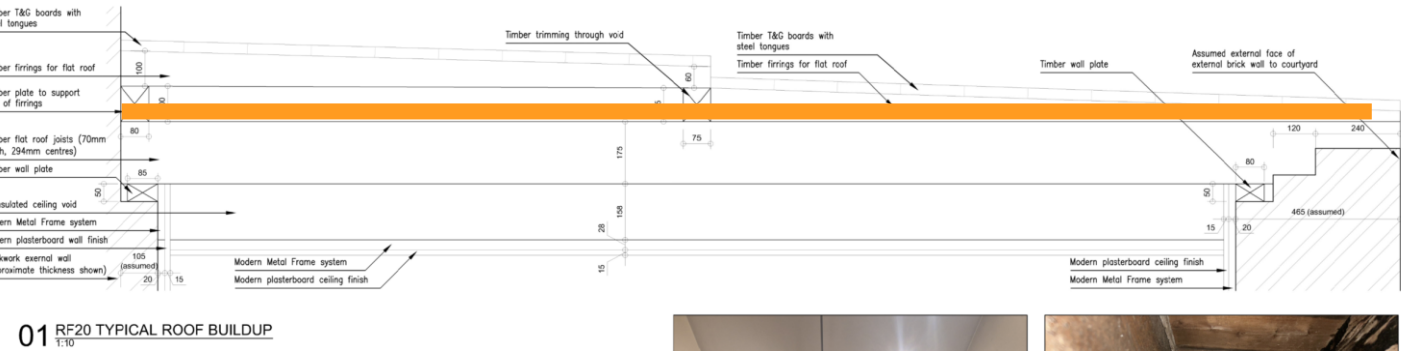


02 RF19 ROOF SPACE FLOOR BUILDUP

RF20



Description	RF20 – Flat Roof
Roof Type	COLD
Target U-Value (W/m².K)	0.245
Proposed Insulation	Bauder foamglass https://www.bauder.co.uk/getcontentasset/81ec60df-c66b-41d7-ac30-c5d25f046977/7d6e2dfa-e012-4c99-925b-dc695a20fab7/bauderglas-roof-board-g2-t3-technical-data-sheet.pdf Bauder Mineral wool https://www.bauder.co.uk/getcontentasset/ed89e39f-e6ea-4606-a417-f5019cd08ee2/7d6e2dfa-e012-4c99-925b-dc695a20fab7/bauderrock-flatboard-insulation-technical-data-sheet.pdf
Proposed VCL	Bauder System
Tapes	Bauder System
Breather Membrane	-
Achieved U-value	0.438/0.469

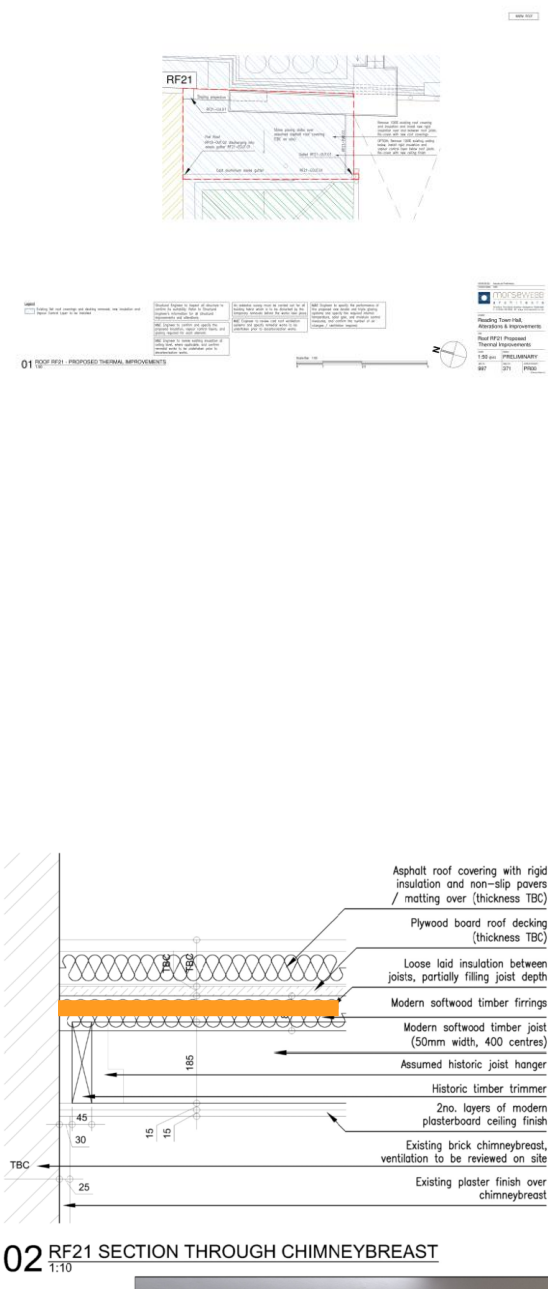


Option 1

Description of building assembly						Assembly no.	
RF20						07ud	
Orientation of building assembly (or R _{si})		1-Roof		Interior insulation?			
Adjacent to (or R _{se})		3-Ventilated		U-value supplement [W/(m²K)]			
Area section 1	λ [W/(mK)]	Area section 2 (optional)	λ [W/(mK)]	Area section 3 (optional)	λ [W/(mK)]	Thickness [mm]	
Plasterboard	0.250					15	
Unventilated cavity	1.890	timber joists	0.130			308	
Plywood	0.130					20	
Bauder Rockflatboard	0.039					60	
Percentage of sec. 1:	76%	Percentage of sec. 2:	23.8%	Percentage of sec. 3:			
Heat transmission resistance coefficients						Total thickness [cm]:	
Interior R _{si} :	0.10	m²K/W				40.3	
Exterior R _{se} :	0.10	m²K/W				U-value [W/(m²K)]:	
						0.438	

Option 2

Description of building assembly						Assembly no.	
RF20						07ud	
Orientation of building assembly (or R _{si})		1-Roof		Interior insulation?			
Adjacent to (or R _{se})		3-Ventilated		U-value supplement [W/(m²K)]			
Area section 1	λ [W/(mK)]	Area section 2 (optional)	λ [W/(mK)]	Area section 3 (optional)	λ [W/(mK)]	Thickness [mm]	
Plasterboard	0.250					15	
Unventilated cavity	1.890	timber joists	0.130			308	
Plywood	0.130					20	
Bauder GlasT3	0.036					50	
Percentage of sec. 1:	76%	Percentage of sec. 2:	23.8%	Percentage of sec. 3:			
Heat transmission resistance coefficients						Total thickness [cm]:	
Interior R _{si} :	0.10	m²K/W				39.3	
Exterior R _{se} :	0.10	m²K/W				U-value [W/(m²K)]:	
						0.469	



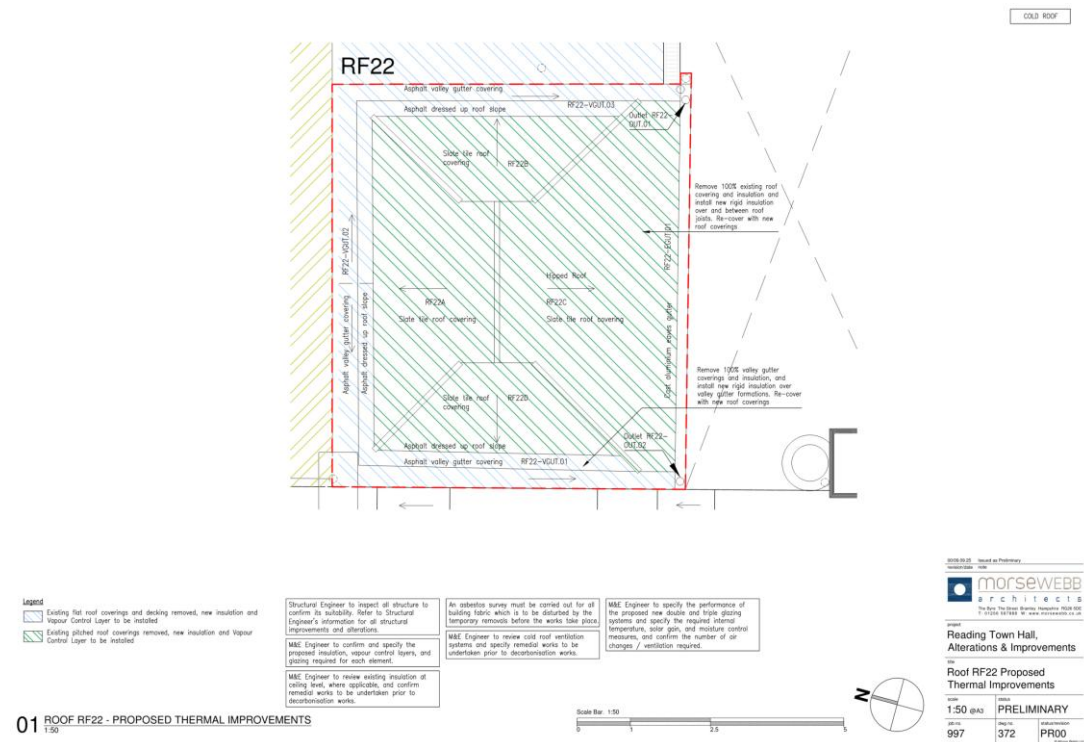
DescriptionRF21 – Flat Roof	
Roof Type	COLD
Target U-Value (W/m².K)	0.245
Proposed Insulation	Bauder foamglass https://www.bauder.co.uk/getcontentasset/81ec60df-c66b-41d7-ac30-c5d25f046977/7d6e2dfa-e012-4c99-925b-dc695a20fab7/bauderglas-roof-board-g2-t3-technical-data-sheet.pdf Bauder Mineral wool https://www.bauder.co.uk/getcontentasset/ed89e39f-e6ea-4606-a417-f5019cd08ee2/7d6e2dfa-e012-4c99-925b-dc695a20fab7/bauderrock-flatboard-insulation-technical-data-sheet.pdf
Proposed VCL	Bauder System
Tapes	Bauder System
Breather Membrane	-
Achieved U-value	0.263/0.247

Option 1

Description of building assembly						Assembly no.
RF21						08ud
Orientation of building assembly (or R _{si})		1-Roof	Interior insulation?			
Adjacent to (or R _{se})		1-Outdoor air	U-value supplement [W/(m²K)]			
Area section 1	λ [W/(mK)]	Area section 2 (optional)	λ [W/(mK)]	Area section 3 (optional)	λ [W/(mK)]	Thickness [mm]
Plasterboard	0.250					25
Unventilated Cavity	1.130	Timber Joists	0.130			185
Unventilated Cavity	0.490	Timber Joists	1.130			80
Plywood	0.130					20
Bauder Rockflatboard	0.039					120
Percentage of sec. 1:		100%	Percentage of sec. 2:	Percentage of sec. 3:		
Heat transmission resistance coefficients						Total thickness [cm]: 43.0
Interior R _{si} :		0.10	m²K/W			U-value [W/(m²K)]: 0.263
Exterior R _{se} :		0.04	m²K/W			

Option 2

Description of building assembly						Assembly no.
RF21						08ud
Orientation of building assembly (or R _{si})		1-Roof	Interior insulation?			
Adjacent to (or R _{se})		1-Outdoor air	U-value supplement [W/(m²K)]			
Area section 1	λ [W/(mK)]	Area section 2 (optional)	λ [W/(mK)]	Area section 3 (optional)	λ [W/(mK)]	Thickness [mm]
Plasterboard	0.250					25
Unventilated Cavity	1.130	Timber Joists	0.130			185
Unventilated Cavity	0.490	Timber Joists	1.130			80
Plywood	0.130					20
Bauder GlasT3	0.036					120
Percentage of sec. 1:		100%	Percentage of sec. 2:	Percentage of sec. 3:		
Heat transmission resistance coefficients						Total thickness [cm]: 43.0
Interior R _{si} :		0.10	m²K/W			U-value [W/(m²K)]: 0.247
Exterior R _{se} :		0.04	m²K/W			



Proposal as per RF7

