



# SPECIFICATION

## MCLA SPECIFICATION

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|---------------------|----------------------------------------------|
| Project Ref. /Name: | St. Kevin's College, Ballygall,<br>Dublin 11 |
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## Contents

|                                                          |          |
|----------------------------------------------------------|----------|
| <b>1.0 PROJECT INTRODUCTION.....</b>                     | <b>8</b> |
| SITE ADDRESS.....                                        | 10       |
| CLIENT.....                                              | 10       |
| ARCHITECT & PROJECT SUPERVISOR (DESIGN PROCESS) .....    | 10       |
| QUANTITY SURVEYOR .....                                  | 10       |
| MECHANICAL & ELECTRICAL (M&E) ENGINEER.....              | 10       |
| 2.0 PRELIMINARIES AND CONDITIONS OF CONTRACT .....       | 11       |
| SITE CONDITIONS / SITE SURVEY .....                      | 11       |
| PROJECT SUPERVISOR (CONSTRUCTION STAGE) .....            | 11       |
| PROJECT PHASING .....                                    | 11       |
| TIMES WHERE CONSTRUCTION CAN TAKE PLACE.....             | 11       |
| ACCESS & SECURITY .....                                  | 11       |
| HEALTH AND SAFETY .....                                  | 12       |
| SAFETY OFFICER .....                                     | 12       |
| TIME FOR COMPLETION .....                                | 12       |
| PRIME COST & PROVISIONAL SUMS .....                      | 12       |
| BUILDING REGULATIONS AND CONTROLS.....                   | 12       |
| EXTRA WORK.....                                          | 13       |
| RESPONSIBILITY .....                                     | 13       |
| INSPECTION .....                                         | 13       |
| INCLEMENT WEATHER .....                                  | 13       |
| PROVISIONS FOR TEMPORARY SEALING THE BUILDING.....       | 14       |
| CASE UP.....                                             | 14       |
| CLEAR AWAY .....                                         | 14       |
| CLEANING ON COMPLETION .....                             | 14       |
| ATTENDANCE.....                                          | 14       |
| PRICE SCHEDULE OF RATES .....                            | 14       |
| INSURANCE .....                                          | 14       |
| MASTER PROGRAMME .....                                   | 15       |
| CO-ORDINATION OF SITE WORKS .....                        | 15       |
| NOMINATED SUPPLIERS AND WINDOW - CONTRACTORS .....       | 15       |
| GENERAL ATTENDANCES .....                                | 15       |
| MAINTENANCE .....                                        | 16       |
| DAYWORKS .....                                           | 16       |
| TAX CLEARANCE AND VAT .....                              | 16       |
| COMPLIANCE & STANDARDS OF MATERIALS GENERALLY .....      | 16       |
| PLANT, TOOLS, SCAFFOLDING ETC.....                       | 17       |
| HOLIDAYS WITH PAY ETC.....                               | 17       |
| SAFEGUARDING THE WORKS .....                             | 17       |
| NOISE.....                                               | 17       |
| PROTECTION OF EXISTING SERVICES.....                     | 17       |
| WATER FOR THE WORKS.....                                 | 17       |
| LIGHTING AND POWER FOR THE WORKS .....                   | 18       |
| STORAGE OF MATERIALS .....                               | 18       |
| NEIGHBOURING PROPERTY .....                              | 18       |
| PROTECTING, DRYING, CLEANING AND TESTING THE WORKS ..... | 18       |

|                                                                               |           |
|-------------------------------------------------------------------------------|-----------|
| PROVIDE EVERYTHING NECESSARY .....                                            | 18        |
| DAMP & ROT .....                                                              | 19        |
| TIMBER MATERIALS .....                                                        | 19        |
| BUILDING SERVICES DATA EVIDENCE REQUIRED .....                                | 25        |
| ARCHITECTURAL DATA EVIDENCE REQUIRED .....                                    | 26        |
| O&M MANUAL REQUIREMENTS .....                                                 | 26        |
| <b>3.0 SCOPE OF WORKS.....</b>                                                | <b>29</b> |
| SUBSTITUTION OF PRODUCTS .....                                                | 29        |
| ROOF SYSTEM TECHNICAL SUBMITTAL REQUIREMENT.....                              | 29        |
| <b>1. SITE COMPOUND, FACILITIES &amp; AREA OF WORKS.....</b>                  | <b>30</b> |
| 1.1 – SITE COMPOUND / SITE ACCESS .....                                       | 30        |
| 1.2 - HOARDING AND SITE SEPERATION.....                                       | 30        |
| 1.3 - STORAGE OF MATERIALS & SAFEGUARDING THE WORKS.....                      | 31        |
| 1.4 - LOCATION OF SKIP WITH COMPOUND.....                                     | 31        |
| 1.5 - SITE OFFICES .....                                                      | 31        |
| 1.5.1 - GENERAL REQUIREMENTS                                                  | 31        |
| 1.5.2 - LOCATION & ACCESSIBILITY                                              | 31        |
| 1.5.3 - FACILITIES & SERVICES                                                 | 31        |
| 1.5.4 - MAINTENANCE & CLEANLINESS                                             | 32        |
| 1.5.5 - SECURITY                                                              | 32        |
| 1.6 – CONSTRUCTION SITE WELFARE FACILITIES .....                              | 32        |
| 1.6.1 - SHELTER AND ACCOMMODATION                                             | 32        |
| 1.6.2 - CHANGING ROOMS AND LOCKERS                                            | 32        |
| 1.6.3 - WASHING FACILITIES                                                    | 33        |
| 1.6.4 - TOILETS                                                               | 33        |
| 1.6.5 – MAINTENANCE AND USE OF WELFARE FACILITIES                             | 34        |
| 1.7 – INSTALLATION / ERECTION OF SCAFFOLDING .....                            | 34        |
| 1.7.1 - SCAFFOLDING SIGNAGE                                                   | 34        |
| 1.7.2 - ACCESS TO THE SCAFFOLD                                                | 34        |
| 1.7.3 - LADDER ACCESS                                                         | 34        |
| 1.7.4 - LOADING BAYS (SCAFFOLD LOADING PLATFORMS)                             | 35        |
| 1.7.5 – PROTECTION TO LIVE SCHOOL AREAS                                       | 36        |
| <b>2. SEQUENCING / PHASING OF WORK / PROTECTIONS– LIVE SCHOOL ENVIRONMENT</b> | <b>36</b> |
| 2.1 – DT PHASING PRINCIPLES .....                                             | 37        |
| 2.2 - APPROVALS (APPLY TO ALL PHASES) .....                                   | 37        |
| 2.3 - CO-ORDINATION OF SITE WORKS .....                                       | 38        |
| 2.4 - TIMES WHERE CONSTRUCTION CAN TAKE PLACE .....                           | 38        |
| 2.5 - INCLEMENT WEATHER & TEMPORARY SEALING THE BUILDING .....                | 38        |
| 2.6 - TIME FOR COMPLETION.....                                                | 38        |
| 2.7 - PROTECTION OF EXISTING BUILDING – INTERNAL FINISHES & SERVICES ...      | 39        |
| 2.8 - EXISTING SCHOOL SUPPLIES.....                                           | 40        |
| 2.9 - EXISTING LOOSE FURNITURE .....                                          | 41        |
| 2.10 – INTERNAL CLEANING.....                                                 | 41        |
| <b>3 . SITE FOREMAN .....</b>                                                 | <b>41</b> |
| <b>4 MINIMUM PERFORMANCE STANDARDS OF ROOF FINISHES. ....</b>                 | <b>42</b> |
| 4.1 - DoES ROOF DESIGN & CONSTRUCTION.....                                    | 42        |

|                                                                              |           |
|------------------------------------------------------------------------------|-----------|
| 4.2 - GENERAL PERFORMANCE REQUIREMENTS .....                                 | 42        |
| 4.3 - COMPLIANCE REQUIREMENTS .....                                          | 43        |
| 4.4 - GENERAL MAINTENANCE PROCEDURES .....                                   | 44        |
| 4.5 - MARINE / COASTAL EXPOSURE REQUIREMENTS – ROOF SYSTEMS .....            | 45        |
| <b>5 REMOVAL AND DISPOSAL OF EXISTING MATERIALS .....</b>                    | <b>45</b> |
| 5.1 – GENERAL REMOVALS .....                                                 | 45        |
| 5.2 - ROOF 1 REMOVALS .....                                                  | 46        |
| 5.3 - ROOF 2 REMOVALS .....                                                  | 47        |
| 5.4 - ROOF 3 REMOVALS .....                                                  | 48        |
| 5.5 - ROOF 3A REMOVALS .....                                                 | 49        |
| 5.6 - ROOF 4 REMOVALS .....                                                  | 49        |
| 5.7 - ROOF 5 REMOVALS .....                                                  | 50        |
| 5.8 - ROOF 5A REMOVALS .....                                                 | 51        |
| 5.9 - ROOF 6 REMOVALS .....                                                  | 52        |
| 5.10 - ROOF 7 REMOVALS .....                                                 | 53        |
| 5.11 - ROOF 7A REMOVALS .....                                                | 54        |
| 5.12 - ROOF 8 REMOVALS .....                                                 | 55        |
| 5.13 - ROOF 9 REMOVALS .....                                                 | 56        |
| 5.14 - INTERNAL REMOVALS / ALTERATIONS.....                                  | 56        |
| 5.15 – ASBESTOS REMOVAL .....                                                | 58        |
| 5.16 – CIVIL REMOVALS / ALTERATIONS.....                                     | 61        |
| 5.17 – EXISTING WOODWOOL ROOF SLAB .....                                     | 62        |
| <b>6 SOW SUMMARY – INSTALLATIONS .....</b>                                   | <b>63</b> |
| 6.1 - ROOF 1 INSTALLATION SUMMARY .....                                      | 63        |
| 6.2 - ROOF 2 INSTALLATION SUMMARY .....                                      | 64        |
| 6.3 - ROOF 3 & ROOF 3A INSTALLATION SUMMARY .....                            | 65        |
| 6.4 - ROOF 4 INSTALLATION SUMMARY .....                                      | 66        |
| 6.5 - ROOF 5 & ROOF 5A INSTALLATION SUMMARY .....                            | 67        |
| 6.6 - ROOF 6 INSTALLATION SUMMARY .....                                      | 67        |
| 6.7 - ROOF 7 & ROOF 7A INSTALLATION SUMMARY .....                            | 68        |
| 6.8 - ROOF 8 INSTALLATION SUMMARY .....                                      | 69        |
| 6.9 - ROOF 9 INSTALLATION SUMMARY .....                                      | 70        |
| <b>7. INSTALLATION OF WATERPROOFING SYSTEMS .....</b>                        | <b>71</b> |
| 7.1 – JN41-DESCRIPTION OF WORKS .....                                        | 71        |
| 7.2 – (110A)BUILT-UP REINFORCED BITUMEN MEMBRANE WARM DECK ROOF COVERING ..  | 73        |
| 7.3 – (110B) BUILT-UP REINFORCED BITUMEN MEMBRANE WARM DECK ROOF COVERING .. | 75        |
| 7.4 – (210) ROOF PERFORMANCE .....                                           | 77        |
| 7.5 – (230) INSULATION .....                                                 | 77        |
| 7.6 – (330) TIMBER TRIMS, ETC .....                                          | 77        |
| 7.7 – (331) PREFORMED METAL HARD EDGE INSULATION PROTECTION ANGLES .....     | 78        |
| 7.8 – (515) ADVERSE WEATHER.....                                             | 78        |
| 7.9 – (520) INCOMPLETE WORK.....                                             | 78        |
| 7.10 – (522) PROTECTION AND STORAGE OF MATERIALS .....                       | 78        |
| 7.11 - (560) GENERAL WORKMANSHIP REQUIREMENTS.....                           | 78        |
| 7.12 – (561) SITE INSPECTIONS .....                                          | 79        |
| 7.13 – (562) HEALTH & SAFETY INFORMATION – ROOFING WORK .....                | 79        |
| 7.14 - 610A) SUITABILITY OF SUBSTRATE .....                                  | 80        |
| 7.15 – (610C) SUITABILITY OF SUBSTRATE.....                                  | 81        |

|                                                                                 |            |
|---------------------------------------------------------------------------------|------------|
| 7.16 – (640) FIXING TIMBER TRIMS .....                                          | 83         |
| 7.17 – (641) INSTALLING PREFORMED METAL HARD EDGE INSULATION PROTECTION ANGLES  |            |
| 84                                                                              |            |
| 7.18 – (660A) APPLYING PRIMER .....                                             | 84         |
| 7.19 – (660B) APPLYING PRIMER .....                                             | 84         |
| 7.20 – (670D) LAYING AIR AND VAPOUR CONTROL LAYER .....                         | 85         |
| 7.21 – (670G) LAYING AIR AND VAPOUR CONTROL LAYER .....                         | 85         |
| 7.22 – (680G) LAYING WARM ROOF INSULATION - BAUDERPIR FA TAPERED - SINGLE/MULTI |            |
| LAYER.....                                                                      | 86         |
| 7.23 – (681B) INSTALLING WARM ROOF INSULATION (INSULATED UPSTANDS) .....        | 88         |
| 7.24 – (710) LAYING REINFORCED BITUMEN MEMBRANES GENERALLY.....                 | 88         |
| 7.25 – (747A) SELF-ADHESIVE BONDING OF REINFORCED BITUMEN UNDERLAYER.....       | 89         |
| 7.26 – (750A) LAYING MINERAL FACED REINFORCED BITUMEN TORCH-ON CAPPING SHEET -  |            |
| 'SAFE                                                                           | TO         |
| TORCH' ZONE                                                                     | 89         |
| 7.27 – (773) 'FLAME-FREE' & 'SAFE TO TORCH' ZONES - ALTERNATIVE MEMBRANES AND   |            |
| APPLICATION.....                                                                | 90         |
| 7.28 - HOT AIR WELDING EQUIPMENT .....                                          | 91         |
| 7.29 – (775) SKIRTINGS AND UPSTANDS.....                                        | 91         |
| 7.30 – (777) SECONDARY WEATHERING (PIPES, DUCTING etc.) .....                   | 94         |
| 7.31 – (784A) ROOF DRAINAGE OUTLETS .....                                       | 94         |
| 7.32 – (784E) ROOF DRAINAGE OUTLETS .....                                       | 95         |
| 7.33 – (784G) PARAPET EMERGENCY TELL-TALE OVERFLOW .....                        | 96         |
| 7.34 – (785) FIXING PERIMETER TRIMS.....                                        | 97         |
| 7.35 – (786) LIGHTNING CONDUCTOR CLIPS .....                                    | 98         |
| 7.36 – (863) DESIGNATED MAINTENANCE WALKWAYS .....                              | 98         |
| 7.37 – (910) INSPECTION .....                                                   | 98         |
| 7.38 – (J41/940) COMPLETION .....                                               | 99         |
| 7.39 – (950C) GUARANTEE .....                                                   | 99         |
| 7.40 - INSULATION OF UPSTANDS / PARAPETS.....                                   | 99         |
| 7.41 - RAINWATER OUTLETS .....                                                  | 99         |
| 7.42 – CHANGE IN LEVEL DETAIL .....                                             | 99         |
| 7.42.1 - STRUCTURE 100                                                          |            |
| 7.42.2 - SHEATHING BOARD 100                                                    |            |
| 7.42.3 - INSULATION (BETWEEN STUDS) 100                                         |            |
| 7.43 – DEFECTIVE WOODWOOL STRUCTURE & DECK REPLACEMENT .....                    | 100        |
| 7.43.1 – REPLACEMENT TIMBER STRUCTURE. 101                                      |            |
| 7.43.2 – REPLACEMENT SUBSTRATE / TIMBER DECK 101                                |            |
| <b>8. THERMAL DRYLINING OF WINDOW HEADS .....</b>                               | <b>101</b> |
| <b>9. INSTALLATION OF NEW ROOFLIGHTS .....</b>                                  | <b>102</b> |
| 9.1 – 1200 x 1200mm ELECTRICALLY OPERATED ROOFLIGHTS .....                      | 102        |
| 9.2 – 2400 x 1200mm ELECTRICALLY OPERATED ROOFLIGHTS .....                      | 103        |
| 9.3 - FLAT ROOF LIGHT BLINDS .....                                              | 104        |
| 9.4 - ROOFLIGHT UPSTANDS .....                                                  | 105        |
| 9.5 - ROOFLIGHT SHAFTS / INTERNAL LININGS.....                                  | 105        |
| <b>10. PERIMETER EDGE AND GABLE UPSTANDS .....</b>                              | <b>106</b> |
| 10.1 - STRUCTURE .....                                                          | 106        |
| 10.2 – STEEL SUPPORT POSTS.....                                                 | 107        |

|                                                                                  |            |
|----------------------------------------------------------------------------------|------------|
| 10.3 - INSULATION (BETWEEN STUDS).....                                           | 107        |
| 10.4 – SHEATHING BOARD .....                                                     | 107        |
| 10.5 – CLADDING FAÇADE SHEATHING BOARD.....                                      | 107        |
| 10.6 – ALUMINIUM FASCIA.....                                                     | 108        |
| <b>11. INSTALLATION OF NEW FASCIA / SOFFIT, CAPPINGS &amp; EXTERNAL CLADDING</b> | <b>108</b> |
| 11.1 - FASCIA SUBSTRATE .....                                                    | 108        |
| 11.2 - FASCIA .....                                                              | 108        |
| 11.3 - SOFFIT .....                                                              | 109        |
| 11.4 - ALUMINIUM CAPPINGS .....                                                  | 109        |
| 11.5 – FAÇADE CLADDING .....                                                     | 110        |
| <b>12.UPGRADE OF EXISTING SERVICE PENETRATIONS .....</b>                         | <b>111</b> |
| 12.1 –ROOF 1 SERVICE UPGRADES .....                                              | 111        |
| 12.2 –ROOF 2 SERVICE UPGRADES .....                                              | 111        |
| 12.3 –ROOF 4 SERVICE UPGRADES .....                                              | 112        |
| 12.4 –ROOF 6 SERVICE UPGRADES .....                                              | 112        |
| 12.5 –ROOF 8 SERVICE UPGRADES .....                                              | 112        |
| 12.6 – MECHANICAL VENT UPSTANDS .....                                            | 113        |
| 12.6.1 - STRUCTURE 113                                                           |            |
| 12.6.2 - INSULATION (BETWEEN STUDS) 113                                          |            |
| 12.6.3 – SHEATHING BOARD 113                                                     |            |
| <b>13.INSTALLATION OF NEW ABUTMENT FLASHINGS .....</b>                           | <b>114</b> |
| <b>14.PROPOSED FALL ARREST &amp; ROOF ACCESS SYSTEM.....</b>                     | <b>114</b> |
| 14.1 - FALL PREVENTION CABLE SYSTEM .....                                        | 114        |
| 14.2 - ROOF ACCESS LADDER SYSTEM .....                                           | 115        |
| 14.3 - ROOF ACCESS LADDER ACCESS POINTS.....                                     | 115        |
| <b>15.PROPOSED CLERESTOREY GLAZING UPGRADE .....</b>                             | <b>116</b> |
| 15.1 - PROPOSED CLERESTOREY GLAZING (U-Value 1.2 W/m²K) .....                    | 116        |
| 15.2 - PROPOSED CLERESTOREY MANUAL WINDERS .....                                 | 116        |
| 15.3 – CLERESTOREY WINDOW COLUMNS.....                                           | 117        |
| 15.4 – WINDOW SEALANTS .....                                                     | 117        |
| 15.5 - SUB CONSTRUCTION / RAISED CILL .....                                      | 118        |
| 15.5.1 - PROPOSED SUB-CONSTRUCTION 118                                           |            |
| 15.5.2 - STRUCTURE 118                                                           |            |
| 15.5.3 – STEEL SUPPORT POSTS 118                                                 |            |
| 15.5.4 - SHEATHING BOARD 118                                                     |            |
| 15.5.5 - INSULATION 118                                                          |            |
| 15.5.6 - INTERNAL THERMAL LINING 119                                             |            |
| 15.5.7 - AIRTIGHTNESS MEMBRANE, TAPES & SEALANTS. 119                            |            |
| 15.5.8 – SERVICE VOID & INTERNAL LINING 124                                      |            |
| 15.5.9 - INTERNAL PLASTER FINISH 124                                             |            |
| 15.6 - PROPOSED CILL.....                                                        | 125        |
| 15.7 – AIR-TIGHTNESS TAPES.....                                                  | 125        |
| 15.7.1 - INTERNAL MASTING TAPE 125                                               |            |
| 15.7.2 - AIRTIGHT TAPE SURFACE PRIMER 126                                        |            |
| 15.8 – ACOUSTIC / FIRE STOPPING.....                                             | 127        |
| 15.9 – WINDOW BOARD / LINERS .....                                               | 128        |
| 15.10 – INTERNAL PAINTING .....                                                  | 128        |

|                                                                |            |
|----------------------------------------------------------------|------------|
| 15.11 – INTERNAL BLINDS .....                                  | 129        |
| 15.11.1 – BLIND MATERIAL                                       | 129        |
| 15.11.2 – BLIND MOTOR                                          | 130        |
| 15.11.3 – BLIND CONTROL BOX                                    | 130        |
| <b>16. EXTERNAL DOWNPIPES.....</b>                             | <b>130</b> |
| 16.1 - ALUMASC AQUALINE OR EQUIVALENT ALUMINIUM DOWNPIPE ..... | 131        |
| 16.2 - ALUMASC AQUALINE OR EQUIVALENT EXECUTION CLAUSES.....   | 131        |
| 600 - PREPARATIONS .....                                       | 131        |
| 605 - INSTALLATIONS GENERALLY: .....                           | 132        |
| 610 - FIXING AND JOINTING GUTTERS: .....                       | 132        |
| 615 SETTING OUT EAVES GUTTERS – TO FALLS.....                  | 132        |
| 630 RAINWATER OUTLETS, ENSURE THAT: .....                      | 132        |
| 435 - FIXING PIPEWORK: .....                                   | 132        |
| 650 - JOINTING PIPEWORK/GUTTERS:.....                          | 133        |
| 675 - COATED PIPEWORK/GUTTERS: .....                           | 133        |
| 685 - IDENTIFICATION OF INTERNAL RAINWATER PIPEWORK: .....     | 133        |
| 690 ELECTRICAL CONTINUITY: .....                               | 133        |
| 700 ACCESS FOR TESTING AND MAINTENANCE: .....                  | 133        |
| COMPLETION CLAUSES .....                                       | 133        |
| 900 TESTING GENERALLY: .....                                   | 133        |
| 905 INTERNAL PIPEWORK TEST .....                               | 134        |
| 910 GUTTER TEST: .....                                         | 134        |
| 915 MAINTENANCE INSTRUCTIONS .....                             | 134        |
| 920 IMMEDIATELY BEFORE HANDOVER:.....                          | 134        |
| <b>17. LIGHTNING PROTECTION .....</b>                          | <b>134</b> |
| <b>18. PLANT ROOM ALTERATIONS.....</b>                         | <b>135</b> |
| 18.1 – ALTERATION OF PLANT ROOM CLADDING .....                 | 135        |
| 18.1.1 – GENERAL                                               | 135        |
| 18.1.2 – PRE-COMMENCEMENT                                      | 136        |
| 18.1.3 – REMOVAL AND STORAGE                                   | 136        |
| 18.1.4 – ALTERATION OF CLADDING HEIGHT                         | 136        |
| 18.1.5 – NEW PROFILED BASE RAIL                                | 137        |
| 18.1.6 – FIXINGS, SEALANTS AND CLOSURES                        | 137        |
| 18.1.7 – WEATHERING AND COORDINATION WITH ROOF UPSTAND         | 137        |
| 18.1.8 – WORKMANSHIP                                           | 137        |
| 18.1.9 – TEMPORARY WEATHER PROTECTION                          | 138        |
| 18.1.10 – MAKING GOOD                                          | 138        |
| 18.1.11 – QUALITY / ACCEPTANCE CRITERIA                        | 138        |
| 18.2 – ALTERATION OF PLANT ROOM UPSTAND .....                  | 138        |
| 18.2.1 – UPSTAND STRUCTURE                                     | 139        |
| 18.2.2 – UPSTAND SHEATHING BOARD                               | 139        |
| 18.2.3 – UPSTAND INSULATION                                    | 139        |
| 18.2.4 – UPSTAND WATERPROOFING                                 | 139        |
| 18.3 – PLANT ROOM DOOR.....                                    | 139        |
| 18.4 – UPGRADE OF PLANT ROOM ROOFS .....                       | 140        |
| <b>19. INTERNAL DOWNPIPES.....</b>                             | <b>140</b> |
| 19.1 - DOWNPIPE JETTING .....                                  | 140        |
| 19.2 - DOWNPIPE RODDING / INSPECTION EYE.....                  | 141        |

|                                                                            |            |
|----------------------------------------------------------------------------|------------|
| 19.3 – ACCESS HATCHES .....                                                | 141        |
| 19.4 - DOWNPIPE BOXING .....                                               | 141        |
| <b>20. PROPOSED FLOORING UPGRADES .....</b>                                | <b>141</b> |
| <b>21. PROPOSED INTERNAL CEILING UPGRADES .....</b>                        | <b>143</b> |
| 21.1 - CEILING TILES .....                                                 | 143        |
| 21.2 - EXPOSED GRID SYSTEM .....                                           | 143        |
| 21.3 – BULKHEADS .....                                                     | 144        |
| <b>22. M&amp;E SERVICE UPGRADES / ALTERATIONS .....</b>                    | <b>144</b> |
| 22.1 – LIGHTING UPGRADE .....                                              | 144        |
| 22.2 – LIFE SAFETY SYSTEMS .....                                           | 145        |
| 22.3 – ELECTRIC ROOFLIGHT & CLERESTOREY ACTUATORS .....                    | 145        |
| 22.4 – EXISTING SATELLITE DISH.....                                        | 145        |
| 22.5 – EXISTING PROJECTORS .....                                           | 145        |
| 22.6 – ELETRICAL CABLING / SERVICES .....                                  | 145        |
| 22.7 – MECHANICAL ROOF VENTS .....                                         | 146        |
| 22.8 - CERTIFICATION & RECORDS .....                                       | 146        |
| 22.9 - TESTING & COMMISSIONING – GENERAL .....                             | 146        |
| 22.10 - TESTING & COMMISSIONING –ROOFLIGHTS / ACTUATORS (FUNCTIONAL) ..... | 146        |
| 22.11 - HANDOVER .....                                                     | 147        |
| <b>23. CIVIL INSTALLATIONS / ALTERATIONS .....</b>                         | <b>147</b> |
| <b>24. EXTERNAL FAÇADE SIGNAGE.....</b>                                    | <b>150</b> |
| <b>4.0 - APPENDIX A .....</b>                                              | <b>151</b> |
| <b>MCLA SCHEDULE OF TENDER DOCUMENT&amp; DRAWINGS .....</b>                | <b>151</b> |

## 1.0 PROJECT INTRODUCTION

| Specification |                                           | Tender Purposes Only |
|---------------|-------------------------------------------|----------------------|
| At            | St. Kevin's College, Ballygall, Dublin 11 |                      |
| For           | BOM St. Kevin's College                   |                      |
| Project Ref:  | 26 07                                     |                      |
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This document has been prepared by MCLA and under the supervision and to the satisfaction of:  
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To whom the copyright of this document belongs.

This specification shall be read in conjunction with all drawings, details, schedules and other information issued by MCLA and works shall be carried out accordingly unless otherwise instructed. Note: All sections of specifications, schedules etc. to be adhered to and to be priced by section. The Contractor's attention is drawn to the description of works outlined in the Building Specification including Specification of Materials & Workmanship; the detailed requirements of the Drawings; Schedule of Works; other Schedule Information as applicable and any other such documents referred to by the Architect which must be carefully read before pricing. No extra cost for additional work will be allowed unless clearly outside the meaning or may not be reasonably inferred from the Drawings and Specification documents.

**NOTE: Prospective tenderers are required to visit the site prior to submitting their tender by arrangement with MCLA as a condition of tendering, in order to ensure that the full extent and scope of works required under the contract are understood. Evidence of prospective tenderers having visited the site will be required by signing a register on-site. This is to allay any doubts as to what works are required, in the interests of both the contracting authority and the selected tenderer ultimately charged with delivery of the scope of works. Any failure to observe this condition of tendering will result in the exclusion of the tenderer concerned.**

## INTRODUCTION

Proposed Roof Replacement / Upgrade together with associated works at St. Kevins's College, Ballygall, Dublin 11.

**ALL SPECIFIED PRODUCTS ARE TO BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURERS DETAIL AND INSTRUCTION. ANY VARIANCES BETWEEN ARCHITECTS, ENGINEERS AND MANUFACTURERS SPECIFICATION SHOULD BE HIGHLIGHTED AT TENDER STAGE AS PART OF TENDERING CONTRACTORS TENDER RETURN.**

Below mentioned clauses to be read together M&E Engineer drawings & specifications. Mechanical, electrical and structural items mentioned in this document shall be superseded by structural engineers & M&E consultants' specification where available.

Where the tenderer proposes substitution of a product of different manufacture to that specified, notification to the architect must be included in the **Returned tender submission**. The tenderer is bound to submit for verification documentary evidence that the alternative product is equivalent in respect of material, safety, reliability, function, compatibility with adjacent construction, availability of compatible accessories and, where relevant, certified English translations of any foreign language documents will be required. Any proposal for use of an alternative product must also include proposals for substitution of compatible accessory products and variation of details necessary, and before ordering products, provide revised drawings, specification and manufacturers guarantees as required by the architect.

**Wherever products are specified by proprietary name and the phrase "or equivalent" is not included, it is to be deemed included**

## SITE VISITS

All arrangements for visiting the site and any enquiries pertaining there to are to be made through:

MCLA  
Unit 4B, Elm House  
Millennium Park  
Naas, Co. Kildare.  
Tel: 045 854 900  
E: [info@mclarchitecture.ie](mailto:info@mclarchitecture.ie)

SITE ADDRESS

St. Kevin's College  
Ballygall Road East,  
Ballygall, Dublin 11,  
D11 VF10

CLIENT

BOM St. Kevin's College  
Eoghan Rooney - School Principal  
Tel: [info@stkevinscollege.com](mailto:info@stkevinscollege.com)  
E: 01 837 1423

ARCHITECT & PROJECT SUPERVISOR (DESIGN PROCESS)

MCLA, Unit 4B  
Elm House  
Millennium Park  
Naas, Co. Kildare.  
Tel: 045 854 900  
E: [info@mclarchitecture.ie](mailto:info@mclarchitecture.ie)

QUANTITY SURVEYOR

Lambert Surveyors  
Claregate Street,  
Kildare Town,  
Co. Kildare.  
Tel: 045 542698  
E: [mlambert@lambertsurveyors.com](mailto:mlambert@lambertsurveyors.com)

MECHANICAL & ELECTRICAL (M&E) ENGINEER

Galileo Energy Services  
Unit A6, M4 Business Park,  
Celbridge,  
Co. Kildare  
Tel: 01 6274103  
E: [office@galileoenergy.ie](mailto:office@galileoenergy.ie)

## 2.0 PRELIMINARIES AND CONDITIONS OF CONTRACT

### SITE CONDITIONS / SITE SURVEY

Tender parties shall visit the site and satisfy themselves as to all conditions under which the works will be executed particularly with regard to access, condition and Integrity of existing structures within the vicinity of the proposed works, quantity of materials necessary and any other matter which may affect this tender. No extra cost will be allowed in respect of items which would have been apparent or reasonably foreseeable during a proper site visit.

### PROJECT SUPERVISOR (CONSTRUCTION STAGE)

The role of Project Supervisor (Construction Stage) shall be undertaken by the main contractor for the duration of the contract. Alternatively, the successful tenderer may appoint a suitably qualified person or firm to act in this role on their behalf.

### PROJECT PHASING

Project phasing strategy to be included for proposed works with programme phasing / timing which will include access/ segregation/ noise/ access and compound areas.

Proposed works are within active school property, Refer to Architects drawings for provisional phasing layout.

Access to existing school building & phasing of works to existing building(s) to be agreed with client and architect for signed off and agreed prior to commencement of works.

Measures to be put in place to ensure safety of all students, teachers & visitors at all times including strict traffic management, access to site compound and health / safety regimes.

Date particulars to be set out in Articles of Agreement Contract with all parties involved.

### TIMES WHERE CONSTRUCTION CAN TAKE PLACE

**NOTE WORKS WILL BE CARRIED OUT WITHIN ACTIVE SCHOOL ENVIRONMENT SURROUNDING TEMPORARY COMPOUND & WORKS AREA, WORKS ARE TO BE CARRIED OUT BETWEEN 8.00 AND 17.30 FROM MONDAY TO FRIDAY AND SATURDAYS TO BE FROM 9.00 – 13.00**

Dates where works take place may be subject to minor revision prior to the successful appointment of the Contractor. Architect / Contractor to liaise prior to works commencing in order to agree a schedule prior to Contract Agreement.

### ACCESS & SECURITY

The chosen contractor is to liaise with Architect in order to agree a schedule of security and temporary access to the building. A plan of all the proposed routes included in the works should be agreed before commencement of works as the building is to remain fully functional in the regular working hours set out above.

The contractor is to note that at all times, access to and from the site is to be via the vehicular entrance/ exit to the rear of the site and pedestrian access via front public pathway. No access will be available or permitted via adjoining properties. The contractor will indemnify the employer against any damage or loss to the adjoining buildings/structures etc. (not being part of the work) caused by the contractor or his other agents, window contractor etc. Whether or not the damage

or loss is as a result of the negligence of the contractor or his agents etc. The Contractor shall provide at all times during the execution of the works and the defects liability period proper means of access, with ladders, gangways, etc. and as necessary attendance to move and adapt same as directed, for the inspection or measurement of the works by the Architects, or their representatives.

#### HEALTH AND SAFETY

The contractor shall at all times maintain the site in a clean and safe condition, and shall carry out the works in an orderly and safe manner as set out in the Preliminary Health and Safety Report where provided. The Contractor shall be appointed as Project Supervisor (Construction Stage) and will be required to fulfil the roles and responsibilities of the Project Supervisor (Construction Stage) as set out and defined in S.I. No. 504/2006 - Safety, Health and Welfare At Work (Construction) Regulations 2006 and he/she shall ensure the above and maintain suitable records and issue relevant notices in accordance with the Health and Safety and Welfare at Works Acts. As Project Supervisor (Construction Stage) the Contractor shall prepare and hand over a copy of the Safety File to the client before Practical Completion can be certified. The Contractor shall be responsible for provision of all documents and drawings, including as built drawings, necessary for the Safety File and should allow for this in his costs.

#### SAFETY OFFICER

The contractor shall allow for having an adequately trained Safety Officer on site at all times and who shall be responsible for health and safety issues arising on site.

#### TIME FOR COMPLETION

The time for completion shall date from the day when instructions shall be sent to the Contractor to begin the works. The work must be carried out with due diligence and expedience and the whole works including any additional works ordered by the Architect must be completed to the Architect's satisfaction. The Architect shall be at liberty, however, to extend the time for completion of the works if in his opinion completion shall be delayed by circumstances outside the control of the Contractor. Possession of the site shall be granted as soon as is possible after agreement of contract and works shall commence as soon as is possible. Completion of the works shall be as soon as is possible after possession of site. The Project Supervisor Construction Stage shall review the duration of the proposed program for the project as advised by the Contractor and shall confirm (or otherwise comment) on the practicality of same. The works shall be considered to be complete only from the date of issue by the Architect of the Certificate of Practical Completion.

#### PRIME COST & PROVISIONAL SUMS

Prime costs are not permitted in public works contracts therefore won't be accepted within the tender submission for the proposed works.

#### BUILDING REGULATIONS AND CONTROLS

The Contractor is to conform to the provisions of all Acts passed and adopted by Oireachtas Eireann or the state/European Union which may in any way affect the works and observe all orders, rules and regulations of the Municipal Authorities and shall indemnify the Employer

against all claims or liabilities. All works shall be carried out to comply with the requirements of the current Building Regulations, current Technical Guidance Documents inclusive of current revisions & amendments and all relevant Codes of Practice at the time of construction. The Contractor shall supply all due notice of operations to the Local Authority as may be required and shall obtain all necessary licences, consents, approvals etc. as may be required. The Contractor shall provide for making all necessary connections for water, drainage etc. or other services and pay all charges connected therewith, with the exception of such levies associated with conditions of the Planning Approval. On practical completion of the contract the contractor will be required to furnish to the architects a certificate stating that the works (including window-contract works) have been built in accordance with the provisions of the latest Building Regulations. The Contractor shall include for adherence to all conditions of the Planning Approval. The Contractor shall include for adherence to all conditions of any Fire Certificate approval documents and shall be inclusive of all finally agreed drawings, documents & final approval documents.

#### EXTRA WORK

In no case will any claim for extra work be granted unless such work has been authorised in writing by the Architect and a price agreed upon before such work is commenced. No variation shall vitiate the Contract, and any authorised variations (additions or deductions) which shall be instructed by the Employer shall be measured and valued at the rates set out in the Schedule of Rates or in cases where no appropriate rate exists in the original at rates prevailing in the area at the time that the works in question were executed.

#### RESPONSIBILITY

The Contractor is to take entire charge of the building works from commencement of the work to the completion of same and make good all injuries, damage and repairs occasioned or rendered necessary to same by causes over which the Contractor shall have control. He is to take the proper precautions to prevent such happenings and take all risks and hold the Employer harmless from any claims for injuries to persons, animals and things or for structural damage to property, happenings from any neglect, default, want of proper care, misconduct on the part of the Contractor or anyone in his employ, during the execution of the works.

#### INSPECTION

Where variation work may be instructed, work shall remain available for inspection and shall be passed by the Architect with any variation work to measure by him prior to covering up. Works covered up on breach of this instruction may be uncovered at the Contractor's expense and set out to the Architect's satisfaction. The Architect is to be given a minimum of 3 days' notice prior to milestone inspections as outlined in the Preliminary Inspection plan

#### INCLEMENT WEATHER

The whole of the works shall be protected as necessary during inclement weather, including covering walls & felt, supplying all necessary sheathing, screens etc. Any work damaged as a result of inclement weather shall be removed and re-instated by the Contractor as its own expense.

#### PROVISIONS FOR TEMPORARY SEALING THE BUILDING

The chosen contractor is to allow for the provision of temporary sealing the building during works if the situation arises which causes works to temporarily stop on site as the building is currently fully operational.

#### CASE UP

The Contractor is to case up and protect the work by other tradesmen and be responsible for and make good or pay for making good of any work which may suffer from want of such casing and protection.

#### CLEAR AWAY

The contractor shall remove all rubbish and debris from the site of the works and maintain in a relatively clean condition for the duration of the contract and shall effectively clean all areas and make good all defacements at completion and leave all to the entire satisfaction of the Architect.

#### CLEANING ON COMPLETION

All floors, paving's etc. to be scrubbed, all glass to be cleaned on both sides of windows and doors, all gulley's, gutters, pipe heads etc., to be cleaned out and the premises left clean perfect and water tight upon completion and shall make good all damage occasioned to same.

#### ATTENDANCE

The contractor shall allow for all attendance and give every facility and assistance to other tradesmen, Engineers etc. employed on the works and shall allow the use of his plant, scaffolding and water etc. free of charge. The contractor shall be responsible for the management of the works and for his work fitting in with the work of other trades. Contractor to cover up and protect work done by other tradesmen and be responsible for any loss or damage that may be suffered from want of same.

#### PRICE SCHEDULE OF RATES

The successful Contractor shall be required to lodge with the Architect within 14 days' notice of acceptance of this tender a priced and detailed schedule showing the rates on which his estimate was built up. All extra work will be measured and priced thereby.

#### INSURANCE

The Contractor shall be solely liable for and shall indemnify the Employer in respect of and shall insure against any liability due to injury to person's workmen's compensation or damage to property or loss of property. The Contractor shall make full provision for complying with the Conditions of Contract, relative to Fire Insurance Compensation for injury, Third Party Risks, All Risks etc.

### MASTER PROGRAMME

The Contractor shall, before gaining possession of the site, prepare and submit his proposed master programme for the execution of the works for comment by the Architect. The master programme shall incorporate:

- The dates of possession and for completion named in the Appendix to the Condition of Contract.
- The dates as determined or proposed for commencement and completion of all trades including those window-contracted.
- Such dates as can be made available for procurement, delivery to site of materials, commencement and completion of execution of all contracts for works not forming part of this Contract which the Employer has placed or intends to place direct and the existence of which have been known to the Contractor.

Thereafter the Contractor shall amend and revise the master programme as required by the Conditions of Contract and as required by the Architect. In so doing, the Contractor shall obtain from all window-contractors, and use his best endeavours to obtain from all contractors including those made known to him during the course of the Contract) any updating in their progress or programme which has occurred or is likely to occur and incorporate this in the revised master programme.

### CO-ORDINATION OF SITE WORKS

The Contractor shall be responsible for the co-ordination and proper execution and completion of the works and the protection of the site, The Contractor shall in accordance with his programme obtain and submit to the Engineer for his approval all builder's work details including shop drawings from window-contractors and suppliers, whether nominated or not. The Contractor shall arrange and attend such meetings as are necessary to ensure that the information requirements of all window-contractors are met and to establish their requirements for holes, chases, recesses, fixings and the like before the work is put in hand, to avoid conflict with other work. The Contractor shall be responsible for the setting out of the works in accordance with the drawings and Architect's instructions and shall be responsible for rectifying errors at its own expense.

### NOMINATED SUPPLIERS AND WINDOW - CONTRACTORS

All expenses in connection with the unloading, storing, and return of packings of goods and materials described as PC shall be allowed for by the Contractor. The Contractor shall allow in his price for all necessary building work (forming openings, making good etc.,) in connection with the work of window-contractors. Should the Contractor window-let any portion of the works, it shall only be with competent contractors and trades persons within the parameters of the Specification & Schedule documents which shall be applied insofar as it may be applicable to their work. The Contractor shall be responsible for ensuring that all persons carrying out work as part of the Contract shall be made fully aware of the standards required.

### GENERAL ATTENDANCES

The contractor shall allow for all attendance and give every facility and assistance to other tradesmen, Engineers etc. employed on the works and shall allow the use of his plant, scaffolding and water etc. free of charge. The contractor shall be responsible for the management of the works and for his work fitting in with the work of other trades. Contractor

to cover up and protect work done by other tradesmen and be responsible for any loss or damage that may be suffered from want of same.

#### MAINTENANCE

The Contractor shall be responsible for maintaining the works for a period of 12 months from the certified date of Practical Completion. Before the end of the Maintenance Period the Contractor shall make good all defects, including shrinkages and settlements, to the entire satisfaction of the Architect.

#### DAYWORKS

No day works shall be allowed unless the permission of the Architect has been obtained in writing. Day works sheets shall be presented to the Architect during the execution of Authorised day work, and they shall itemise the works executed with a clear statement of time and full particulars of the materials chargeable to every item. No day works shall be allowed for works which can be measured. Contractors are to state in their tenders the percentage profit they require on the net cost of day work

#### TAX CLEARANCE AND VAT

The contractor shall be registered with the Revenue Commissioners for income tax purposes and shall furnish, prior to acceptance of tender a current Certificate of Authorization (Form C2). The contractor shall warrant that it is and will be at all times during the course of the contract including final certification/defects liability period, registered for VAT and will on requesting payment provide a VAT invoice as necessary including VAT registration number.

#### COMPLIANCE & STANDARDS OF MATERIALS GENERALLY

The material and workmanship shall be to the satisfaction of the Architect and shall be the best of their respective kinds and in accordance with Sections B & C of the Specification document. Materials shall comply with the current building regulation. Materials shall bear a CE Marking in accordance with the provisions of the Construction Products Regulation. Materials shall comply with an appropriate harmonised standard or European Technical Assessment in accordance with the provisions of the Construction Products Regulation or comply with an appropriate Irish Standard or Irish Agreement Certificate or with an alternative national technical specification of any State which is a contracting party to the Agreement on the European Economic Area, which provides in use an equivalent level of safety and suitability. All goods and materials shall be of Irish manufacture and supply as far as possible with manufacturer's and supplier's instructions and relevant Irish or British Codes of Practice to be strictly adhered to where applicable. All goods and materials shall be subject to such tests and provision of samples as may be deemed necessary. The Architect may require any materials used on the contract to be tested to ensure that it conforms to the specification and where the tests show that it does not, the Contractor shall be responsible for the test so ordered. All dimensions and levels to be checked and verified on site prior to construction and any discrepancies to be reported to the Architect immediately. Do not scale off drawings. Setting out to be carried out by the Contractor after site clearance and in accordance with the architect's drawings. No foundations shall be poured till the setting out is approved and finalized. On practical completion of the contract the contractor will be required to furnish to the architects a

certificate stating that the works (including window contract works) have been built in accordance with the provisions of the latest Building Regulations.

#### PLANT, TOOLS, SCAFFOLDING ETC

The Contractor shall provide everything required, whether or not mentioned in this specification or shown on the drawings provided that it may be reasonably inferred, whether labour, plant materials, materials, cartage, internal and external scaffolding hoisting, fixing, tackle and tools superintendence and hoarding etc. for the safe, proper and expeditions executions of the works. The methods of work employed by the contractor in relation to the works are entirely the contractor's own responsibility.

#### HOLIDAYS WITH PAY ETC.

The Contractor shall be responsible for and include in his tender for all costs and expense in connection with workpeople including but not limited to:

- a) National Insurance Contributions
- b) Pensions
- c) Holidays with Pay Scheme for Building and Civil Engineering Industries
- d) Travelling time, expenses. Fares and transport
- e) Guaranteed time.
- f) Non-productive time and other expenses in connection with overtime.
- g) Provision of all necessary supervision, including a competent foreman.
- h) Any other disbursements arising from the employment of labour.

#### SAFEGUARDING THE WORKS

The Contractor shall be responsible and allow for safeguarding the works, materials and plant against damage or theft including all necessary watching and lighting for the security of the works and the protection of the public. The contractor shall insure himself for loss of any equipment or damage to the property by others. A temporary alarm system is to be installed in order to protect the property for the duration of the works.

#### NOISE

The Contractor's attention is drawn to the Control of Pollution Act 1974 with particular reference to the provision of Sections 60 and 61 of this Act. Refer project phasing and working hours above as noise restrictions will be in place during active school hours.

#### PROTECTION OF EXISTING SERVICES

The Contractor shall protect, uphold and maintain all existing public and private services during the execution of the Works. The Contractor is to make good any damage due to any cause within his control at his own expense or pay any costs and charges in connection therewith.

#### WATER FOR THE WORKS

The Contractor shall provide clean fresh water for use on the works, pay all charges and fees in connection therewith, provide all temporary storage, plumbing service connections etc., and clear way and make good on completion.

### LIGHTING AND POWER FOR THE WORKS

The Contractor shall provide all artificial lighting and power for the use on the Works, pay all charges in connection therewith, provide all temporary supply, leads, fittings, etc. and clear away and make good on completion unless otherwise agreed with the Architect and the Client. Otherwise, the Contractor may utilize existing available supplies where applicable, on site whereby the Contractor will be responsible for fees for the use of electricity. The Contractor shall isolate the supply of the areas of work as necessary and ensure the remaining electrical installation is safe for continued usage and for use during the contract period in areas occupied by the client.

### STORAGE OF MATERIALS

The Contractor shall agree with the Architect the location of a secure and Lockable room on the site for the storage and protection of all materials including materials of all nominated sub-contractors and to make good on completion all work disturbed due to the room being so used.

### NEIGHBOURING PROPERTY

The Contractor shall ensure no disturbance to neighbours where applicable and to make good at his own expense, any damage caused to neighbour's property. The Contractor shall be responsible for liaising & informing neighbours in advance of works that may directly or indirectly affect them, with reasonable notice and shall provide a statement to the architect outlining how such works may be successfully executed with minimum disruption to neighbours.

### PROTECTING, DRYING, CLEANING AND TESTING THE WORKS

The Contractor shall:

- Provide for carefully covering up and protecting the works and any adjoining property exposed by these works, from inclement weather.
- Provide for removing all rubbish from the site both as it accumulates from time to time and at completion.
- Provide for cleaning the building inside and out, and leaving the whole of the works clean, ready for occupation and Dry out and control the humidity of the works as may be necessary to facilitate the progress and satisfactory completion of the works including the works of nominated window-contractors.

The Contractor may use the permanent services installation partly or wholly for this purpose as and when available bearing all costs and paying all charges including the provision of a qualified attendant staff and the cost of fuel and equipment. Any damage to permanent installations is to be made good at the Contractor's expense.

Removal of water: The Contractor shall be responsible for all pumping that may be required to maintain the works in a dry state down to the level of the bottom of excavations from whatever water source. No accumulation of water shall be permitted during the completion of the works.

### PROVIDE EVERYTHING NECESSARY

The Contractor shall provide everything required, whether or not mentioned in this specification or indicated in any supporting documents & drawings, provided that it may be reasonably inferred from the drawings & documents provided, whether labour, scaffolding, plant materials,

superintendence, hoarding etc. for the safe proper and expeditious execution of the works. The methods of work employed by the Contractor in relation to the works are entirely the Contractor's own responsibility.

#### WALL TIES

Use stainless steel vertical twist type wall ties to BS EN 845-1.

#### QUALITY ASSURANCE

Materials and suppliers are to have been assessed and certified by an approved independent third-party quality assurance scheme.

#### DAMP & ROT

The Contractor shall be responsible for the arrangement of a specialist damp & rot survey & report. The Contractor shall be responsible for the execution of all enabling stripping out and builder's work associated with and as described within the specialist damp & rot report.

#### TIMBER MATERIALS

##### TIMBER GENERALLY:

Timber shall be to the best of its respective kind, thoroughly dry, bright, sound, well-conditioned, properly seasoned to suit the particular use, square-edged dye sawn, free from sap, shakes, cracks, warps, waney edges, large loose and dead knots, rot, beetle and other and free from defects or combination of defects rendering it unsuitable for the purpose intended. Timber used for grounds, battens, exposed grounds, exposed battens or fillets shall be treated red deal. All exposed timber faces to be wrought.

Timber used for joinery shall be as follows:

- Red deal of Northern Swedish or Canadian origin.
- Teak sourced from sustainable forest origin.
- Irish Oak.

All hardwood shall be well cut and shall be in conformity with samples approved by the Architect.

##### HARDWOOD:

Hardwood which is exposed to view in joinery work & hardwood floors shall be selected and totally free from the following defects: Knots, sapwood, waney edges, warping, pith, brittle heart, rot, stain and beetle attack.

Hardwood timber where used in joinery to be finished in paint decoration shall be Poplar of first quality for skirting's, architraves, dado rails, picture rails etc. to minimise shrinkage.

##### SOFTWOOD:

Softwood timber where used in joinery which will be exposed to view shall be of first quality for skirting's, architraves, dado rails, picture rails etc. Poplar (hardwood), Pine or Red Deal of first quality.

The following defects will not be permitted:

Pith shown on the surface, sloping grain exceeding one in eight, checks, splits and shakes, knots, excepting isolated sound tight knots of less the 19mm diameter, any evidence of beetle attack or rot. Softwood not exposed to view will be accepted with minor defects with the exception of beetle attack or rot. All unwrought timber shall be of first quality fir, larch and spruce unless otherwise stated elsewhere.

Moisture Content: The moisture content of the timber when the joinery is manufactured shall be within the following limits:

- Minimum 15%
- Maximum 20%

PLYWOOD:

Plywood generally shall comply with BS EN 636:2012 Plywood - Specifications (+A1:2015). All plywood shall be WBP bonded first grade and shall be faced with veneer as specified. One side shall be completely free from joints and surface defects. Joints and minor blemishes will be permitted on the reverse side only. Where both sides of the plywood are exposed these shall be totally free of joints and surface defects.

Fire-Proof Board:

Shall be non-combustible, asbestos free, laminate board with calcium silicate matrix reinforced with vermiculite and natural organic fibres.

Wood Veneers:

Wood veneers to be prime quality selected real wood, a sample of which shall be submitted and approved by the Architect. The Architect is to be informed when the whole of the stock is ready for his inspection and approval before work is commenced.

Plastic Laminate:

Plastic laminate shall be of approved make, pattern and grade Formica or equivalent

Doors generally:

Shall have outer frame widths as shown with an infill of 100% of solid timber, as described or other approved material; all edges to be lipped with hardwood lipping, tongued and grooved to core frame. For veneered doors, where occurring, the lipping shall be checked on both sides to allow the veneer facing to extend to the edges of the door. Locking blocks shall be provided a least 250mm high. Fire resisting doors shall comply with BS 476-22:1987. Fire tests on building materials and structures. Methods for determination of the fire resistance of non-load bearing elements of construction

Ancillary trims:

Proposed ancillary trims and finishing elements to detail. Ancillary trims to be formed from Poplar hardwood unless otherwise indicated. All ancillary trims to be carefully formed at joints and to be plugged & screw fixed with fixings recessed for filling prior to decoration. Proposed picture rails, skirting's, architraves and other ancillary trims and finishing elements to detail. External timber for use in fascia, soffit & bargeboards shall be hardwood for finish to be selected by the Architect.

Glues:

Glues shall be of synthetic resin adhesive to BS EN 301: 2017 Adhesives, phenolic and amino plastic, for load-bearing timber structures. Classification and performance requirements applied strictly in accordance with the manufacturer's instructions.

Preservative treatment - organic:

All floor battens, concealed grounds, timber built into masonry, dry-lining etc. to be pressure impregnated against rot & insect attack. Any cut ends to receive two coats of approved wood preservative. Double vacuum organic solvent wood preservative treatment shall comply with BS 5707(1997): 1997 specification for preparations of wood preservatives in organic solvents. Treatment shall be in accordance with the following double vacuum schedules and treatment classes.

#### Minimum Treatment Schedule for Class A Timbers (in external situations)

| Timber Species                                          | Initial Vacuum Bar<br>(mins) | Pressure Bar<br>(mins) | Final Vacuum Bar<br>(mins) |
|---------------------------------------------------------|------------------------------|------------------------|----------------------------|
| Southern Yellow                                         | 0.33                         | 1.00                   | 0.83                       |
| Teak, Pine, Iroko,<br>Red Deal, White<br>Deal, Ash, Oak | (0)                          | (40)                   | (20)                       |

#### Minimum Treatment Schedule for Class A Timbers (in internal situations)

| Timber Species                                          | Initial Vacuum Bar<br>(mins) | Pressure Bar<br>(mins) | Final Vacuum Bar<br>(mins) |
|---------------------------------------------------------|------------------------------|------------------------|----------------------------|
| Southern Yellow                                         | 0.33                         | 0                      | 0.67                       |
| Teak, Pine, Iroko,<br>Red Deal, White<br>Deal, Ash, Oak | (3)                          | (3)                    | (20)                       |

The times given in the tables are the number of minutes for which the defined vacuum once achieved, is maintained. The initial vacuum is always maintained during flooding. Moisture content to be 18%, BS EN 942: 2007 - Timber in joinery - general requirements. Treatment to take place after cutting and notching.

#### Re-Treatment of Cut Surfaces:

All known cutting, machining, profiling and notching must be complete prior to assembly. Any unforeseen cutting of treated surfaces must have the Architects approval. Where the Architect gives such approval notches shall be given two liberal brush or spray applications or, where end grain is exposed, timbers shall be steeped in a compatible organic solvent end grain preservative for a period of not less than three minutes. Rip-sawing, planing and heavy sanding will not be permitted unless the timber is returned for re-treatment.

#### Screws and Nails:

Screws shall comply with BS 1210 and nails to BS 1202-1(2002): 2002 - Specification for nails - part 1: steel nails. In every case the size and material of screws and nails shall be appropriate to the nature of the fixing and of the materials involved.

#### Specialist Timber Floors:

To be laid in accordance with manufacturer's instructions, guidelines & recommendations.

#### Moisture Content of Timber:

The moisture content of all structural timber shall not exceed 22% at the time of erection.

#### Storage Generally:

Store timber and timber products protected from the weather, clear of the ground and supported to prevent distortion. If stored in the open or in damp air conditions enclose completely with a suitable covering to prevent deterioration and provide for air circulation and ventilation.

#### Certification:

The Contractor shall provide documents from their timber supplier certifying that all structural timber complies with the specified grading treatment and moisture content requirement.

#### Protection:

Protect, as necessary, all work described in this Section during the progress of the Works and clean down and leave perfect on completion.

#### Finishing:

Door leaves are to be finished with Teak lipping's which shall be finished off site as follows:

- Pre-sand all surfaces with 240 grit paper. Spray apply 1 wet coat P/C Basecoat.
  - When dry sand with 240 grit paper. Spray apply 1 wet coat P/C Basecoat.
  - When dry sand with 240 grit paper.
  - Spray apply 1 wet coat pre catalysed lacquer.
- Maximum thinning of each coat not to exceed 10%, all in accordance with the manufacturer's instructions. All soft wood, exposed M.D.F. (i.e. skirting's, and door frames) shall be painted by brush on site as follows: -
- Apply 1 No. coat wood/metal primed, sand lightly,
  - Apply 2 No. coats oil-based undercoat, sanding lightly between coats,
  - Apply 1 No. coat eggshell oil to a selected colour.

#### TIMBER WORKMANSHIP

##### Storage:

Timber shall be stored under cover clear of the ground and protected from dampness. Workmanship generally shall be in accordance with BS 1186-2(1988): 1988 - Timber for and workmanship in joinery - specification for workmanship. The whole of the carpentry and joinery work is to be carried out in the best manner. Plates, ceiling joists, etc., shall be in one length where possible. All joints shall be made directly over supports and these shall be scarfed and spiked where required. All woodwork to be neatly assembled by careful matching, cutting, planing and joining's whether by nailing, mortice & Tennon, dowel or other method and to be left solid. All framed work & joinery is to be put in hand upon the general work being commenced but not to be glued & wedged up until the joinery is prepared in readiness for immediate fixing and shall be secured and skilfully executed. All framing is to be assembled with well-fitting mortice & tenon joints and wedged up solid. The Contractor is to be responsible for the sound construction of the components, using the recognised forms of joints in the appropriate positions. The work is to be manufactured according to the best traditions of the trade to the satisfaction of the Architect. All joinery is to be finished with a clear wrought face. Surfaces of softwood intended for painting shall be such that if properly finished with matt paint, imperfections in manufacture will not be apparent. Surfaces of hardwood for gloss or matt transparent finish shall be such that when so finished no imperfections shall be apparent.

**Fixing:**

Joinery intended to be painted is to be fixed by nails. Nail heads are to be punched below the surface and are to be filled with leadless paste filler. Joinery intended for polishing is to be secretly fixed. Heads of screws are to be let in and pelleted in the same wood and with matching grain. Supply all necessary bracketing, grounds, fillers, moulds, templates, beads, pallets, slips, firrings, wedgings, finishing's, fixings etc. all joinery work generally to be secured as specified and all plugging, grounds, packings, packing and other fixings are to be executed in a proper and workmanlike manner. All joinery members so fixed shall be true horizontally & vertically. Unless timber is impregnated with preservative, the backs of frames etc., to be fixed to walls and all other bedding surfaces are to be painted with two coats preservative before priming. All work to be painted is to be treated with knotting as necessary and given one brush coat of priming to all faces. Surfaces to be joined are not to be primed. The number of coats and methods of application of all finishes are to be as specified. Work is not to commence until the Architect has approved the Contractor's full-size setting-out drawings. Suggestions that the Contractor may wish to make for modifying the construction of the units as shown on the Architect's drawings will only be considered when the shop drawings are examined. No deviation is to be made from the Architect's details without his written approval. Facilities are to be given for the Architect to inspect all work in progress in shops and on the site.

**External Joinery:**

All external exposed joinery work, doors, frames etc., shall have the joints, tenons, mortices and grooves etc., liberally coated with an approved waterproof glue immediately before framing up so as to be made perfectly watertight and prices are to include for this work. Proposed windows shall be bedded in mastic on cills, wrapped in DPC.

**Transport and Protection:**

The joinery is to be kept under a waterproof cover during transport and is to be similarly covered if exposed until fixed in position. It is to be handled and stacked carefully to avoid damage.

**Make Good Defective Work:**

Should any shrinkage and warping occur or any other defects appear in the joinery work before the end of the Defects Liability Period, such defective work is to be taken down and renewed to the Architect's satisfaction and any work disturbed in consequence must be made good at the Contractor's expense.

**Plugging:**

The term plugging shall mean the provision and fixing of approved proprietary plugs, at the Contractor's option, fixing by means of approved expansion plugs and prices are to include for all necessary wedging and drilling of wood, concrete or brickwork. Where plugging and screwing of door or window frames is measured this shall be deemed to include plugs and screws of adequate size and strength to suit the frame size including proprietary frame fixings as manufactured by 'Upat' or equivalent, 'Rawplug' or equivalent etc.



## STRUCTURAL TIMBERWORK

### Scope:

The provision of this specification governs softwood structural timber members in roofs or floors. In the case of conflicting requirements, the contract documents shall govern.

### Standards:

The whole of the structural timberwork shall comply with BS EN 1995-1-1 (2004) UK national annex to Eurocode 5: design of timber structures - part 1-1: general - common rules and rules for buildings

### Terminology and Species Names:

Timber terms are those of BS EN 565: 2017 Mountaineering equipment - Tape - Safety requirements and test methods. Timber species are the standard names in BS EN 13556: 2003 - Round and sawn timber - Nomenclature of timbers used in Europe

### Timber for Structural Members: Stress graded softwood schedule:

Stress grade softwood shall be graded in accordance with BS 4978:2007 Visual strength grading of softwood - specification (+A2:2017) and its species shall comply with BS EN 1995-1-1 (2004) UK national annex to Eurocode 5: design of timber structures - part 1-1: general - common rules and rules for buildings

| Location | Use                                                         | Species    | Stress Grade |
|----------|-------------------------------------------------------------|------------|--------------|
| Roof     | Roof rafters, ceiling joists,<br>Struts, general carcassing | White wood | Grade GS     |

The species group and stress grade shall be marked on the timber.

## BUILDING SERVICES DATA EVIDENCE REQUIRED

### **Evidence Required for non-default data efficiencies for heating, ventilation and air conditioning Systems**

- Performance data on 'CE marked' literature is acceptable provided that the literature refers to the relevant test performance standard.
- Literature from manufacturer referencing the efficiency and relevant test performance standard.
- Accredited test certificates clearly relating to the product in question or as verified by the manufacturer/ supplier as having the same performance as the installed product, must comply with the following:
  - Installation instructions in the test certificate on which the stated performance depends must be adhered to.
  - Test certificates must be in English or be accompanied by a certified English translation. The translation can be from the accredited test house or from a professional translator listed by the Irish translation and interpreters Association or international equivalent.
  - The relevant test performance standard must be stated on the test certificate. The test laboratory must be accredited.
- Variable Heat Recovery Efficiency and Variable Speed pumps data
  - Copies of technical data sheets
  - As built drawings and schematics
- Specific Fan Powers to be calculated in accordance with
  - IS EN 1379:2007 Annex D and Appendix E TGD Part L
  - Copies of manufacturers technical data sheets

### **Evidence Required for non-default Lighting data:**

- Performance data on 'CE Marked' literature is acceptable provided that the literature refers to the relevant test performance standard.
- Literature from manufacturer referencing the efficiency relevant test performance standard.
- Accredited Test certificates clearly relating to the product in question or as verified by the manufacturer/supplier as having the same performance as the installed product, must comply with the following:
  - Installation instructions in the test certificate on which stated performance depends must be adhered to
  - Test certificates must be in English or be accompanied by a certified English translation. The translation can be from the accredited test house or from a professional translator listed by the Irish Translators and interpreters Association or international equivalent.
  - The relevant test performance standard must be stated on the test certificate;
  - The test laboratory must be accredited.
- Full lighting design for each zone with
  - Installed power and
  - Installed illuminance
  - As installed layout drawings
  - Signed off by the M&E Engineer
- Technical Data sheets for all lighting controls

## ARCHITECTURAL DATA EVIDENCE REQUIRED

### **Evidence Required for non-default window and rooflight data:**

- Copies of invoices from the site identifying the make and model (building address included).
- 'CE MARKED' certificates referring to the relevant standards. Certificate must refer to:
  - Specific Make and model
  - BS EN 14351-1:2006 Windows and doors - product standard, performance characteristics. Windows and external pedestrian door sets (+A2:2016) (Incorporating corrigendum November 2016)
  - U-value
  - Solar Transmittance
  - Light transmittance
  - To use non default U-Value,

### **Evidence Required for non-default Building Envelope:**

- Substantial documentary evidence of what has been installed on site, particularly for insulation which is not visible on completion-i.e. floors, walls, roofs.
- 'As Built' drawings showing the makeup of the element including the insulation material used and thicknesses of all layers including the insulation layers. Invoices/statements/as built drawings, reports of works detailing all layers and thicknesses of layers.
- As built drawings signed off by the architect/assigned certifier confirming as constructed.
- Photographs during construction of the element concerned with clearly identifiable insulation layers.
- Copies of site-specific invoices for insulation etc (building address included) with a detailed description of the work concerned and must clearly identify the work with the building concerned. Documents should indicate address, date and insulation material and thickness used.
- Agrément cert or other certified data sheets with CE marked data for conductivities o insulations.
- U-value and KM (effective thermal capacity) calculations in compliance with BRE 443:2019 and the relevant EN standard calculation for the relevant element.

## O&M MANUAL REQUIREMENTS

- It is a contractual requirement that the main contractor shall produce an Operations and Maintenance manual for the works. The required format (physical O&M Manual) for submission is to be agreed with the Architect at tender stage however as a **minimum two** no. hard copies and digital versions of the final approved manual will be required. Draft digital copies of the O&M Manual shall be submitted for review to the Architect no less than three weeks in advance of the agreed date for Practical Completion.
- To facilitate submission of record drawings, the Contractor shall keep on site complete set of all drawings used on the Contract Works, on which he shall mark alterations to the designs shown thereon as such alterations are carried out. **THIS PROCEDURE SHALL BE STRICTLY ADHERED TO.**
- All operation and maintenance manuals along with their associated record drawings shall be prepared in accordance with the requirements of BSRIA document BG 79/2020 Handover Information and O&M manuals.
- The complete sets of Operating and Maintenance Manuals and record drawing shall be supplied to enable the Employer to operate and maintain the system correctly. The manuals must

therefore contain all necessary technical information on each item of equipment and the associated components which have been used to assemble and construct the system(s).

- In addition, manuals for each system must contain information on the design intent of the system, commissioning and testing results and reports of how the components of the system are adjusted to achieve the design intent, line diagrams to show how the system is arranged in the building giving the location of all equipment and components, its control system, how the system must be set in the normal operating mode and in the event of any emergency, routine check that must be made and a list of spares which should be kept and a list of any special tools which may be required.
- The manuals must be prepared in such a way that an Architect / Engineer / Client without any previous knowledge of the Project may use them to operate and maintain the system.

**The O&M Manual shall include, but not be limited to, the following:**

- Current, as of date of issue, contact details of each company/contractor involved in the supply or manufacture of elements, materials and components.
- All project approved certification, documentation and trade literature in relation to elements, materials and components used in the works.
- Hardcopy O&M Manual Format - A4 lever arch files with rigid plastic coated covers shall be used which
- A full set – in A3 format – of approved as-built drawings with all approved changes incorporated and supplemented with a comprehensive text based technical description of each element and system type of the works.
- A Copy of all completed BCAR Ancillary certificates and Statutory documents.
- All Required Building service and Architectural Data Evidence as detailed above.
- Full set of structural calculations for reference.
- Records of any toughened glass, including heat soak testing records. Include any records of NiS breakages that occur on-site during construction.
- A full list of warranty statements clearly identifying any terms and conditions.
- The approved Maintenance & Access Strategy Report which shall include methodology covering the procedures for replacement components, elements and materials which have been identified as 'Replicable' items and therefore having a design life which is less than the design life of the works.
- The approved Maintenance & Access Strategy Report, which shall include methodology covering the procedures for replacement of damaged and/or defective components, elements and materials.
- Manufacturer's recommendations and methodology for all routine cleaning and maintenance including but not limited to appropriate cleaning products, repair products, lubrication of component parts etc.
- Record/ check sheets for routine cleaning and maintenance works.

**Presentation**

- Indexing System
  - Each volume shall be numbered and shall be divided into sections using an appropriate numbering system
- Paper Sizes
  - The manual will contain manufacturer's literature which will be different sizes. Large pages will be folded and small pages will be fitted in plastic pockets with a reinforced edge punched for filing in A4 lever arch files.

- The page size shall be standardised for all volumes using A4 paper (210 x 297mm) with four holes punched centrally in the longer side 80mm apart. Diagrams shall be prepared on A4 or A3 (297 x 420mm) paper.
- Section Dividers
  - Stiff cardboard section dividers with extended tabs shall be used; these shall be SUMMIT Ring Book Guides or equivalent.
- Files for Manual
  - A4 lever arch files with rigid plastic-coated covers shall be used which shall be EMGEE or equivalent.
  - Inlaid lettering on the front cover shall indicate the title, i.e. Operating and Maintenance Manual, the Name of the Project and Volume Number. A label shall be fitted in the window on the spine of the file listing its contents.
  - The Trade Contractor is advised that all Record Drawings and O & M Manuals in the form described herein must be handed over to the Architect prior to the issue of a Practical Completion Certificate for the Trade Contract Works. Failure to issue these Record Drawings and O & M Manuals will also defer the issue of the Practical Completion Certificate until such time as they are received.
  - If the Trade Contractor fails to issue such documentation on time, then the Architect will have the right to engage such other third parties to prepare these Record Drawings and O & M Manuals and any resultant cost incurred by him shall be borne and set against the Contractor.
  - As-built Drawings - The Contractor shall include for a complete set of as-built drawings which shall incorporate all works carried out and completed by the Contractor.
  - To facilitate submission of record drawings, the Contractor shall keep on site a complete set of all drawings used on the Contract Works, on which he shall mark alterations to the designs shown thereon as such alterations are carried out.

### 3.0 SCOPE OF WORKS

To be read in conjunction with other related sections of the Specified Schedule of Works and drawings. The Specification and specified schedule will set out the nature and quality of finish required and provides for samples to be prepared to ensure the standard required is agreed and approved in advance. The contractor will be required to produce method statements, which shall address the relevant issues to work operations.

#### SUBSTITUTION OF PRODUCTS

- **All proprietary products and material references contained within this specification are done so to assist with quality bench marking and alternative products shall be required to be an **equivalent**.**
- Products: If an alternative product to that specified is proposed, Contractor must obtain approval from the DT before ordering the product.
  - Reasons: Submit reasons for the proposed substitution.
  - Documentation: Submit relevant information, including:
    - Manufacturer and product reference;
    - Cost;
    - Availability;
    - Relevant standards;
    - Performance;
    - Function;
    - Compatibility of accessories;
    - Proposed revisions to drawings and specification;
    - Compatibility with adjacent work;
    - Appearance;
    - Copy of warranty/ guarantee.
  - Compliance with Planning Permission Documentation.
  - Compliance with Fire Safety Certificate and Disability Access Certificate
  - Compliance with Department of Education and Skills Technical Guidance Documents
  - Alterations to adjacent work: If needed, advise scope, nature and cost.
  - Manufacturers' guarantees: If substitution is accepted, submit before ordering products.
  - Alterations to adjacent work: If needed, advise scope, nature and cost.
  - Manufacturers' guarantees: If substitution is accepted, submit before ordering products.

#### ROOF SYSTEM TECHNICAL SUBMITTAL REQUIREMENT

- Where the contractor proposes an alternative roof system to that specified, the Contractor **shall submit a Full Technical Submittal** for the alternative roof system for approval prior to commencement of works. **The Flat Roof System Technical Submittal Form (Excel format)** included within the tender package **shall be fully completed and returned** to the Architect together with **all required supporting and evidence documentation requested**.
- The Employers Representative and Design Team reserve the right to reject any alternative roof system proposal that does not demonstrate full equivalence or superior performance to the specified system.

## 1. SITE COMPOUND, FACILITIES & AREA OF WORKS

### 1.1 – SITE COMPOUND / SITE ACCESS

- Location of a site compound shall be agreed with architect / client prior to works commencing.
- Contractors Site compound area shall include adequate temporary hardstanding where required to provide contractors welfare facilities, offices and contractor / sub-contractor staff parking together with any site materials.
- The Extent of contractors compound shall be altered / relocated as required to provide required phasing / completion of works.
- All Site compound hard surfacing and landscaped areas shall be made good and reverted to existing finish upon completion of works.
- Proposed works are within active school property, measures to be put in place to ensure safety of all students, teachers & pedestrians at all times including strict traffic management, access to site compound and health / safety regimes.
- Contractor to separate and secure the works fully, it is the contractor's responsibility to erect Heras or equivalent fencing along the boundary of the site / site compound and any area's where works take place as necessary to allow the safe construction of the works.
- It is the contractors responsibility to investigate the location of existing underground service pipes in the area of works and notify the architect of any discrepancies from drawings etc.
- The importance of maintaining a tight control over unauthorised personnel entering / accessing the works area is to be enforced, a strict regime in this regard. Access onto the site / works area is strictly by invitation only by the Main Contractor and any persons authorised are to wear full PPE at all times.
- It is not recommended to store materials within site compound area.
- Any waste skips located within site compound must be min. 3m from all structures and boundaries in the event of arson.
- The chosen contractor is to liaise with Architect in order to agree the location of skip / waste materials. Refer to architects' drawings for provisional location, TBC prior to works commencing on site.
- Any waste skips located within site compound / area of works must be min. 3m from all structures and boundaries in the event of arson.

### 1.2 - HOARDING AND SITE SEPERATION

- Heras or equivalent fencing / separating partitions shall remain in place for the duration of the contract.
- To separate and secure the works fully the contractor will erect temporary hoarding along the edge of the work zone within the site as shown on the contractors traffic management plan to allow the safe construction of the works whilst maintaining the safety of the Schools management, Students and visitors to the premises.
- Partition Hoarding shall be decorated/painted to a reasonable standard (colour to architect's specification) on the road side for the duration of the works.
- The hoarding shall be secured and made stable at all times during its use.
- The contractor may at his own discretion and risk, use existing boundary structures as hoarding to the site when appropriate should he consider the same to be appropriate and necessary and whereby suitable access can be formed.
- It is the responsibility of the contractor to obtain necessary approvals/consents/hoarding licenses etc. before commencing the relevant elements of the works. The Contractor shall securely erect the Architects site board to an agreed location.

### 1.3 - STORAGE OF MATERIALS & SAFEGUARDING THE WORKS

- The Contractor shall agree with the Architect the location of a secure and Lockable room on the site for the storage and protection of all materials including materials of all nominated sub-contractors and to make good on completion all work disturbed due to the room being so used.
- The Contractor shall be responsible and allow for safeguarding the works, materials and plant against damage or theft including all necessary watching and lighting for the security of the works and the protection of the public.
- The contractor shall insure himself for loss of any equipment or damage to the property by others.
- A temporary alarm system shall be installed in order to protect the property for the duration of the works.

### 1.4 - LOCATION OF SKIP WITH COMPOUND

- All waste skips shall be located within site compound and must be min. 3m from all structures and boundaries in the event of arson.
- The chosen contractor is to liaise with Architect in order to agree the location of skip / waste materials. Refer to architects' drawings for provisional location, TBC prior to works commencing on site.

### 1.5 - SITE OFFICES

#### 1.5.1 - GENERAL REQUIREMENTS

The Main Contractor shall be responsible for the provision, setup, and maintenance of adequate and suitable site office accommodation in close proximity to the construction site. These facilities must remain operational, secure, and accessible for the full duration of the works.

#### 1.5.2 - LOCATION & ACCESSIBILITY

- The site office should be located as near as practicable to the main site operations to ensure ease of access for project personnel.
- Where feasible, these facilities should be co-located with or adjacent to welfare amenities such as toilets, showers, and washbasins, in compliance with relevant health and safety regulations.

#### 1.5.3 - FACILITIES & SERVICES

All office accommodations provided shall include, at a minimum:

- Adequate internal floor space to accommodate anticipated staff and functions comfortably.
- Sufficient heating and ventilation systems to ensure a safe and comfortable working environment across all seasons.
- Lighting that meets workplace regulations for reading and detailed work, including both natural and artificial sources.
- Power supply with sufficient outlets for equipment and charging needs.
- Reliable and secure Wi-Fi connectivity capable of supporting multiple users and basic project management tools (email, CAD viewers, video conferencing, etc.).
- Office furnishings, including desks & chairs.

#### 1.5.4 - MAINTENANCE & CLEANLINESS

- The Main Contractor shall ensure that all office and meeting room facilities are kept clean, safe, and well-maintained throughout the contract period.
- Cleaning shall be carried out at least daily, with additional deep cleaning as needed, especially during periods of heavy use or inclement weather.

#### 1.5.5 - SECURITY

- Site offices shall be secured outside of working hours, with lockable doors and windows.
- Appropriate fire safety equipment (e.g. extinguishers, alarms) shall be installed and maintained.

#### 1.6 – CONSTRUCTION SITE WELFARE FACILITIES

- The Main Contractor shall be responsible for providing Construction Site Welfare Facilities in accordance with Safety, Health and Welfare at Work (Construction) Regulations 2013 Part 14 *Construction Site Welfare Facilities*.

##### 1.6.1 - SHELTER AND ACCOMMODATION

The Main contractor responsible for a construction site shall provide at or in the immediate vicinity of the site:

- Adequate and suitable enclosed accommodation for taking shelter during interruptions of work owing to bad weather and for storing clothing not worn during working hours to include:
- Where there are more than 5 persons at work on a site, adequate and suitable means for them to warm themselves and for drying wet clothing;
- Where there are 5 persons or less at work on a site such arrangements as are practicable for them to warm themselves and for drying wet clothing; and
- Adequate and suitable accommodation for the deposit of protective clothing used for work and kept, when not in use, at or in the immediate vicinity, with practical arrangements in place for drying the clothing if it becomes wet.
- Adequate and suitable accommodation with sufficient tables with impermeable surfaces and seats with backs, for taking meals in satisfactory conditions;
- Facilities for boiling water and, where appropriate, facilities for preparing their meals in satisfactory conditions. Where there are more than 5 persons at work on a site and heated food is not otherwise available, adequate facilities for heating food must be available. Ensure an adequate supply of drinkable water and, where appropriate, another suitable non-alcoholic beverage be provided (at a convenient location); and
- Shelter and accommodation provided shall be properly ventilated, adequately lighted, kept in a clean, hygienic and orderly condition and shall not be used for the deposit or storage of materials and plant.

##### 1.6.2 - CHANGING ROOMS AND LOCKERS

- The Main contractor responsible for a construction site shall ensure that appropriate changing rooms are provided for persons at work if they have to wear special work clothes and if for health or other appropriate reasons they cannot be expected to change in another area.
- The changing rooms should be easily accessible, of sufficient capacity and provided with seating.
- If work clothes are likely to be contaminated by dangerous substances, atmospheric conditions or other conditions the relevant contractor shall provide facilities to enable working clothes are

kept in a place separate from personal clothing and personal belongings and separate changing rooms are provided for both men and women.

- If changing rooms are not required the relevant contractor shall ensure that every person at work is provided with a place to lock away his or her own clothes and personal belongings.

#### 1.6.3 - WASHING FACILITIES

- The Main contractor responsible for a construction site shall ensure that adequate and suitable facilities for washing appropriate to the number of persons at work and the duration of the work are provided.
- Where there are reasonable grounds for believing that the work will not be completed within 30 days the contractor responsible for the construction site shall ensure the following is provided:
  - Adequate troughs or basins which have smooth impermeable internal surfaces;
  - Adequate suitable means of cleaning and drying such as soap and cleans towels (the single towel for use by many should be discouraged) or other suitable means; and
- A sufficient supply of running hot and cold or warm water, hot water temperatures must be controlled so as to prevent scalding.
- Where there are more than 100 persons at work and reasonable grounds to believe that the work will not be completed within 12 months washbasins shall be provided as follows:
  - Six washbasins plus the addition of one for every 20 persons exceeding 100, or any fraction of a unit of 20 persons being treated as one
- A contractor responsible for a construction site on which persons are at work where a dangerous substance is used shall provide an adequate number of nail brushes and provide one trough, basin, or washbasin, as may be appropriate, for every 5 persons at work.
- The washing facilities provided have suitable accessibility from the accommodation provided for taking meals and ensure they have adequate lighting, proper ventilation and are kept clean and tidied;
- Separate washbasins are provided for men and women where appropriate;
- Where by the nature of the work or for health reasons suitable showers shall be provided and provision is made for separate shower rooms or separate use of shower rooms for both men and women;
- The shower rooms are sufficiently large enough, hygienic and equipped with hot and cold running water to allow each person to wash themselves effectively; and
- Where the rooms housing the showers or washbasins are separate from the changing rooms ensure there is easy communication between them.

#### 1.6.4 - TOILETS

- The Main contractor responsible for a construction site should ensure:
  - At least one suitable sanitary convenience is provided, not being a convenience suitable only as a urinal for every 20 persons at work on the site;
  - Where practicable every sanitary convenience discharges into a main sewer, is kept clean, tidy and properly ventilated and does not communicate with any workroom except through the open air or through an intervening ventilated space;
  - Every sanitary convenience shall be under cover and partitioned off to secure privacy;
  - Other than a convenience suitable only as an urinal, has a proper door and fastening;
  - Every sanitary convenience is easily accessible to persons at work at all times while they are at the site and where possible is convenient to the washing facilities; and
- Provision shall be made for separate use of sanitary convenience for men and women.

#### 1.6.5 – MAINTENANCE AND USE OF WELFARE FACILITIES

- A core aspect of the provision of welfare facilities is an adequate maintenance plan:
- Persons using the facilities should do so in a clean and hygienic condition and must not damage the facilities provided
- Where facilities are provided in another premises adjacent to the site, the standards of use that apply to these facilities must be maintained by persons using the facilities
- Site Rules for monitoring the provision, upkeep and use of welfare facilities should be prepared.

#### 1.7 – INSTALLATION / ERECTION OF SCAFFOLDING

- Contractor shall provide appropriate physical barriers/ scaffolding, safety rails, toe boards etc as required for work at high level and installed fully compliant with the H S A regulations. Refer to the HSA Guidelines "Code of Practice for Safety in Roof work & Access / Working Scaffolds". Along with all the other relevant Published HSA guidelines must be adhered to at all times.
- The contractor to allow for scaffolding to remain in place for the full duration of works as required. All roof works must be complete with approval by architect prior to removal of scaffolding.

##### 1.7.1 - SCAFFOLDING SIGNAGE

- Easily comprehensible signs showing the safe working load, for each working lift, should be placed on scaffolds and loading bays.
- Warning signs must also be erected on a scaffold that is not available for use, including during its assembly, dismantling or alteration and, where appropriate, the scaffolding should be protected, by barriers or other suitable means, from unauthorised access or use. Scaffold 'tag' systems are available that clearly indicate, usually at ladder access point, if the scaffold is in use or not.

##### 1.7.2 - ACCESS TO THE SCAFFOLD

- A safe means of access and egress to all working platforms on the scaffold must be provided. This may include gangways, stairways, landings, ladders, ramps or hoists. Priority should be given to providing independent staircase access wherever practicable, particularly when there is high usage of the scaffolding or where materials will need to be carried between lifts by hand.
- Sufficient access points must be provided so that workers may easily gain access to their place of work. An inadequate number of access points may lead to unsafe practices such as workers climbing scaffold components to gain access to or egress from their place of work.

##### 1.7.3 - LADDER ACCESS

- Scaffold access ladders should meet the following minimum standards:
  - Ladder access towers, fixed to the outside of the scaffold, should be erected, where practicable using single lift ladders and self-closing ladder gates to separate the access tower from the working platform;
  - The top of ladder stiles should be securely fixed to the scaffold by lashings;
  - The ladder should be set, where practicable, at an angle of not more than 4 verticals to 1 horizontal and allow sufficient room for workers access and egress through the ladder access opening;
  - Each stile should be equally supported on a firm and level footing;

- The ladder should extend at least 1m above the landing point unless a suitable alternative handrail has been provided;
- The maximum vertical distance between landings should be 9m;
- Where the ladder is internal, guardrails or other protective measures should be in place around the opening to prevent someone stepping into the ladder access opening accidentally;
- The clear dimensions of an access opening in a platform shall be at least 450mm wide, measured across the width of the platform, and 600mm long;
- Landings on ladder access towers should be provided with guard-rails and toe-boards and access openings protected with self-closing ladder gates or appropriate trap doors where deemed necessary. The provision of lifts, hoists, staircase towers or ramps should be considered where possible when justified by the frequency of passage, height to be negotiated, duration of use or evacuation requirements.

#### 1.7.4 - LOADING BAYS (SCAFFOLD LOADING PLATFORMS)

- Provide proprietary loading bay gates and platforms sized for intended materials and plant interface. Treat as **Temporary Works**; design, erection, alteration and dismantling by a **competent scaffold designer/contractor**.
- Loading bays to be integrated into the scaffold design and tying pattern; no freestanding or inadequately tied bays.

##### **Design & Capacity**

- Design to state **Safe Working Load (SWL)** per bay (kN and kg), number of pallets permitted per lift, and any point/line load limits.
- SWL to cover the **worst-case pallet**, impact from landing, and dynamic effects from gates.
- Provide drawings/calculations confirming: deck build-up, transom spacing, bracing, ties/kentledge, standards, ledgers, and gate loads.

##### **Deck, Gates & Edge Protection**

- Deck to be fully boarded/laminated panels with **no gaps**; secure boards to prevent uplift.
- Fit **self-closing proprietary loading bay gates** (chains alone not acceptable) with top/mid-rails and **toe-boards ≥150 mm** on all exposed edges.
- Provide **kick strips** to deck perimeter and **pallet restraint** (e.g., back-upstand or locating rails) to prevent materials rolling/sliding.
- Maintain a **level landing** with clear tolerance between deck and gate to avoid snags; no tripping lips.

##### **Access, Use & Segregation**

- Establish **exclusion zones** beneath and around loading bays during lifting/landing. **No persons under suspended loads.**
- Coordinate with the **Traffic Management Plan**: banksman control, timed deliveries (avoid school drop-off/pick-up), and defined set-down/queuing areas.
- Provide clear **SWL signage** at eye level at each bay and on each lift serving the bay; display "In use/Out of service" status and level identification.
- Keep access routes to loading bays **unobstructed**, lit where required, and slip-resistant.

##### **Interface with Lifting Equipment**

- Lifting operations to be planned by a **competent person** with a written **Lift Plan** (crane/telehandler/hoist), including communication and exclusion controls.
- Set and maintain **minimum clearances** between forks/jibs and gates; gates must not foul plant or swing into public/pupil routes.
- Where materials hoists are used, provide **dedicated landing gates** interlocked to the hoist where applicable.

### Stability, Ties & Weather

- Provide ties/bracing/kentledge to resist vertical, horizontal and **wind loads**; check adjacent hoarding/scaffold does not reduce stability.
- Inspect and, if necessary, **close bays** in high winds or adverse weather per manufacturer's limits and the Temporary Works design.

### Inspection & Maintenance

- Pre-use inspection after erection/alteration and **daily** thereafter by a competent person; re-inspect after adverse weather/impact.
- Record inspections in the scaffold register. Remove/downgrade **immediately** if defects are found.

### Housekeeping & Fire Safety

- Keep decks clear of debris; **no hot-works waste** or flammables stored on bays.
- Do not stack above the posted **SWL**; use **even distribution** of loads and restrain tall/unstable items.

### Removal

- Loading bays and gates to remain in service **only while required**. Remove/alter **by the scaffold contractor** on instruction, and make good adjacent edge protection.

### 1.7.5 – PROTECTION TO LIVE SCHOOL AREAS

- Scaffold protection at entrances/exits: Provide overhead protection and ground-level segregation to all live entrances, exits and circulation routes beneath roof-work areas. Use covered walkways/gantries or protection fans (min. clear headroom 2.4 m), with debris netting/brick guards and double toe-boards as required. Maintain emergency egress at all times; establish exclusion zones during lifting/stripping; no work over open doors.
- All roof works scaffolding shall include continuous, stable fencing/hoarding (minimum 2.0 m high solid hoarding at ground-level in all play areas and live school areas to close off any unauthorised access or student access below the scaffolding and works areas.
- Temporary works & stability: Treat hoarding, fencing and scaffolds as Temporary Works. Provide design (including wind loading), fixings/kentledge, and checks to ensure stability at all times. Gates must not swing out over public footways or pupil routes.
- Compliance: Design, erection, inspection and use of scaffolds/hoardings to comply with the HSA Code of Practice and EN 12811 (or equivalent), and with the Contractor's approved Traffic Management Plan.

### 2. SEQUENCING / PHASING OF WORK / PROTECTIONS– LIVE SCHOOL ENVIRONMENT

- The chosen Contractor shall include for onsite phasing of works zones as proposed works will take place in active school property.
- All Tendering Contractor to include proposed phasing of works and methodology of construction program within the tender submissions and the chosen contractor will liaise and agree project masterplan and phasing with Architect prior to commencement of proposed works.
- Refer to architects' drawings for proposed extent of phased work zones / sequencing (Draft). All work zones and phasing TBC prior to commencement on site.
- No works shall take place outside the agreed zones of works without prior agreement with Architect and Client.
- As mentioned above Heras or equivalent fencing to be erected to separate active school areas from all work zones, temporary access roadway and site compound.

### Access, Circulation & Fire

- Keep **school circulation corridors live** at all times. Where works interface with live routes, provide robust physical separation, edge protection and overhead protection as required.
- Maintain **fire exits, assembly points and vehicle emergency access**; agree any temporary diversions in advance and sign them clearly.

#### **Services & Interfaces**

- Identify and protect all existing **utilities, ICT, alarms and life-safety systems**. Any isolations or changeovers to be planned, notified and executed with permits and temporary measures in place.

#### **Traffic & Deliveries**

- Stagger deliveries to avoid school start/finish peaks. All vehicles to use **agreed routes**, banksman-controlled reversing and gate protocols. Keep public roads and school forecourts clear.

#### **Housekeeping & Welfare**

- Maintain clean, safe boundaries; control dust, noise, fumes and vibration. Keep gutters/drains clear where works adjoin live areas.

#### **Communication & Approvals**

- Hold **weekly coordination meetings** with the ER and school to review progress, next-phase readiness and risk hot-spots.
- Phase changes, temporary works affecting the school, or any deviation from the approved plans require **prior written sign-off**.

#### **Records**

- Keep a **Phasing Compliance File**: approved drawings, permits, daily diaries, inspection records, fencing checks, TMP/PMP audits and stakeholder notices.

### 2.1 – DT PHASING PRINCIPLES

- The Design Team (DT) phasing is set up to ensure the school can safely remain operational throughout the proposed works.
- The Contractor may overlap / run phases in parallel only with the Employer's Representative (ER) written approval and where the school can safely function as a live environment.
- Contractor shall provide a Master Phase Plan together with revised before each phase where agreed changes occur throughout the work, including segregation, safe routes, emergency egress, and delivery times (avoid pupil drop-off/collection).
- Maintain temporary weathering and building security at all times between phases.
- Each phase requires DT/ER sign-off of pre-start conditions and completion criteria before the next phase (or overlap) proceeds.
- Maintain teaching, circulation, fire escape and essential services without compromise. Any temporary interruptions require **prior written approval** from the Employer's Representative (ER) and school management.

### 2.2 - APPROVALS (APPLY TO ALL PHASES)

- Pre-start: Phase-specific RAMS, Traffic Management Plan, hoarding/segregation plan, decant plan (as applicable) shall be issued to ER for approval.
- Mid-phase reviews: Weekly coordination with ER to confirm routes, egress and programme impacts.
- Completion: Area clean, safe, services reconnected, certification/commissioning complete, defects list agreed; soft landscaping made good on handover subject to season/weather; documentation issued (as-builts, O&M updates).

### 2.3 - CO-ORDINATION OF SITE WORKS

- The Main Contractor shall be responsible for the co-ordination and proper execution and completion of the works and the protection of the site.
- The Main Contractor shall construct the works in accordance with their programme obtain and submit to the Architect / Engineer for approval for all builder's work details including shop drawings from sub-contractors and suppliers where required.
- The Contractor shall arrange and attend such meetings as necessary to ensure that the information requirements of all sub-contractors are met and to establish their works requirements before the work is put in hand, to avoid conflict with other work.
- The Contractor shall be responsible for carrying out of the works in accordance with the drawings and Architect's instructions and shall be responsible for rectifying errors at their own expense.

### 2.4 - TIMES WHERE CONSTRUCTION CAN TAKE PLACE

**NOTE WORKS WILL BE CARRIED OUT WITHIN ACTIVE SCHOOL ENVIRONMENT SURROUNDING TEMPORARY COMPOUND & WORKS AREA, WORKS ARE TO BE CARRIED OUT BETWEEN 8.00 AND 17.30 FROM MONDAY TO FRIDAY AND SATURDAYS TO BE FROM 9.00 – 13.00**

- Dates where works take place may be subject to minor revision prior to the successful appointment of the Contractor.
- Architect / Contractor to liaise prior to works commencing in order to agree a schedule prior to Contract Agreement.

#### **Programme Constraints & Blackout Periods**

- **No works are permitted during State Examinations** or other blackout periods notified by the school. Include for programme re-sequencing to comply.
- Restrict noisy/vibratory operations to **agreed area** only. No out-of-hours or weekend working without prior written approval.

### 2.5 - INCLEMENT WEATHER & TEMPORARY SEALING THE BUILDING

- All roof / building areas handed over to the main contractor shall be protected as necessary during inclement weather throughout the full duration of works including the protection of ongoing works, contractor shall supply all necessary sheathing, screens and covers etc.
- The chosen contractor shall provide the provision of temporary sealing the building during works if the situation arises which causes works to temperately stop on site as the building is currently fully operational.
- Any work damaged as a result of inclement weather shall be removed and re-instated by the Contractor as its own expense.

### 2.6 - TIME FOR COMPLETION

- The time for completion shall date from the day when instructions shall be sent to the Contractor to begin the works.
- The work must be carried out with due diligence and expedience and the whole works including any additional works ordered by the Architect must be completed to the Architect's satisfaction.
- The Architect shall be at liberty, however, to extend the time for completion of the works if in his opinion completion shall be delayed by circumstances outside the control of the Contractor.

- Possession of the site shall be granted as soon as is possible after agreement of contract and works shall commence as soon as is possible.
- Completion of the works shall be as soon as is possible after possession of site.
- The Project Supervisor Construction Stage shall review the duration of the proposed program for the project as advised by the Contractor and shall confirm (or otherwise comment) on the practicality of same.
- The works shall be considered to be complete only from the date of issue by the Architect of the Certificate of Practical Completion.

## 2.7 - PROTECTION OF EXISTING BUILDING – INTERNAL FINISHES & SERVICES

- Contractor shall provide protection to the existing fixed joinery; wall finishes and floor finishes for the full extent of the access route and adjoining works areas & all contractor's construction access routes (personnel and or materials) to the proposed works area.
- Contractor is advised to carry out a photographic record of the existing conditions within the agreed access routes and works areas prior to commencement of works.
- Existing floor finishes,
- Walls, ceilings, skirtings, architraves, doors, frames, glazing, balustrades, handrails.
- Fitted furniture/joinery, lockers, reception counters, noticeboards.
- Electrical, ICT, mechanical and life-safety services and equipment.
- All school contents within or adjacent to the works and transit routes

### Contractor's Responsibility

- The Contractor is fully responsible for preventing damage, water ingress, dust, debris, impact and contamination to all protected elements and access routes.
- All protection, temporary works, cleaning and making good are deemed included in the Contract Sum.
- No additional payment for reasonable protective measures or revisions to logistics.

### Pre-Works Survey

- Carry out a condition survey of:
  - All rooms beneath roof works
  - All access routes to internal ceiling / M&E upgrades (corridors, stairs, lobbies, external paths).
- Record with dated photographs; issue to ER before works commence.

### Protection to Floors & Access Routes

- Provide continuous robust hard protection (e.g. hardboard/ply/composite protection boards over cushioning layer) to:
  - All circulation routes used for roof works and internal upgrades (corridors, stair cores, lobbies).
  - Areas adjacent to the lift shaft and delivery set-down points.
- Ensure protection is:
  - Non-slip, trip-safe, securely fixed.
  - Installed to avoid damage to finishes.
  - No wheeled plant, pallet trucks, trolleys or barrows on unprotected floors or stair treads.

### Protection to Walls & Joinery

- Install corner guards, edge protection, padding or sacrificial board to:
  - Wall corners, reveals, door frames, stair strings, handrails, balustrades, lift lobby finishes.
- Protect glazing and vision panels along routes and near workfaces with suitable film/boards.

- Do not adhere protection directly to delicate finishes without ER-approved low-tack systems.

### **Protection to Electrical, ICT & Life-Safety Services**

- Identify all affected services on routes and at workfaces (including fire alarm devices, detectors, call points, PA, CCTV, ICT, emergency lighting).
- Provide coverings and shielding against dust, debris and water.
- Do not interfere with or isolate life-safety and critical systems without written approval, permits and agreed temporary measures.
- Maintain functionality and visibility of emergency signage and alarms.

### **Weather & Water Ingress Control (Roof Works Above Occupied Areas)**

- Plan sequencing so that roof stripping and new works are limited to areas that can be made fully weather-tight the same day, or are protected with robust temporary coverings.
- Prevent any run-off entering the building fabric
- In the event of water ingress:
  - Immediately protect contents and finishes; mitigate electrical risks.
  - Notify ER and School/Client.
  - Dry, decontaminate and fully make good all affected finishes, services and equipment at Contractor's cost

### **Dust, Debris & Noise Management**

- Provide sealed polythene screens, rigid hoardings or temporary ceilings beneath roof works to contain dust.
- Use controlled removal methods; no free-fall debris onto unprotected surfaces.
- Keep noise, vibration and fumes within agreed limits for a live school; coordinate with class times and exams.

### **Inspection & Maintenance of Protection**

- Inspect all protective measures daily and after heavy works or adverse weather.
- Repair, re-secure or replace damaged protection immediately.
- Keep access routes clean, free of trip hazards, debris and trailing cables.

### **Making Good & Handover**

- On completion of roof and lift works, remove all protection carefully.
- Clean all affected spaces, including access routes, lobbies and adjacent rooms.
- Make good any damage:
  - Floors, walls, joinery and finishes to match existing in full panels/areas as necessary.
  - Electrical/ICT/life-safety components to be repaired or replaced and re-certified as required.
- Carry out final walk-through with ER and Client to confirm acceptance prior to demobilisation.

## **2.8 - EXISTING SCHOOL SUPPLIES**

- The Contractor shall liaise with the Architect / BOM to arrange the removal of all existing school supplies, non-building related materials (excluding loose furniture, see below) personal belongings from the agreed works area by the BOM.
- The Contractors programme shall allow adequate notice and timing for the decamp of the existing spaces, exact dates and timing shall be agreed prior to commencement of works on site.
- The Contractor shall provide for the careful removal of the existing IT Equipment in the works areas, contractor shall liaise with the Architect / BOM to agree the timing of removal together with

identification of a location for the safe storage in the school until they can re-installed in the new ceilings.

## 2.9 - EXISTING LOOSE FURNITURE

- The Appointed contractor shall provide for moving of the existing loose furniture to an alternative location within the existing school building prior to commencement of proposed roof works. No works shall take place until the area is fully clear of existing loose furniture and non-building related materials (including personal belongings).

## 2.10 – INTERNAL CLEANING

- The contractor shall remove all rubbish and debris from the site of the works and maintain in a relatively clean condition for the duration of the contract and shall effectively clean all areas and make good all defacements at completion and leave all to the entire satisfaction of the Architect.
- Provide for cleaning the building inside and out, and leaving the whole of the works clean, ready for occupation and to the satisfaction of the Architect on completion.
- Contractor shall provide a phase by phase cleaning of all the internal areas occupied by the contractor together with the associated access route prior to the handover and occupation by the school at completion.

## 3. SITE FOREMAN

- The Contractor shall keep a nominated competent foreman constantly on the works.
- The foreman shall be required to remain based onsite and shall be empowered to act in the Contractor's absence and for all purposes as the Contractor's general agent.
- The nominated foreman is responsible for scheduling, co-ordinating and supervising the work of all site operatives, ensuring that all work is delivered safely on time along with managing equipment and materials required on behalf of the main contractor.
- The foreman shall be responsible for the supervision of provision of informed instruction to personnel for the duration of the works along with ensuring all Company and legal regulations are implemented, that all required documentation is completed as necessary and recording daily work on site.
- The foreman shall have good experience in carpentry, joinery & plastering and carry out the following key responsibilities :
  - Operate and promote safe working on site
  - Implement Company requirements and legal regulations, paying specific attention to HSE Legislation and Quality
  - Carry out and record site inspections
  - Ensure all works are carried out in line with approved method statements
  - Conduct and amend risk assessments and deliver toolbox talks/briefings
  - Ensure site personnel have job relevant training requirements which is entered on site personnel training register
  - Lead by example to others on site
  - Ensure the completion of works on time
  - Schedule, co-ordinate and supervise the daily activities of site operatives
  - Share and pass on knowledge to teams
  - Ensure site operatives complete all required documentation
  - Ensure documentation is properly completed / provided to DT

- Track and document daily work productions
- Organise and monitor the work of subcontractors on site
- Equipment and materials management
- Co-ordinate delivery of materials on site

#### 4 MINIMUM PERFORMANCE STANDARDS OF ROOF FINISHES.

##### 4.1 - DoES ROOF DESIGN & CONSTRUCTION

- Proposed Roof works shall be in accordance with the requirements of TGD 021 – 7 Minimum Performance Standards of Roof Finishes.
- These standards apply to all Primary construction projects, including special schools, funded in part or in whole by the Department of Education and Skills including Summer Works, Devolved Grant, Emergency Works and other similar schemes.
- The Minimum performance criteria within these guidelines has been updated to reflect TGD Part L of the Building Regulations 2017 Buildings, other than Dwellings, and the Department of Education and Skills TGD-033 requirements to achieve Nearly Zero Energy Buildings. Note the specification may not use minimum standards and where available will superseded tiemonium standard.
- Notwithstanding the above, the design and construction of all roofs shall comply with the relevant I.S., EN and B.S. Standards and meet the requirements of the current Building Regulations parts A to M.

##### 4.2 - GENERAL PERFORMANCE REQUIREMENTS

- Flexible waterproof membranes must have a 30-year manufacturer durability statement, along with a minimum of a 20-year manufacturer insurance backed guarantee for materials, workmanship and the entire installation on site for the specific project
- The design of roofs, roof systems and selection of roofing materials and finishes must consider the geographic location, siting and exposure of the building, along with any particular or extreme conditions it may be exposed to, eg, marine or coastal environments, wind velocities, unauthorised roof access/anti-social behaviour et
- Roof penetrations shall be kept to minimum. Where such penetrations occur all associated flashings and ancillary weathering components shall be of a similar performance and durability to the roof weathering material. Any sealants used must conform to the manufacturer's certification and approved details.
- Only suitably qualified and trained personnel shall undertake installation of roofing systems on school projects. The Design Team shall seek evidence of suitability and training directly from the roofing material manufacturer of such personnel.
- The roofing manufacturer shall undertake periodic inspections during the installation. Upon completion of all roof construction elements, a mandatory final inspection and written report, with confirmations on the adequacy of construction, materials, finishes etc., must be undertaken and completed by the roofing manufacturer. This written report shall be submitted for approval of to the DT leader and included in the handover documentation upon completion of the project.
- Roof systems shall incorporate a suitable vapour control layer (VCL) to the underside of the thermal insulation in accordance with TGD Part F. For built up roof systems, in school environments a steel liner sheet is not suitable for this purpose and a separate VCL is required

- The design and installation of roofing materials should not place an undue burden on the school authority with respect to maintenance and inspection regimes. All such requirements shall be clearly outlined to the school authority at the handover stage of the project.
- For roof refurbishment projects, the Design Team shall fully assess the suitability of the existing roof materials and substrates. Furthermore, the Design Team shall obtain from the roof manufacturer confirmation of the compatibility of the proposed roofing material with the existing roof finish in accordance with the required manufacturers certification and guarantees.

### 4.3 - COMPLIANCE REQUIREMENTS

#### General

- All proposed designs for roofs for use in educational facilities must conform to the minimum performance criteria contained within this TGD and as set out in Table 1 below.
- The entire roof system build-up and associated components must have current NSAI or BBA certification.
- All associated flashing, upstands and ancillary weathering components shall be of a similar performance as the roof weathering sheet and shall be included in the required roof certification, guarantees and warranties. The use of third-party materials not covered by such certification, guarantees and warranties is not acceptable

#### Independent Accreditation

- The Design Team shall obtain evidence of independent test reports and certification for each of the following performance criteria contained in Table 1.  
(Note: The below Table 1 is not considered an exhaustive list of required performance criteria for all roof systems or materials and it is the responsibility of the individual Design Teams to ensure the designed roof system for the particular project adheres to the Building Regulations and relevant standards including but not limited to structural performance, fire performance, wind resistance, impact resistance etc. and obtain the associated certification from the roofing manufacturer)

**Table 1 – Performance Criteria**

| Reference                                                                     | DOES Requirements                                                                                                                                                           |
|-------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Air Permeability (m/h/m2 @ 50pa)                                              | ≤3                                                                                                                                                                          |
| Watertightness<br>BS EN 14509:2013<br><br>BS EN 1928:2000<br>BS EN 13956:2012 | Class A: Demanding applications with heavy rain and wind. The assembly shall be watertight up to 1,200 Pa (composite panel system)<br>Class B : 150 kPa (roofing membranes) |
| Thermal Movement<br>BS5427:2016+A1:2017                                       | Code of practice for the use of profiled sheet for roof and wall cladding on buildings provides guidance on allowable tolerances                                            |
| Durability                                                                    | Flexible waterproof membranes: 30 year manufacturer durability statement with 20 year manufacturer insurance backed guarantee for materials, workmanship and installation.  |
| Acoustic Performance<br>ISO 10140-1:2010/ 2:2014                              | The Indoor Ambient Noise Levels (IANL) must not exceed a 30dB limit above Table 1.0 levels contained in TGD-021-5 at the standardised heavy rainfall rate of 40mm/hr.       |

|                                                                                                                                        |                                                                                                                                                                                                                                                  |
|----------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Thermal Transmittance<br>EN ISO 6946: 2017 & BR 443                                                                                    | Minimum 0.15W/m2K                                                                                                                                                                                                                                |
| Thermal Bridging & surface condensation.<br>IS EN ISO 13788:2012;<br>IS EN ISO 10211:2007 Part 1 & 2; BRE Report BR 497 (2nd Edition). | The critical temperature factor (fCRsi) for avoiding mould growth in School Buildings is 0.75; Sports Halls, Kitchens & Canteens is 0.8 (TGD Part L D.2 & BRE IP1-06).                                                                           |
| Interstitial Condensation Risk Analysis<br>IS EN ISO 13788:2012 & BS 5250:2011+A1:2016.<br>IS EN ISO 15026:2007                        | Humidity Class 4 buildings should be used for analysis under IS EN ISO 13788.<br><br>In addition to the "Glaser method" (IS EN ISO 13788) transient hygrothermal simulation should be undertaken (IS EN ISO 15026) to assess condensation risks. |
| Fire classification to BS EN 13501-5                                                                                                   | B <sub>ROOF</sub> (t4)                                                                                                                                                                                                                           |

#### 4.4 - GENERAL MAINTENANCE PROCEDURES

- These practises should be carried out after any building maintenance, plant and equipment work on the roof, after major storms, or at six monthly intervals (ideally Spring & Autumn) as a minimum in accordance with BS 6229:2018 Chapter 7.
- All maintenance ensures the roof continues to perform, and that any potential problems are identified at an early stage. Regular routine maintenance must also be carried out, especially where standing water exists to deter a build-up of algae or silt, which may in turn have a detrimental impact on the surface of the waterproofing, e.g., 'mud curling'. Any failures of the roofing system resulting from a lack of maintenance may not be covered under the guarantee. Reference should also be made to the guarantee documents to identify if there are any further inspections that may be required to ensure the continuation of the guarantee period.
- Ensure safe access can be gained to the roof and that relevant Health and Safety procedures are followed.
- Sharp debris can damage the membrane so a visual inspection is advised. Remove all debris from the roof surface, outlets, chutes, gutters, inside inspection chambers or access grilles etc. Ensure water runs to and drains freely from downpipes/outlets. Debris must not be flushed down rainwater pipes.
- Cut back tree limbs that overhang the roof to give a 1 metre clearance outside the roof edge. This will significantly reduce blockage of drainage ways due to fallen leaves.
- Remove any plant growth that may have occurred, taking care not to damage the waterproofing.
- Ensure protective metal flashings and termination bars remain securely fixed, repair or replace as necessary.
- Examine all mastic sealant and mortar pointing for signs of degradation, repair or replace as necessary.
- Check that all hard landscaping or proprietary surfacing finishes i.e. resin bound gravels, promenade tiles or paving slabs are securely fixed/adhered to the roof surface and in good condition.

- Ensure that any items of plant/equipment that may have been introduced to the roof are sited on a suitable slab or proprietary system, with additional compatible surface protection beneath, and that any fixings that may have been used to secure them, do not penetrate the waterproofing.
- Look for signs of contamination including leaks caused by plant equipment which might degrade the waterproofing. Follow plant manufacturer's maintenance procedures accordingly to rectify the issue.
- The building owner should keep a record of all inspections and maintenance carried out on the roof. Any signs of damage, contamination or degradation should be reported to Bauder Limited or equivalent immediately, so that arrangements can be made for remedial work to be carried out if necessary.
- Any repairs to the waterproofing should be carried out by a Bauder or equivalent Approved Roofing Contractor, ideally the original installing Roofing Contractor.
- When carrying out any maintenance to adjoining roof areas, care must be taken not to damage the landscaping or the waterproofing system. If it is considered that either element has been affected, then contact Bauder or equivalent for advice. Any waterproofing damage caused after completion of the original installation may invalidate the guarantee.
- Any unauthorised alterations to the waterproofing system will invalidate the guarantee. If such a situation should arise, then contact Bauder or equivalent for advice on how the alteration can be incorporated without affecting the guarantee.

#### 4.5 - MARINE / COASTAL EXPOSURE REQUIREMENTS – ROOF SYSTEMS

- The existing school building is located in Ballygall, Co. Dublin and is subject to coastal / marine exposure conditions, including salt-laden air, wind-driven rain and increased risk of corrosion. All new roof systems, associated flashings, trims, fixings, battens, counter battens, support rails, brackets, outlets, rainwater goods, sealants and ancillary components shall be selected, designed and installed as suitable for a marine / coastal environment.
- The Contractor shall ensure that all proposed roof systems and associated components are appropriate for the site exposure and shall allow for any enhanced specification requirements necessary to achieve the required performance, durability and guarantee / warranty periods. Written confirmation shall be provided from each roofing system manufacturer / supplier confirming that the proposed roof system and all associated components are suitable for the marine / coastal exposure conditions at the site.

### 5 REMOVAL AND DISPOSAL OF EXISTING MATERIALS

#### 5.1 – GENERAL REMOVALS

- To be read in conjunction with additional removal specification clauses for each roof below.
- Where items are to be removed, contractor is to include for mentioned and associated items to be made good to match existing and for the responsible disposal of the mentioned item unless specified otherwise.
- The contractor is to liaise with the Architect prior to removals.
- All specified removals to be carefully removed and responsibly carted off site unless specified otherwise. All removal conditions to be made good for the proposed works.
- Unless otherwise described all old materials arising from removals & alterations are to become the property of the Contractor who is to allow any credit therefore. Clearing away of such old materials, including deleterious or hazardous materials, shall be deemed to be included within the removal items.

- Proper and appropriate methods of disposal of deleterious & hazardous materials shall be the responsibility of the main contractor.
- Dust shall be kept to a minimum. Removal works shall be carried out in accordance with 'Code of Practice for full and partial demolition' B.S.6187: 2011
- The use of explosives shall not be permitted. Burning of site materials arising shall not be permitted. The contractor shall be responsible for protecting remaining adjoining buildings and paths and for providing adequate supports at all stages of removal works. The contractor shall be held responsible for any damage to adjoining buildings or structures caused during the works or as a result of works. Temporary screens, coverings and protection materials shall be provided by the Contractor.
- In the event a material can't be removed for structural or health and safety reasons the contractor is to notify the architect and an alternative solution will be considered.

## 5.2 - ROOF 1 REMOVALS

- Contractor shall provide the **complete removal and disposal of the existing roof system** and strip back to existing structure with asphalt as indicated on Architects drawings. Proposed removals shall include all membranes, insulation etc back to existing structure to allow for the installation of a new complete warm roof build up.
  - **NOTE: This roof includes a woodwool slab which is considered a Fragile material where affected by water ingress**
  - Removal and disposal of existing reinforced bitumen roof covering,
  - Removal and disposal of existing tapered insulation and any associated membranes,
  - Preparation works to existing asphalt layer on concrete structure
  - Removal and disposal of existing ceiling together with associated lighting. Note protective services shall be temporary altered and reinstated in new ceiling.
- Removal and disposal of the **3no. existing rooflights** and associated upstands, flashings and sundries as indicated on architects' drawings. Rooflight alterations shall be read in conjunction with proposed works and specification clauses below to provide the required structural openings.
- Removal and disposal of the **1no. existing mechanical vent** and associated upstands, flashings and sundries as indicated on architects' drawings. contractor shall provide new penetration / mech vent detail, Mechanical Vent alterations shall be read in conjunction with M&E Engineers package.
- Removal and disposal of existing **perimeter / edge upstand** together with associated bitumen waterproofing down to existing concrete ring beam.
- Removal and disposal of existing **masonry capping's** to gable upstand in conjunction with the existing roof finish.
- Removal and disposal of **2 no. Existing rainwater outlets** consisting of vertical outlet. New outlets shall be provided in conjunction with new roof waterproofing system to Architects / Manufactures detail.
- Contractor shall provide the complete removal and disposal of **existing clerestory windows** and associated actuators including all brackets , fixings and sundries. Existing Structural opening shall be prepared for the construction of new upstand and installation of a new window system.
- Removal and disposal of Existing **window flashings, linings, acoustic/fire break, external Cill and sealants** to all windows to be replaced.

- Existing **lightweight window upstand** shall be removed and disposed back down to concrete ring beam (height approx. 360mm – 450mm ) including all associated fitting, brackets and steel lining internally.
- Existing mechanical vent through the existing upstand shall be carefully removed and new penetration detail provided within new upstand.
- Contractor shall include for **protection, temporary support, alteration, relocation and reinstatement** of all existing electrical cabling, terminations, containment and associated equipment on or passing across the roof.
- Refer to section below for internal removals / alterations to existing ceilings & M&E, to be read in conjunction with Architect drawings and M&E package.

### 5.3 - ROOF 2 REMOVALS

- Contractor shall provide the **complete removal and disposal of the existing roof system** and strip back to existing concrete structure as indicated on Architects drawings. Proposed removals shall include all membranes, insulation etc back to existing structure to allow for the installation of a new complete warm roof build up.
  - Removal and disposal of existing Trocal PVC membrane, including embossed overlay
  - Removal and disposal of existing tapered PIR insulation.
  - Preparation works to existing asphalt layer on concrete structure.
  - Existing Trocal PVC membrane shall be removed and disposed from all edge and gable upstands. Existing timber substrate shall be reviewed on site and removed where water ingress or alterations for the new system are required.
- Removal and disposal of existing **perimeter / edge upstand** together with associated outlets to existing gutter system.
- Removal and disposal of existing **Fascia Cladding & Highline / metal gutter system** to full perimeter each side of existing roof above clerestory glazing including any associated fixing and brackets.
- Removal and disposal of **3no. Existing downpipes from Highline / metal gutter system** together with associated fixings & brackets, Refer to Architects Spec clause below for specification of new downpipes. Aluminium boxing to existing downpipes shall be removed and disposed.
- Removal and disposal of the **2no. existing rooflights** and associated upstands, flashings and sundries as indicated on architects' drawings. Rooflight alterations shall be read in conjunction with proposed works and specification clauses below to provide the required structural openings.
- Removal and disposal of the **1no. capped upstand** and associated sundries as indicated on architects' drawings.
- **1no. capped vent / service penetration** shall be further investigated and removed where no longer required, refer to architects' drawings for location.

- Temporary Removal and storage of the **1no. existing Science lab vent** together with the removal and disposal upstand, flashings and sundries as indicated on architects' drawings. Contractor shall provide new penetration / vent flue to suit existing system in conjunction with M&E Engineers package.
- Contractor shall include for **protection, temporary support, alteration, relocation and reinstatement** of all existing electrical cabling, terminations, containment and associated equipment on or passing across the roof.
- Refer to section below for internal removals / alterations to existing ceilings & M&E, to be read in conjunction with Architect drawings and M&E package.

#### 5.4 - ROOF 3 REMOVALS

- Contractor shall provide the **complete removal and disposal of the existing roof system** and strip back to existing concrete structure as indicated on Architects drawings. Proposed removals shall include all membranes, insulation etc back to existing structure to allow for the installation of a new complete warm roof build up.
  - Removal and disposal of existing reinforced bitumen roof covering,
  - Removal and disposal of existing tapered insulation and any associated membranes,
  - Preparation of existing asphalt on existing concrete decking.
- Removal and disposal of existing **masonry capping's** to gable upstand in conjunction with the existing roof finish.
- Removal and disposal of **4 no. Existing 150mm rainwater outlets** consisting of vertical outlet. New outlets shall be provided in conjunction with new roof waterproofing system to Architects / Manufactures detail.
- Removal and disposal of the **4no. existing rooflights** and associated upstands, flashings and sundries as indicated on architects' drawings. Rooflight alterations shall be read in conjunction with proposed works and specification clauses below to provide the required structural openings.
- Contractor shall provide the complete removal and disposal of **existing clerestory windows** and associated actuators including all brackets , fixings and sundries. Existing Structural opening shall be prepared for the construction of new upstand and installation of a new window system.
- Removal and disposal of Existing **window flashings, linings, acoustic/fire break, external Cill and sealants** to all windows to be replaced.
- Existing **lightweight window upstand** shall be removed and disposed back down to concrete ring beam (height approx. 360mm – 450mm ) including all associated fitting, brackets and steel lining internally.
- Removal and disposal of existing **steel guardrail** between roof 3 and roof 3A together with associated brackets and fittings.
- Existing **change in level upstand** between roof 3 and roof 3A shall be removed and disposed in conjunction with the removal of the bitumen finish roof systems.

- Contractor shall include for **protection, temporary support, alteration, relocation and reinstatement** of all existing electrical cabling, terminations, containment and associated equipment on or passing across the roof.
- Refer to section below for internal removals / alterations to existing ceilings & M&E, to be read in conjunction with Architect drawings and M&E package.

### 5.5 - ROOF 3A REMOVALS

- Contractor shall provide the **complete removal and disposal of the existing roof system** and strip back to existing concrete structure as indicated on Architects drawings. Proposed removals shall include all membranes, insulation etc back to existing structure to allow for the installation of a new complete warm roof build up.
  - Removal and disposal of existing reinforced bitumen roof covering,
  - Removal and disposal of existing insulation and any associated membranes,
  - Preparation works to existing asphalt layer on concrete structure.
  - Reinforced bitumen abutment to existing brick shall be removed in conjunction with the full roof system
- Removal and disposal of existing **perimeter / edge upstand** together with associated reinforced bitumen finish down stand and sundries as indicated on architects' drawings.
- Removal and disposal of existing **Fascia** to full perimeter of existing roof including any associated fixing and brackets for the provision of new to suit the new raised roof levels.
- Removal and disposal of **existing outlet** together with any associated materials, Note: existing outlet connects into the downpipe which drains Roof 2. New outlets shall be provided in conjunction with new roof waterproofing system to Architects / Manufactures detail.
- Contractor shall include for **protection, temporary support, alteration, relocation and reinstatement** of all existing electrical cabling, terminations, containment and associated equipment on or passing across the roof.
- Refer to section below for internal removals / alterations to existing ceilings & M&E, to be read in conjunction with Architect drawings and M&E package.

### 5.6 - ROOF 4 REMOVALS

- Contractor shall provide the **complete removal and disposal of the existing roof system** and strip back to existing concrete structure as indicated on Architects drawings. Proposed removals shall include all membranes, insulation etc back to existing structure to allow for the installation of a new complete warm roof build up.
  - Removal and disposal of existing Trocal PVC membrane, including embossed overlay
  - Removal and disposal of existing tapered PIR insulation.
  - Preparation works to existing asphalt layer on concrete structure.
  - Existing Trocal PVC membrane shall be removed and disposed from all edge and gable upstands. Existing timber substrate shall be reviewed on site and removed where water ingress or alterations for the new system are required.

- Removal and disposal of existing **perimeter / edge upstand** together with associated outlets to existing gutter system.
- Removal and disposal of existing **Fascia Cladding & Highline / metal gutter system** to full perimeter each side of existing roof above clerestory glazing including any associated fixing and brackets.
- Gutter on roof side includes an existing electrical conduit, contractor shall include for **protection, temporary support, alteration, relocation and reinstatement** of all existing electrical cabling, terminations, containment and associated equipment on or passing across the roof.
- Removal and disposal of **2no. Existing downpipes from Highline / metal gutter system** together with associated fixings & brackets, Refer to Architects Spec clause below for specification of new downpipes. Aluminium boxing to existing downpipes shall be removed and disposed.
- Removal and disposal of the **1no. existing rooflight** and associated upstand, flashings and sundries as indicated on architects' drawings. Rooflight alterations shall be read in conjunction with proposed works and specification clauses below to provide the required structural openings.
- 1 No. **Existing Mechanical Vent** shall be temporary removed, stored and reinstalled on new upstand with new waterproofing detail and upstand provided upon completion.
- **Existing plant room** shall be altered in conjunction with new roof waterproofing system,
  - Contractor shall temporarily remove, alter and reinstate the existing profiled metal cladding to the plant room where required to facilitate the formation of the new roof upstand / abutment detail, all in accordance with the Architect's drawings, details and the roof system manufacturer's requirements.
  - Works shall include the careful removal of existing profiled metal cladding panels, associated trims, flashings, fixings and base rail components as required, alteration of the cladding height, and reinstallation of the cladding with new profiled base rail, closures, fixings, flashings and sealants to provide a complete weather-tight installation.
- Refer to section below for internal removals / alterations to existing ceilings & M&E, to be read in conjunction with Architect drawings and M&E package.
- Contractor shall provide the **complete removal and disposal of the existing plant room roof system** and strip back to existing structure as indicated on Architects drawings. Proposed removals shall include all membranes, insulation etc back to existing structure to allow for the installation of a new complete warm roof build up.

#### 5.7 - ROOF 5 REMOVALS

- Contractor shall provide the **complete removal and disposal of the existing roof system** and strip back to existing concrete structure as indicated on Architects drawings. Proposed removals shall include all membranes, insulation etc back to existing structure to allow for the installation of a new complete warm roof build up.
  - Removal and disposal of existing reinforced bitumen roof covering,
  - Removal and disposal of existing tapered insulation and any associated membranes,

- Preparation works to existing asphalt layer on concrete structure.
- Removal and disposal of existing **encapsulated masonry capping** to gable upstand in conjunction with the existing roof finish.
- Removal and disposal of **4 no. Existing 150mm rainwater outlets** consisting of vertical outlet. New outlets shall be provided in conjunction with new roof waterproofing system to Architects / Manufactures detail.
- Removal and disposal of the **4no. existing rooflights** and associated upstands, flashings and sundries as indicated on architects' drawings. Rooflight alterations shall be read in conjunction with proposed works and specification clauses below to provide the required structural openings.
- Contractor shall provide the complete removal and disposal of **existing clerestory windows** and associated actuators including all brackets , fixings and sundries. Existing Structural opening shall be prepared for the construction of new upstand and installation of a new window system.
- Removal and disposal of Existing **window flashings, linings, acoustic/fire break, external Cill and sealants** to all windows to be replaced.
- Existing **lightweight window upstand** shall be removed and disposed back down to concrete ring beam (height approx. 360mm – 450mm ) including all associated fitting, brackets and steel lining internally.
- Removal and disposal of existing **steel guardrail** between roof 3 and roof 3A together with associated brackets and fittings.
- Existing **change in level upstand** between roof 3 and roof 3A shall be removed and disposed in conjunction with the removal of the bitumen finish roof systems.
- Contractor shall include for **protection, temporary support, alteration, relocation and reinstatement** of all existing electrical cabling, terminations, containment and associated equipment on or passing across the roof.
- Refer to section below for internal removals / alterations to existing ceilings & M&E, to be read in conjunction with Architect drawings and M&E package.

#### 5.8 - ROOF 5A REMOVALS

- Contractor shall provide the **complete removal and disposal of the existing roof system** and strip back to existing concrete structure as indicated on Architects drawings. Proposed removals shall include all membranes, insulation etc back to existing structure to allow for the installation of a new complete warm roof build up.
  - Removal and disposal of existing reinforced bitumen roof covering,
  - Removal and disposal of existing insulation and any associated membranes,
  - Preparation works to existing asphalt layer on concrete structure.
  - Reinforced bitumen abutment to existing brick shall be removed in conjunction with the full roof system

- Removal and disposal of existing **perimeter / edge upstand** together with associated reinforced bitumen finish down stand and sundries as indicated on architects' drawings.
- Removal and disposal of existing **Fascia** to full perimeter of existing roof including any associated fixing and brackets for the provision of new to suit the new raised roof levels.
- Removal and disposal of **existing outlet** together with any associated materials, Note: existing outlet connects into the downpipe which drains Roof 4. New outlets shall be provided in conjunction with new roof waterproofing system to Architects / Manufactures detail.
- Contractor shall include for **protection, temporary support, alteration, relocation and reinstatement** of all existing electrical cabling, terminations, containment and associated equipment on or passing across the roof.
- Refer to section below for internal removals / alterations to existing ceilings & M&E, to be read in conjunction with Architect drawings and M&E package.

#### 5.9 - ROOF 6 REMOVALS

- Contractor shall provide the **complete removal and disposal of the existing roof system** and strip back to existing concrete structure as indicated on Architects drawings. Proposed removals shall include all membranes, insulation etc back to existing structure to allow for the installation of a new complete warm roof build up.
  - Removal and disposal of existing Trocal PVC membrane, including embossed overlay
  - Removal and disposal of existing tapered PIR insulation.
  - Preparation works to existing asphalt layer on concrete structure.
  - Existing Trocal PVC membrane shall be removed and disposed from all edge and gable upstands, Existing timber substrate shall be reviewed on site and removed where water ingress or alterations for the new system are required.
- Removal and disposal of existing **perimeter / edge upstand** together with associated outlets to existing gutter system.
- Removal and disposal of existing **Fascia Cladding & Highline / metal gutter system** to full perimeter each side of existing roof above clerestory glazing including any associated fixing and brackets.
- Removal and disposal of **2no. Existing downpipes from Highline / metal gutter system** together with associated fixings & brackets, Refer to Architects Spec clause below for specification of new downpipes. Aluminium boxing to existing downpipes shall be removed and disposed.
- Removal and disposal of the **5no. existing rooflight** and associated upstand, flashings and sundries as indicated on architects' drawings. Rooflight alterations shall be read in conjunction with proposed works and specification clauses below to provide the required structural openings.
- 1 No. **Existing Mechanical Vent** shall be temporary removed, stored and reinstalled on new upstand with new waterproofing detail and upstand provided upon completion.

- 1 No. **Existing PVC roof penetration / vent pipe** shall be removed and disposed, new Bauder SVP Cover or equivalent Flat roof vent with rain cover shall be installed in conjunction with new waterproofing system.
- **Existing plant room** shall be altered in conjunction with new roof waterproofing system,
  - Contractor shall temporarily remove, alter and reinstate the existing profiled metal cladding to the plant room where required to facilitate the formation of the new roof upstand / abutment detail, all in accordance with the Architect's drawings, details and the roof system manufacturer's requirements.
  - Works shall include the careful removal of existing profiled metal cladding panels, associated trims, flashings, fixings and base rail components as required, alteration of the cladding height, and reinstallation of the cladding with new profiled base rail, closures, fixings, flashings and sealants to provide a complete weather-tight installation.
- Contractor shall provide the **complete removal and disposal of the existing plant room roof system** and strip back to existing structure as indicated on Architects drawings. Proposed removals shall include all membranes, insulation etc back to existing structure to allow for the installation of a new complete warm roof build up.
- Contractor shall include for **protection, temporary support, alteration, relocation and reinstatement** of all existing electrical cabling, terminations, containment and associated equipment on or passing across the roof.
  - Existing Antenna with ballast weight stand shall be temporarily relocated during works to facilitate the installation of new warm roof waterproofing system.
- Refer to section below for internal removals / alterations to existing ceilings & M&E, to be read in conjunction with Architect drawings and M&E package.

#### 5.10 - ROOF 7 REMOVALS

- Contractor shall provide the **complete removal and disposal of the existing roof system** and strip back to existing concrete structure as indicated on Architects drawings. Proposed removals shall include all membranes, insulation etc back to existing structure to allow for the installation of a new complete warm roof build up.
  - Removal and disposal of existing reinforced bitumen roof covering,
  - Removal and disposal of existing tapered insulation and any associated membranes,
  - Preparation works to existing asphalt layer on concrete structure.
- Removal and disposal of existing **masonry capping's** to gable upstand in conjunction with the existing roof finish.
- Removal and disposal of **4 no. Existing 150mm rainwater outlets** consisting of vertical outlet. New outlets shall be provided in conjunction with new roof waterproofing system to Architects / Manufactures detail.
- Removal and disposal of the **4no. existing rooflights** and associated upstands, flashings and sundries as indicated on architects' drawings. Rooflight alterations shall be read in conjunction with proposed works and specification clauses below to provide the required structural openings.

- Contractor shall provide the complete removal and disposal of **existing clerestory windows** and associated actuators including all brackets, fixings and sundries. Existing Structural opening shall be prepared for the construction of new upstand and installation of a new window system.
- Removal and disposal of Existing **window flashings, linings, acoustic/fire break, external Cill and sealants** to all windows to be replaced.
- Existing **lightweight window upstand** shall be removed and disposed back down to concrete ring beam (height approx. 360mm – 450mm) including all associated fitting, brackets and steel lining internally.
- Removal and disposal of existing **steel guardrail** between roof 3 and roof 3A together with associated brackets and fittings.
- Existing **change in level upstand** between roof 3 and roof 3A shall be removed and disposed in conjunction with the removal of the bitumen finish roof systems.
- Contractor shall include for **protection, temporary support, alteration, relocation and reinstatement** of all existing electrical cabling, terminations, containment and associated equipment on or passing across the roof.
- Refer to section below for internal removals / alterations to existing ceilings & M&E, to be read in conjunction with Architect drawings and M&E package.

#### 5.11 - ROOF 7A REMOVALS

- Contractor shall provide the **complete removal and disposal of the existing roof system** and strip back to existing concrete structure as indicated on Architects drawings. Proposed removals shall include all membranes, insulation etc back to existing structure to allow for the installation of a new complete warm roof build up.
  - Removal and disposal of existing reinforced bitumen roof covering,
  - Removal and disposal of existing insulation and any associated membranes,
  - Preparation works to existing asphalt layer on concrete structure.
  - Reinforced bitumen abutment to existing brick shall be removed in conjunction with the full roof system
- Removal and disposal of existing **perimeter / edge upstand** together with associated reinforced bitumen finish down stand and sundries as indicated on architects' drawings.
- Removal and disposal of existing **Fascia** to full perimeter of existing roof including any associated fixing and brackets for the provision of new to suit the new raised roof levels.
- Removal and disposal of **existing outlets** together with any associated materials, Note: existing outlets connect into the downpipes which drains Roof 6 and roof 8. New outlets shall be provided in conjunction with new roof waterproofing system to Architects / Manufactures detail.
- Contractor shall include for **protection, temporary support, alteration, relocation and reinstatement** of all existing electrical cabling, terminations, containment and associated equipment on or passing across the roof.

- Refer to section below for internal removals / alterations to existing ceilings & M&E, to be read in conjunction with Architect drawings and M&E package.

#### 5.12 - ROOF 8 REMOVALS

- Contractor shall provide the **complete removal and disposal of the existing roof system** and strip back to existing concrete structure as indicated on Architects drawings. Proposed removals shall include all membranes, insulation etc back to existing structure to allow for the installation of a new complete warm roof build up.
  - Removal and disposal of existing Trocal PVC membrane, including embossed overlay
  - Removal and disposal of existing tapered PIR insulation.
  - Preparation works to existing asphalt layer on concrete structure.
  - Existing Trocal PVC membrane shall be removed and disposed from all edge and gable upstands. Existing timber substrate shall be reviewed on site and removed where water ingress or alterations for the new system are required.
- Removal and disposal of existing **perimeter / edge upstand** together with associated outlets to existing gutter system.
- Removal and disposal of existing **Fascia Cladding & Highline / metal gutter system** to full perimeter each side of existing roof above clerestory glazing including any associated fixing and brackets.
- Removal and disposal of existing **Fascia Signage** together with any associated fixing and brackets.
- Removal and disposal of **3no. Existing downpipes from Highline / metal gutter system** together with associated fixings & brackets, Refer to Architects Spec clause below for specification of new downpipes. Aluminium boxing to existing downpipes shall be removed and disposed.
- Removal and disposal of the **7no. existing rooflights** and associated upstands, flashings and sundries as indicated on architects' drawings. Rooflight alterations shall be read in conjunction with proposed works and specification clauses below to provide the required structural openings.
- 2 No. **Existing PVC vent pipes** shall be removed and disposed, new Bauder SVP Cover or equivalent Flat roof vents with rain covers shall be installed in conjunction with new waterproofing system.
- Removal and disposal of the **1no. capped upstand** and associated sundries as indicated on architects' drawings, opening shall be infilled and new waterproofing system shall fully encapsulate.
- Contractor shall include for **protection, temporary support, alteration, relocation and reinstatement** of all existing electrical cabling, terminations, containment and associated equipment on or passing across the roof.
- Refer to section below for internal removals / alterations to existing ceilings & M&E, to be read in conjunction with Architect drawings and M&E package.

### 5.13 - ROOF 9 REMOVALS

- Contractor shall provide the **complete removal and disposal of the existing roof system** and strip back to existing structure with asphalt as indicated on Architects drawings. Proposed removals shall include all membranes, insulation etc back to existing structure to allow for the installation of a new complete warm roof build up.
- **NOTE: This roof includes a woodwool slab which is considered a Fragile material where affected by water ingress**
- Removal and disposal of existing reinforced bitumen roof covering,
- Removal and disposal of existing tapered insulation and any associated membranes,
- Preparation works to existing asphalt layer on concrete structure
- Removal and disposal of existing ceiling together with associated lighting. Note protective services shall be temporary altered and reinstated in new ceiling.
- Removal and disposal of existing **perimeter / edge upstand** together with associated bitumen waterproofing down to existing concrete ring beam.
- Removal and disposal of existing **masonry capping's** to gable upstands in conjunction with the existing roof finish.
- Removal and disposal of **2 no. Existing rainwater outlets** consisting of vertical outlet. New outlets shall be provided in conjunction with new roof waterproofing system to Architects / Manufactures detail.
- Contractor shall provide the complete removal and disposal of **existing clerestory windows** and associated actuators including all brackets , fixings and sundries. Existing Structural opening shall be prepared for the construction of new upstand and installation of a new window system.
- Removal and disposal of Existing **window flashings, linings, acoustic/fire break, external Cill and sealants** to all windows to be replaced.
- Existing **lightweight window upstand** shall be removed and disposed back down to concrete ring beam (height approx. 360mm – 450mm ) including all associated fitting, brackets and steel lining internally.
- Existing mechanical vent through the existing upstand shall be carefully removed and new penetration detail provided within new upstand.
- Contractor shall include for **protection, temporary support, alteration, relocation and reinstatement** of all existing electrical cabling, terminations, containment and associated equipment on or passing across the roof.
- Refer to section below for internal removals / alterations to existing ceilings & M&E, to be read in conjunction with Architect drawings and M&E package.

### 5.14 - INTERNAL REMOVALS / ALTERATIONS

#### PROTECTION OF EXISTING FINISHES

- Contractor shall provide protection to all existing finishes and joinery to be retained for the full duration of all internal works / upgrades in accordance with clause 2.7 above.

INTERNAL FLOOR FINISHES

- **NOTE: Asbestos has been detected in existing building, Refer to Clause 5.15 below for full detail of proposed asbestos removal works.**
- Contractor shall provide for the removal and disposal of all existing floor finishes as indicated on architects drawings
- All existing adhesives etc shall be fully removed and floor surfaces shall be prepared for new floor finish to architects' specification
- Refer to Polyflor or equivalent "Preparation of subfloors" documentation treatment of existing substrates prior to commencement of new flooring installation.

INTERNAL DOWNPIPES & BOXOUTS ALTERATIONS

- Removal and disposal of all **existing internal downpipes boxouts** to fully expose the existing roof outlet internally and associated downpipe.
- **Existing internal downpipes shall be pressure cleaned** (jetted) prior to full removal of the existing system, the rainwater outlets shall be protected from debris for the full duration of works.
- Existing downpipes shall be altered to connect a new roof outlets in conjunction with the removals noted above.
- **Rodding Eye / access point** shall be added to each internal outlet

CEILING SYSTEM ALTERATIONS / REPLACEMENTS

- Contractor shall provide for the removal and disposal of all existing suspended ceilings and associated materials including frames, hangers, trims etc as indicated on architects drawings.
- It's the responsibility of the contractor to ensure all damages resulting from the works and to existing ceilings to be retained shall be made good with new materials.
- Unless otherwise described all old materials arising from site clearance are to become the property of the Contractor, refer to internal removals / clearance section above.
- Proposed ceiling removals shall be carried out in conjunction with M&E alterations, due care shall be taken where existing M&E systems or materials such as containment, fire detection heads etc will remain.

ROOFLIGHT SHAFT ALTERATIONS / REMOVALS

- Contractor shall provide for the removal and disposal of all existing rooflight shafts in conjunction with existing rooflight and upstand removal / upgrade together with internal ceiling works. Existing opening shall be prepared for new rooflight shaft installation.

LIGHTING (GENERAL & EMERGENCY)

- Proposed Lighting services (General Lighting & Emergency Lighting) alterations shall be carried out in accordance with M&E engineers requirements , to be read in conjunction with Architects drawings and specifications.

PROTECTIVE SERVICES

- Proposed protective service (Fire Detection) alterations shall be carried out in accordance with M&E engineers requirements , to be read in conjunction with Architects drawings and specifications.

VENTILATION SERVICES

- Proposed ventilation alterations shall be carried out in accordance with M&E engineers requirements , to be read in conjunction with Architects drawings and specifications.

#### GAS SERVICES

- Existing Gas services where present shall be retained and protected for the duration of works.

#### 5.15 – ASBESTOS REMOVAL

- NOTE:** Asbestos has been detected in existing building. The appointed contractor to be aware of asbestos present on site and must engage with asbestos specialist to remove all asbestos material safely. Any such specialist works should be included in the contractor's costs/ charges as part of the tender/ construction works requirements (Refer to Asbestos Safe Report carried out on 16<sup>th</sup> June 2026).
- No person is permitted to work with asbestos containing materials unless they have received training and have taken all reasonable steps to prevent exposure to asbestos. The requirement for training is detailed in Regulation 17 of the Safety Health and Welfare at Work (Exposure to Asbestos) Regulations, 2006-2010.
- A Refurbishment Demolition Asbestos Survey has been undertaken to ST KEVINS COLLEGE, BALLYGALL ROAD, BALLYGALL, DUBLIN 11, D11 VF10 by Asbestos Safe. The survey was intrusive and was limited to accessible areas.

#### **Report Conclusions and Recommendations**

- The bitumen adhesive, located on the floors in the red highlighted areas of the drawing, contain Chrysotile asbestos. If the Asbestos Containing Materials are affected by refurbishment works it must be removed by a competent asbestos contractor. The resulting waste must be disposed of as 'Asbestos Waste' at a licensed facility. On completion of the works a Clearance Certificate of must be issued by an independent asbestos analyst.
- No Other Asbestos Containing Materials (ACMs) were detected during the survey.**
- During the survey the following Asbestos Containing Materials (ACMs) were identified: (See**
  - Ground Floor Lab 1 (001) – Bitumen : **Area out of scope, no action required**
  - Ground Floor Lab 2 (002) – Bitumen : **Area out of scope, no action required**
  - Ground Floor DCG Room (003) – Bitumen : **Area out of scope, no action required**
  - Ground Floor Construction room (004) – Bitumen : **Area out of scope, no action required**
  - Ground Floor Room 13 (005) – Bitumen : **Area out of scope, no action required**
  - Ground Floor Area beside principal office (016) – Bitumen:**
    - Asbestos removal works shall be carried out by approved competent asbestos removal contractor with the Office of Public Works' Health and Safety Unit in conjunction with the local flooring upgrade works.
  - Ground Floor Area beside room 3 (017) – Bitumen:**
    - Asbestos removal works shall be carried out by approved competent asbestos removal contractor with the Office of Public Works' Health and Safety Unit in conjunction with the local flooring upgrade works.
  - Ground Floor Area beside staff room (018) – Bitumen:**
    - Asbestos removal works shall be carried out by approved competent asbestos removal contractor with the Office of Public Works' Health and Safety Unit in conjunction with the local flooring upgrade works.
  - Ground Floor Area beside room 8 (019) – Bitumen:**
    - Asbestos removal works shall be carried out by approved competent asbestos removal contractor with the Office of Public Works' Health and Safety Unit in conjunction with the local flooring upgrade works.



Areas where bitumen adhesive containing asbestos highlighted in red

### Asbestos Removal

- The Successful contractor shall carry out the role of Project Supervisor Construction Process in accordance with the Safety Health and Welfare at Work Construction Regulations 2006.
- The contractor / sub-contractor appointed to carry out the asbestos removal works shall be an approved competent asbestos removal contractor with the Office of Public Works' Health and Safety Unit.
- The Successful contractor shall provide a site-specific Work Plan in accordance with the Safety Health and Welfare at Work (Exposure to Asbestos) Regulations 2006.
- The Successful contractor shall forward the required 14-day notification, including a copy of the Work Plan, to the Health and Safety Authority before commencing removal works
- The Successful contractor shall agree the sequence and duration of the works prior to works commencing on site with the project architect prior to works commencing.

- The Successful contractor shall communicate the degree, nature and duration of the works to all relevant School personnel and the occupiers of the building; liaison with the occupiers of the building should be necessary or where part of a building has to be sealed off.
- The Successful contractor shall co-ordinate all necessary pre-removal works including the provision of services to any sub-contractors as necessary.
- The Successful contractor shall appoint an Independent Accredited Laboratory for the purpose of undertaking air sampling, project monitoring and Clearance Certification in conformance with ISO 17025 General Requirements for the Competence of Testing and Calibration Laboratories.
- The Successful contractor shall validate in conjunction with the competent laboratory that C1 Consignment Note Certification of waste has been issued for the site.
- The Successful contractor shall notify relevant personnel that the works are completed and that the area is certified as safe for normal occupation to resume, or for other works to proceed.
- The Successful contractor shall ensure that copies of the following documents are retained for inclusion in the Safety File:
  - Bulk sample results as applicable.
  - Amended Asbestos Register.
  - Preliminary Safety & Health Plan and Specification.
  - Contractor Work Plan.
  - Notification to the Health and Safety Authority.
  - Air monitoring results prior to removal works commencing.
  - Air monitoring results during removal works.
  - Clearance certification.
  - Consignment Note for the disposal of contaminated waste.

#### **Role of the Asbestos Removal Contractor.**

- The asbestos removal contractor appointed by the Architect/Project Supervisor Design Process shall ensure that:
  - Removal works comply with the safe working procedures outlined in his Work Plan and that any breach of safe working procedures is reported to the Architect/Project Supervisor Design.
  - The Work Plan is validated against the specification and Preliminary Safety & Health Plan for the works.
  - Enclosures are air tight and are smoke tested by the contractor prior to work commencing and at regular intervals thereafter.
  - Decontamination facilities are maintained on an ongoing basis.
  - Negative pressure units are inspected by the contractor daily.
  - Transit procedures are fully implemented and supervised.
  - General supervision of the works is carried out daily.
  - Contaminated waste is stored in a secure and suitable facility prior to removal from site.
  - Daily air monitoring is carried out, by an Independent Accredited Laboratory, in locations external to the removal zone.
  - General site security is such as to prevent accidental incursions into the removal zone.
  - The Independent Accredited Laboratory certifies clearance of the area on completion of the removal works.

#### **Dealing with Emergency Situations**

- Where construction works result in the accidental damage of asbestos materials the following procedures should be followed:
  1. The area shall be evacuated and cordoned off to prevent re-entry.
  2. Inform the Office of Public Works Health and Safety Unit of the nature of the emergency.

3. Upon receipt of the notification the Health and Safety Unit will arrange for
  - an assessment of any contamination by a competent person.
  - Notification to the Health and Safety Authority of the nature of the emergency, if appropriate.
  - The selection of a competent contractor, where appropriate, to undertake all necessary removal and decontamination works.
  - Air monitoring and final clearance certification.

### Post asbestos removal works

The Successful contractor shall provide **the following certification for inclusion in the Safety File:**

- Asbestos Clearance Certification.
- Air Monitoring Certification.
- Waste Disposal Certification.
- Updated Asbestos Register.

### 5.16 – CIVIL REMOVALS / ALTERATIONS

- Proposed Civil removals / alterations shall be read in conjunction with **Clause 23** – “Civil Installations” below.
- The Contractor shall allow for all necessary opening-up, removal, excavation, cutting, breaking out, temporary protection, disposal, alteration, making-good and reinstatement works required to facilitate the installation of new roof drainage elements, including new roof outlets, rainwater downpipes, gullies, below-ground drainage pipework and connections to the existing surface water drainage system.
- All works shall be carried out in accordance with the Contract Documents, Architect’s drawings, Civil/Structural Engineer’s details, manufacturer’s recommendations, and all relevant statutory requirements.
- The Contractor shall visit the site and satisfy themselves as to the extent of existing drainage, finishes, ground conditions, access restrictions, existing services and reinstatement requirements before commencing works.

### EXISTING DRAINAGE INVESTIGATION AND OPENING-UP

Before commencing removals or excavation, the Contractor shall:

- Prior to commencement of any surface-water drainage works, the Contractor shall arrange for a specialist drainage contractor to undertake a comprehensive CCTV survey of the existing below-ground surface-water drainage system serving the areas affected by the Works.
  - The survey shall confirm the location, route, pipe diameter, material, invert levels, direction of flow, connectivity, capacity and condition of the existing drainage system, including all relevant manholes, inspection chambers, gullies, connections and outfalls.
  - Confirm the proposed connection points to the existing system.
  - Carry out trial holes and/or hand-dug investigation pits where required to verify existing drainage routes.
  - Identify all existing underground services prior to excavation.
  - Notify the Design Team immediately of any discrepancies between the drawings and actual site conditions.
  - Obtain approval before making any final connections to the existing drainage system.
- No connection shall be made to the existing surface water system until the Contractor has confirmed that the existing system is suitable to receive the additional flows and that the proposed connection is agreed with the Design Team / Civil Engineer.

#### EXCAVATION AND REMOVAL OF EXISTING EXTERNAL FINISHES

- The Contractor shall allow for all excavation and removal of existing external finishes required to install new gullies, drainage pipework and connections to the existing surface water system. This shall include, where applicable:
  - Breaking out and removal of existing tarmacadam, concrete paving, concrete aprons, footpaths, kerbs, edgings, gravel margins, soft landscaping or other external finishes.
  - Saw-cutting hard surfaces to neat straight lines before breaking out.
  - Careful excavation of trenches to required falls, depths and widths.
  - Hand excavation around existing services, foundations, drainage runs and sensitive areas.
  - Temporary support of excavations as required.
  - Removal of redundant or obstructing drainage pipework where agreed.
  - Protection of existing foundations, services, paths, play areas, soft landscaping and building fabric.
  - Safe storage or disposal of excavated material.
  - Excavations shall be kept to the minimum practical extent necessary to complete the works.

#### EXISTING SERVICES AND PROTECTION

- Before excavation or breaking out, the Contractor shall locate and protect all existing underground and above-ground services, including but not limited to:
  - Existing surface water and foul drainage.
  - Water mains.
  - Gas services.
  - Electrical supplies.
  - External lighting cables.
  - Fire alarm or security cabling.
  - Data/communications cabling.
  - Heating or district pipework where present.
- The Contractor shall use cable avoidance tools, service drawings, trial holes and hand-digging methods as necessary.
- Any damage to existing services shall be made safe immediately, reported to the Design Team, and repaired by suitably qualified personnel at the Contractor's expense.

#### 5.17 – EXISTING WOODWOOL ROOF SLAB

##### DAMAGE DISCOVERED DURING STRIP-OUT

- The existing woodwool roof slab shall be treated as a fragile roof construction unless and until its condition and structural capacity have been confirmed by a competent structural engineer.
- The Contractor shall provide all necessary access systems, working platforms, internal protection, temporary propping, fall-prevention measures and exclusion zones required to safely undertake the works.
- Upon exposure of the existing woodwool slab, the Contractor shall carefully inspect the slab for evidence of water saturation, staining, softening, friability, cracking, delamination, sagging, deflection, loss of bearing or other deterioration.
- The Contractor shall also inspect the associated supporting structure, including steelwork, reinforcement, timber members, purlins, beams, bearings and fixings, for corrosion, decay or damage.
- Where suspected moisture damage or deterioration is identified, the Contractor shall immediately cease works within the affected area, provide temporary weather protection and notify the Architect/Employer's Representative.

- No new vapour control layer, insulation or waterproofing shall be installed over the affected area until the condition and extent of the damage have been assessed and written instructions have been issued.
- The Contractor shall facilitate all required opening-up works, core sampling, moisture testing, level surveys, fixing pull-out tests, adhesive bond tests and structural inspections.
- The extent of the affected areas shall be recorded on a roof plan and supported by dated photographic records.
- Woodwool slabs that are softened, friable, delaminated, significantly cracked, sagging, inadequately supported or otherwise incapable of safely supporting the proposed roof construction shall be carefully removed.
- Removal shall generally extend to complete slab sections between structural supports unless otherwise agreed with the Structural Engineer.
- Damaged areas shall be replaced with a new structural roof deck designed by the Structural Engineer and approved by the roofing-system manufacturer.
- The replacement deck shall be positively supported at all edges and junctions and shall provide adequate resistance to dead loads, imposed loads, maintenance loads, wind uplift forces and loads arising from the proposed roofing-system fixings.
- All corroded steelwork, damaged reinforcement, defective concrete, decayed timber, inadequate bearings and defective fixings exposed during the works shall be repaired, strengthened or replaced in accordance with the Structural Engineer's details.
- Where the existing woodwool slab is assessed as damp but structurally sound, it shall be cleaned, dried and prepared in accordance with the roofing-system manufacturer's requirements.
- Retention shall be subject to acceptable moisture readings, satisfactory structural assessment, satisfactory pull-out or bond-test results and written acceptance by the Structural Engineer, roofing-system manufacturer and Architect/Employer's Representative.
- The Contractor shall allow for temporary propping, internal crash-deck protection, phased removal and reinstatement, temporary weathering and all measures necessary to maintain the building in a safe and weather-tight condition throughout the works.
- Installation of the new vapour control layer, tapered insulation and waterproofing system shall constitute a hold point and shall not proceed until the repaired or retained roof deck has been inspected and approved in writing.

## 6 SOW SUMMARY – INSTALLATIONS

### 6.1 - ROOF 1 INSTALLATION SUMMARY

- Installation of Warm Roof system with Tapered Insulation Scheme, Refer to **Clause 7** below for full detail.
- 2 no. existing rainwater outlets shall be altered to suit new tapered insulation scheme. New outlets shall be provided in conjunction with new roof waterproofing system to Architects / Manufactures detail.
- Installation of 3 no. Rooflights + Associated Upstands, Refer to **Clause 9** below for full detail.
- Installation of 1 no. new mechanical ventilation cowl, Refer to **Clause 12** below together with Full M&E Package.

- Installation of **perimeter / edge upstand**, Refer to **Clause 10** below for full detail, new cladding to perimeter fascia in accordance with **clause 11, to be read in conjunction with architects detail.**
- Installation of new Clerestory Windows, Refer to **Clause 15** below for full detail.
- Works to Existing Columns (Wrap), Refer to **clause 15.3** below for full detail.
- Construction of new raised cill inc aluminium cill externally, Refer to **Clause 15.5** below for full detail.
- Installation of new Aluminium Window cill, Refer to **Clause 15.6** below for full detail.
- New Airtightness tapes, Refer to **Clause 15.7** below for full detail
- New Acoustic / fire stopping, Refer to **Clause 15.8** below for full detail
- New Window linings internally, Refer to **Clause 15.9** below for full detail.
- New Internal Painting, Refer to **Clause 15.10** below for full detail.
- New Blinds internally, Refer to **clause 15.11** below for full detail
- Fall arrest system, Refer to **Clause 14** below for full detail.
- Installation of Hopper heads and Downpipes, Refer to **Clause 16** for full detail in conjunction with Architects drawings for outlet locations.
- Contractor shall include for **protection, temporary support, alteration, relocation and reinstatement** of all existing electrical cabling, terminations, containment and associated equipment on or passing across the roof.
- Refer to section below for internal removals / alterations to existing ceilings & M&E, to be read in conjunction with Architect drawings and M&E package.

## 6.2 - ROOF 2 INSTALLATION SUMMARY

- Installation of Warm Roof system with Tapered Insulation Scheme, Refer to **Clause 7** below for full detail.
- Installation of 2 no. Rooflights + Associated Upstands, Refer to **Clause 9** below for full detail.
- Alteration of existing service penetrations in accordance with **Clause 12** below. Existing redundant upstand shall be removed, previous opening infilled and new waterproofing system shall fully encapsulate.
- Installation of **perimeter / edge upstand**, Refer to **Clause 10** below for full detail
- New cladding to perimeter fascia above clerestory windows in accordance with **Clause 11**, to be read in conjunction with architects detail.
- Installation of new Clerestory Windows, Refer to **Clause 15** below for full detail.
- Works to Existing Columns (Wrap), Refer to **clause 15.3** below for full detail.
- Construction of new raised cill inc aluminium cill externally, Refer to **Clause 15.5** below for full detail.
- Installation of new Aluminium Window cill, Refer to **Clause 15.6** below for full detail.
- New Airtightness tapes, Refer to **Clause 15.7** below for full detail

- New Acoustic / fire stopping, Refer to **Clause 15.8** below for full detail
- New Window linings internally, Refer to **Clause 15.9** below for full detail.
- New Internal Painting, Refer to **Clause 15.10** below for full detail.
- New Blinds internally, Refer to **clause 15.11** below for full detail
- Installation of a new fall arrest system & roof access, Refer to **Clause 14** below for full detail.
- Installation of Hopper heads and Downpipes, Refer to **Clause 16** for full detail in conjunction with Architects drawings for outlet locations.
- Contractor shall include for **protection, temporary support, alteration, relocation and reinstatement** of all existing electrical cabling, terminations, containment and associated equipment on or passing across the roof.
- Refer to section below for internal removals / alterations to existing ceilings & M&E, to be read in conjunction with Architect drawings and M&E package.

### 6.3 - ROOF 3 & ROOF 3A INSTALLATION SUMMARY

- Installation of Warm Roof system with Tapered Insulation Scheme, Refer to **Clause 7** below for full detail.
- Installation of 4 no. Rooflights + Associated Upstands, Refer to **Clause 9** below for full detail.
- Installation of **perimeter / edge upstand** to Roof 3A, Refer to **Clause 10** below for full detail.
  - Change in level between roof 3 and Roof 3A in accordance with **clause 7.42**
  - Existing masonry capping shall be removed and encapsulated with new waterproofing system.
- Installation of new aluminium fascia and soffit to Roof 3A, Refer to **clause 11** below for full detail
- Installation of new Clerestory Windows, Refer to **Clause 15** below for full detail.
  - Works to Existing Columns (Wrap), Refer to **clause 15.3** below for full detail.
  - Construction of new raised cill inc aluminium cill externally, Refer to **Clause 15.5** below for full detail.
  - Installation of new Aluminium Window cill, Refer to **Clause 15.6** below for full detail.
  - New Airtightness tapes, Refer to **Clause 15.7** below for full detail
  - New Acoustic / fire stopping, Refer to **Clause 15.8** below for full detail
  - New Window linings internally, Refer to **Clause 15.9** below for full detail.
  - New Internal Painting, Refer to **Clause 15.10** below for full detail.
  - New Blinds internally, Refer to **clause 15.11** below for full detail
- Installation of a new fall arrest system & roof access, Refer to **Clause 14** below for full detail.
- Installation of Hopper heads and Downpipes, Refer to **Clause 16** for full detail in conjunction with Architects drawings for outlet locations.
- Contractor shall include for **protection, temporary support, alteration, relocation and reinstatement** of all existing electrical cabling, terminations, containment and associated equipment on or passing across the roof.

- Refer to section below for internal removals / alterations to existing ceilings & M&E, to be read in conjunction with Architect drawings and M&E package.

#### 6.4 - ROOF 4 INSTALLATION SUMMARY

- Installation of Warm Roof system with Tapered Insulation Scheme, Refer to **Clause 7** below for full detail including upgrade of Plant room roof.
- Installation of 1 no. Rooflight + Associated Upstands, Refer to **Clause 9** below for full detail.
- Alteration of existing service penetrations in accordance with **Clause 12** below. Existing redundant upstand shall be removed, previous opening infilled and new waterproofing system shall fully encapsulate.
- Installation of **perimeter / edge upstand**, Refer to **Clause 10** below for full detail
- New cladding to perimeter fascia above clerestory windows in accordance with **Clause 11**, to be read in conjunction with architects detail.
- Installation of new Clerestory Windows, Refer to **Clause 15** below for full detail.
  - Works to Existing Columns (Wrap), Refer to **clause 15.3** below for full detail.
  - Construction of new raised cill inc aluminium cill externally, Refer to **Clause 15.5** below for full detail.
  - Installation of new Aluminium Window cill, Refer to **Clause 15.6** below for full detail.
  - New Airtightness tapes, Refer to **Clause 15.7** below for full detail
  - New Acoustic / fire stopping, Refer to **Clause 15.8** below for full detail
  - New Window linings internally, Refer to **Clause 15.9** below for full detail.
  - New Internal Painting, Refer to **Clause 15.10** below for full detail.
  - New Blinds internally, Refer to **clause 15.11** below for full detail
- Installation of a new fall arrest system & roof access, Refer to **Clause 14** below for full detail.
- Installation of Hopper heads and Downpipes, Refer to **Clause 16** for full detail in conjunction with Architects drawings for outlet locations.
- Alteration of Plant room cladding and upstand shall be carried out in accordance with Clause 18 below for full detail.
- Installation of new Plant room door in accordance with **clause 18.3** below.
- Contractor shall include for **protection, temporary support, alteration, relocation and reinstatement** of all existing electrical cabling, terminations, containment and associated equipment on or passing across the roof.
- Refer to section below for internal removals / alterations to existing ceilings & M&E, to be read in conjunction with Architect drawings and M&E package.

## 6.5 - ROOF 5 & ROOF 5A INSTALLATION SUMMARY

- Installation of Warm Roof system with Tapered Insulation Scheme, Refer to **Clause 7** below for full detail.
- Installation of 4 no. Rooflights + Associated Upstands, Refer to **Clause 9** below for full detail.
- Installation of **perimeter / edge upstand** to Roof 5A, Refer to **Clause 10** below for full detail.
  - Change in level between roof 5 and Roof 5A in accordance with **clause 7.42**
  - Existing masonry capping shall be removed and encapsulated with new waterproofing system.
- Installation of new aluminium fascia and soffit to Roof 5A, Refer to **clause 11** below for full detail
- Installation of new Clerestory Windows, Refer to **Clause 15** below for full detail.
  - Works to Existing Columns (Wrap), Refer to **clause 15.3** below for full detail.
  - Construction of new raised cill inc aluminium cill externally, Refer to **Clause 15.5** below for full detail.
  - Installation of new Aluminium Window cill, Refer to **Clause 15.6** below for full detail.
  - New Airtightness tapes, Refer to **Clause 15.7** below for full detail
  - New Acoustic / fire stopping, Refer to **Clause 15.8** below for full detail
  - New Window linings internally, Refer to **Clause 15.9** below for full detail.
  - New Internal Painting, Refer to **Clause 15.10** below for full detail.
  - New Blinds internally, Refer to **clause 15.11** below for full detail
- Installation of a new fall arrest system & roof access, Refer to **Clause 14** below for full detail.
- Installation of Hopper heads and Downpipes, Refer to **Clause 16** for full detail in conjunction with Architects drawings for outlet locations.
- Contractor shall include for **protection, temporary support, alteration, relocation and reinstatement** of all existing electrical cabling, terminations, containment and associated equipment on or passing across the roof.
- Refer to section below for internal removals / alterations to existing ceilings & M&E, to be read in conjunction with Architect drawings and M&E package.

## 6.6 - ROOF 6 INSTALLATION SUMMARY

- Installation of Warm Roof system with Tapered Insulation Scheme, Refer to **Clause 7** below for full detail including upgrade of Plant room roof.
- Installation of 5 no. Rooflight + Associated Upstands, Refer to **Clause 9** below for full detail.
- Alteration of existing service penetrations in accordance with **Clause 12** below. Existing redundant upstand shall be removed, previous opening infilled and new waterproofing system shall fully encapsulate.
- Installation of **perimeter / edge upstand**, Refer to **Clause 10** below for full detail

- New cladding to perimeter fascia above clerestory windows in accordance with **Clause 11**, to be read in conjunction with architects detail.
- Installation of new Clerestory Windows, Refer to **Clause 15** below for full detail.
- Works to Existing Columns (Wrap), Refer to **clause 15.3** below for full detail.
- Construction of new raised cill inc aluminium cill externally, Refer to **Clause 15.5** below for full detail.
- Installation of new Aluminium Window cill, Refer to **Clause 15.6** below for full detail.
- New Airtightness tapes, Refer to **Clause 15.7** below for full detail
- New Acoustic / fire stopping, Refer to **Clause 15.8** below for full detail
- New Window linings internally, Refer to **Clause 15.9** below for full detail.
- New Internal Painting, Refer to **Clause 15.10** below for full detail.
- New Blinds internally, Refer to **clause 15.11** below for full detail
- Installation of a new fall arrest system & roof access, Refer to **Clause 14** below for full detail.
- Installation of Hopper heads and Downpipes, Refer to **Clause 16** for full detail in conjunction with Architects drawings for outlet locations.
- Alteration of Plant room cladding and upstand shall be carried out in accordance with Clause 18 below for full detail.
- Installation of new Plant room door in accordance with **clause 18.3** below.
- Contractor shall include for **protection, temporary support, alteration, relocation and reinstatement** of all existing electrical cabling, terminations, containment and associated equipment on or passing across the roof.
- Refer to section below for internal removals / alterations to existing ceilings & M&E, to be read in conjunction with Architect drawings and M&E package.

#### 6.7 - ROOF 7 & ROOF 7A INSTALLATION SUMMARY

- Installation of Warm Roof system with Tapered Insulation Scheme, Refer to **Clause 7** below for full detail.
- Installation of 4 no. Rooflights + Associated Upstands, Refer to **Clause 9** below for full detail.
- Installation of **perimeter / edge upstand** to Roof 7A, Refer to **Clause 10** below for full detail.
- Change in level between roof 7 and Roof 7A in accordance with **clause 7.42**
- Existing masonry capping shall be removed and encapsulated with new waterproofing system.
- Installation of new aluminium fascia and soffit to Roof 7A, Refer to **clause 11** below for full detail
- Installation of new Clerestory Windows, Refer to **Clause 15** below for full detail.
- Works to Existing Columns (Wrap), Refer to **clause 15.3** below for full detail.
- Construction of new raised cill inc aluminium cill externally, Refer to **Clause 15.5** below for full detail.
- Installation of new Aluminium Window cill, Refer to **Clause 15.6** below for full detail.

- New Airtightness tapes, Refer to **Clause 15.7** below for full detail
- New Acoustic / fire stopping, Refer to **Clause 15.8** below for full detail
- New Window linings internally, Refer to **Clause 15.9** below for full detail.
- New Internal Painting, Refer to **Clause 15.10** below for full detail.
- New Blinds internally, Refer to **clause 15.11** below for full detail
- Installation of a new fall arrest system & roof access, Refer to **Clause 14** below for full detail.
- Installation of Hopper heads and Downpipes, Refer to **Clause 16** for full detail in conjunction with Architects drawings for outlet locations.
- Contractor shall include for **protection, temporary support, alteration, relocation and reinstatement** of all existing electrical cabling, terminations, containment and associated equipment on or passing across the roof.
- Refer to section below for internal removals / alterations to existing ceilings & M&E, to be read in conjunction with Architect drawings and M&E package.

#### 6.8 - ROOF 8 INSTALLATION SUMMARY

- Installation of Warm Roof system with Tapered Insulation Scheme, Refer to **Clause 7** below for full detail.
- Installation of 7 no. Rooflights + Associated Upstands, Refer to **Clause 9** below for full detail.
- Alteration of existing service penetrations in accordance with **Clause 12** below. Existing redundant upstand shall be removed, previous opening infilled and new waterproofing system shall fully encapsulate.
- Installation of **perimeter / edge upstand**, Refer to **Clause 10** below for full detail
- New cladding to perimeter fascia above clerestory windows in accordance with **Clause 11**, to be read in conjunction with architects detail.
- Installation of new Clerestory Windows, Refer to **Clause 15** below for full detail.
  - Works to Existing Columns (Wrap), Refer to **clause 15.3** below for full detail.
  - Construction of new raised cill inc aluminium cill externally, Refer to **Clause 15.5** below for full detail.
  - Installation of new Aluminium Window cill, Refer to **Clause 15.6** below for full detail.
  - New Airtightness tapes, Refer to **Clause 15.7** below for full detail
  - New Acoustic / fire stopping, Refer to **Clause 15.8** below for full detail
  - New Window linings internally, Refer to **Clause 15.9** below for full detail.
  - New Internal Painting, Refer to **Clause 15.10** below for full detail.
  - New Blinds internally, Refer to **clause 15.11** below for full detail
- Installation of a new fall arrest system & roof access, Refer to **Clause 14** below for full detail.
- Installation of Hopper heads and Downpipes, Refer to **Clause 16** for full detail in conjunction with Architects drawings for outlet locations.

- Contractor shall include for **protection, temporary support, alteration, relocation and reinstatement** of all existing electrical cabling, terminations, containment and associated equipment on or passing across the roof.
- Refer to section below for internal removals / alterations to existing ceilings & M&E, to be read in conjunction with Architect drawings and M&E package.

#### 6.9 - ROOF 9 INSTALLATION SUMMARY

- Installation of Warm Roof system with Tapered Insulation Scheme, Refer to **Clause 7** below for full detail.
- 2 no. existing rainwater outlets shall be altered to suit new tapered insulation scheme. New outlets shall be provided in conjunction with new roof waterproofing system to Architects / Manufacturers detail.
- Installation of **perimeter / edge upstand**, Refer to **Clause 10** below for full detail, new cladding to perimeter fascia in accordance with **clause 11, to be read in conjunction with architects detail.**
- Installation of new Clerestory Windows, Refer to **Clause 15** below for full detail.
- Works to Existing Columns (Wrap), Refer to **clause 15.3** below for full detail.
- Construction of new raised cill inc aluminium cill externally, Refer to **Clause 15.5** below for full detail.
- Installation of new Aluminium Window cill, Refer to **Clause 15.6** below for full detail.
- New Airtightness tapes, Refer to **Clause 15.7** below for full detail
- New Acoustic / fire stopping, Refer to **Clause 15.8** below for full detail
- New Window linings internally, Refer to **Clause 15.9** below for full detail.
- New Internal Painting, Refer to **Clause 15.10** below for full detail.
- New Blinds internally, Refer to **clause 15.11** below for full detail
- Fall arrest system, Refer to **Clause 14** below for full detail.
- Installation of Hopper heads and Downpipes, Refer to **Clause 16** for full detail in conjunction with Architects drawings for outlet locations.
- Contractor shall include for **protection, temporary support, alteration, relocation and reinstatement** of all existing electrical cabling, terminations, containment and associated equipment on or passing across the roof.
- Refer to section below for internal removals / alterations to existing ceilings & M&E, to be read in conjunction with Architect drawings and M&E package.

## 7. INSTALLATION OF WATERPROOFING SYSTEMS

### 7.1 – JN41-DESCRIPTION OF WORKS

Section J41 deals with the installation of the Bauder or equivalent Waterproofing System, comprising coverings of multiple layers of reinforced bituminous membranes laid and jointed using self-adhesive and/or torch application as required. It includes where required, the air and vapour control layer, thermal insulation, underlayer and capping sheet membranes (root resistant for green roof systems) and presumes the deck substrate and roof falls as stated within the specification below. Accessories are included where relevant.

It is intended for use on projects where the detailed design is completed by the specifier (architect) with technical assistance from the manufacturer as required and should be read in conjunction with any project specific drawings provided.

#### **'Safe2Torch' advice:**

*The application of torch-on materials to or in the vicinity of combustible deck materials does not conform to the recommendations of BS8217:2005, clause 7.3.2.1, paragraph 3, or the advice given in the 'Safe2Torch' document produced by the National Federation of Roofing Contractors. When encountering an area which contains combustible material a minimum 900mm deep zone of the flat area around the material and any detail flashing to the material itself there is a requirement for 'FLAME-FREE' detailing. In these instances an appropriate alternative Bauder or equivalent self-adhesive membrane should be used as described in: 'FLAME-FREE' & 'Safe to Torch' DETAILING - ALTERNATIVE MEMBRANES AND APPLICATION. The 'FLAME-FREE' & 'SAFE TO TORCH' detailing and method of application will be described in the Additional Items section and the 'FLAME-FREE' & 'SAFE TO TORCH' DETAILING section of this specification and further detailed in the Bauder or equivalent 'FLAME-FREE' & 'Safe to Torch' drawings.*

**Please note**, there could be 'FLAME-FREE' areas within the roof area(s), however there are either no roof plans available or the design is not sufficiently complete at this stage in the project to enable Bauder or equivalent to complete a 'FLAME-FREE' roof plan. Once this plan becomes available and the design is sufficiently complete, please contact the Bauder or equivalent Area Technical Manager (details at the end of the specification) and this can then be created for this area.

- The specification below shall be read in conjunction with any project specific drawings provided. To be read with Preliminaries/ General Conditions.

#### **This section (Clause 7) includes:**

- The Bauder **or equivalent** waterproofing system.
- Related Bauder **or equivalent** system accessories
- Thermal insulation that meets the required U Value.
- Internal/parapet rainwater outlets (but not the connected drainage/plumbing goods)

#### **This section (Clause 7) does not include:**

- Construction of the structural deck.
- Proprietary rainwater drainage / plumbing – refer NBS section R10
- Lightning protection – refer NBS Engineering Services, Section W60.
- Latchways **or equivalent** Constant Force Post System – refer NBS Section N25.
- Stairs/Ladders/Handrails/Balustrades – See NBS Section L30

### **Design Information and Supporting Documents**

- This specification is to be read in conjunction with the supporting Specification-Appendix & Flame Free Report (where applicable), Technical Calculations (where available), Bauder or equivalent Installation Guides and Bauder or equivalent Standard Detail Drawings.
- This specification has been produced based on the information supplied at the time of writing and is deemed to apply subject to the conditions outlined below, unless additional calculations proving otherwise have been completed and issued to you by Bauder Ltd **or equivalent** supplier.

### **Wind Loading:**

- Where provided, wind loading calculations have been carried out in accordance with BS EN 1991-1-4, UK National Annex (NA), to determine the suitability of the proposed system to resist the calculated wind uplift. Additional measures may be included within this specification where required. Should the site be situated in a location subjected to increased wind loads, i.e. exposed site, coastal locations, Bauder Ltd **or equivalent** must be informed and a site-specific wind loading calculation must be completed prior to works commencing.

### **U-Value:**

- Thermal performance stated is based on the proposed Bauder **or equivalent** roof system build-up including Bauder **or equivalent** insulation and the underlying deck material only. This does not include the supporting structure and/or any other materials within the construction below the deck, unless Bauder Ltd **or equivalent** have been advised otherwise prior to producing the calculations. Where forming gutters or changes in insulation thickness occur, an area-weighted U-Value calculation is required to assess the impact and ensure the target U-Value is achieved.
- Refer to the project specific U-Value calculation and Area-Weighted calculation (where provided) for additional information.

### **Drainage:**

- Drainage design should be in accordance with BS 6229:2025 and BS EN 12056-3 including any requirements for overflow or emergency overflow outlets.
- Early consultation with Bauder Ltd **or equivalent** is strongly advised to ensure these principles are applied appropriately from the outset and the appropriate drainage products are specified to meet the project requirements.

### **Emergency Overflow:**

- An emergency overflow is designed to take the full capacity of the primary outlet. *An emergency overflow may take the form of an open edge overflow, parapet overflow or an outlet overflow in the plan area of the roof, with a raised weir outlet.*

### **Overflow:**

- To manage rainwater disposal failure, overflow outlets can be installed to indicate there is a blockage or problem on the roof and urgent maintenance is required. An overflow, also referred to as a tell-tale or warning pipe, is not designed to take the full capacity of the primary outlet.
- Where the roof design drains internally direct to sump or outlet locations, additional emergency overflows or separate outlets should be used, as a blockage could cause the water to back up and overflow a high point, with the possibility of structural overload.
- The requirement and location for overflows or emergency overflows is based upon many variables and should be determined by a drainage engineer (or suitably competent person).

- Where provided, drainage calculations have been carried out in accordance with BS EN 12056-3. Calculations are based on Bauder Ltd **or equivalent** outlets only. Reference must be made to the project specific drainage calculation for quantity of outlets, outlet sizes and any specific sump requirements. Where sumps are required, this may affect the design of the insulation and on-site detailing. Requirements for sump sizes should be in accordance with BS 6229:2025 item 4.4.7.

## 7.2 – (110A) BUILT-UP REINFORCED BITUMEN MEMBRANE WARM DECK ROOF COVERING

|                                    |                                   |
|------------------------------------|-----------------------------------|
| <b>System</b>                      | BauderFLEX <b>or equivalent</b>   |
| <b>Project Plan</b>                | Refurbishment                     |
| <b>Applicable Structural Decks</b> | Existing Structural Concrete Deck |
| <b>Roof Construction</b>           | Warm Roof                         |

### Reinforced bitumen membrane warm roof covering system – torch-applied

Two-layer, torch-applied, warm roof, bitumen membrane waterproofing system suitable for both new build and refurbishment applications. Option of using a root-resistant cap sheet for green roofs. Can be used in uninsulated and inverted warm roof scenarios. Flame free detailing for application in the vicinity of combustible construction materials.

| Product                                                            | Description                                                                                                   | Thickness                                                                              | Weight                       |
|--------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|------------------------------|
| 1. BauderFLEX K4E <b>or equivalent</b> Capping Sheet               | Torch bonded, elastomeric bitumen capping sheet; 250g/m <sup>2</sup> spunbond polyester reinforcement.        | 4.2mm                                                                                  | 5.5Kg/m <sup>2</sup>         |
| 2. BauderTEC Sprint DUO <b>or equivalent</b> Underlayer            | Self-adhesive elastomeric bituminous membrane; glass lattice reinforcement; 'DUO' lap technology              | 2.0mm                                                                                  | 2.5Kg/m <sup>2</sup>         |
| 3. BauderPIR <b>or equivalent</b> Tapered Insulation               | Glass Tissued faced and shaped to create effective drainage falls                                             | 160mm<br><i>Approx. average thickness – Thickness subject to tapered scheme design</i> | 6.08Kg/m <sup>2</sup>        |
| 4. Bauder EVA 35 <b>or equivalent</b> Air and Vapour Control Layer | Torch applied Air and Vapour Control Layer, featuring a tear resistant foil lining for vapour impermeability. | 3.5mm                                                                                  | 4.5Kg/m <sup>2</sup>         |
| <b>System Build ups</b>                                            |                                                                                                               | <b>169.70mm</b>                                                                        | <b>18.58Kg/m<sup>2</sup></b> |



- **Roof area: Roof R2, R3, R4, R5, R6, R7, R8.**

- **Substrate:** Existing Structural Concrete Deck
- Remove and dispose of existing Bitumen and PVC membrane, insulation and make good existing concrete deck.

For the purpose of the tapered insulation scheme design, the roof deck is assumed to be level.

- Roof falls to be provided by the tapered insulation scheme.
- The design should take account of construction tolerances, permitted deviations and deflections under load, as per Item 4.4 of BS 6229:2025.

The maximum permissible departure from datum, in accordance with BS 8204-2:2003+A2:2011 Screeds, bases and in situ floorings Concrete wearing surfaces Code of practice shall be SR2 (5mm).

- No hollows, deflections or back-falls, wood float finished and fully cured.

- **Preparation:** As clause 610C.

- **Primer: Bauder or equivalent Quick Dry Bitumen Primer**, applied to the roof substrate and all upstands and skirtings. For application method and guidance information, refer clause as clause 660A.

- **Air & vapour control layer (All Areas Except 'Flame-Free' Zone): Bauder EVA35 or equivalent**, 3.5mm thick aluminium lined, elastomeric bitumen torch applied air and vapour control layer. Installation as clauses 670D, 710.

- **Air & vapour control layer to upstands and detailing ('Flame-Free' / 'Safe to Torch' Zone): BauderTEC KSD FBS or equivalent**, 2.5 mm thick aluminium lined, elastomeric bitumen self-adhesive air and vapour control layer mica finish. Installation as clauses 670G, 710.

**Please note:** Areas where a self-adhesive AVCL is used, should be primed with **Bauder or equivalent Activator-Primer (Canister), APR01-Black**.

- **Insulation: BauderPIR or equivalent Tapered** insulation scheme, rigid urethane insulation.

- The scheme may incorporate the use of Glass Tissue faced **BauderPIR or equivalent Flatboard** insulation installed as base-layer(s), and **BauderPIR GFS G16 or equivalent (ridge infills) & BauderPIR KFS G16 or equivalent (valley infills)** where required.

- For the Environmental Product Declaration (EPD) information refer to EPD-IVP-20160147-IBE1-EN.

- (Please refer to the Bauder **or equivalent** Tapered Insulation Layout drawing for individual board thickness, number of layers and number of ridge & Valley infills required).

- Installation strictly in accordance with the Bauder **or equivalent** Tapered Insulation Layout drawing supplied to achieve the required U value (refer Clause 230).

- Installation as clauses 680G and 775.

- **Angle fillets: BauderPIR M TKL 60 or equivalent angle fillets** 60 mm x 60 mm for use with insulated & un-insulated upstands, installation as clause 775.

*Please note: where Bauder **or equivalent** angle fillets are used with insulation to vertical upstands, they should be of the same Bauder **or equivalent** insulation material.*

- **Insulating vertical upstands: BauderPIR or equivalent flatboard**, Glass Tissue faced, rigid urethane insulation.

The vertical upstand(s) should be insulated, typically an external wall to a conditioned/habited space will be insulated in its own right e.g. a cavity wall, but there is still a requirement for a nominal 30mm thickness of insulation on the external face of the wall to reduce thermal bridging at the roof/wall intersection.

This insulation will be a minimum of 300mm in height from the deck surface to the top of the upstand and will ideally be fitted before the flat insulation so that it is retained at the base. **Bauder**

**or equivalent Insulated Upstand Support Brackets** should be installed to secure the top and provide a hard-leading edge.

The vertical upstand to **Builder's Kerbs** should also be insulated with a nominal 30mm thickness of insulation to reduce thermal bridging.

- **Builder's Kerbs that support rooflights and are not an integral part of the rooflight assembly** must be insulated with 80mm thick **BauderPIR FA-TE or equivalent flatboard** insulation to achieve a minimum U value of 0.30W/m<sup>2</sup>K, to comply with the latest Building Regulations. Installation as clause 681B.
- **Waterproof covering:** BAUDERFLEX or equivalent SYSTEM
- **System manufacturer:** Bauder Limited or equivalent.
- **Primer:** Bauder or equivalent Activator-Primer (Canister), APR01-Black, applied to the upper surface of the Bauder or equivalent insulation. For application method and guidance information, refer clause 660B.
- **Underlayer:** BauderTEC Sprint DUO or equivalent, 2 mm thick, 200g/m<sup>2</sup> glass-fibre reinforced, elastomeric self-adhesive bitumen underlayer. **Attachment:** As clauses 710, 747A.
- **Top layer / Cap sheet:** BauderFLEX K4E or equivalent, 4.2mm thick, 250g/m<sup>2</sup> polyester reinforced, elastomeric bitumen torch applied capping sheet, charcoal grey mineral finish. **Attachment:** As clauses 710, 750A.
- **Flashings and detail work:** BauderFLEX K4E or equivalent capping sheet, mineral finish as per main field area. Install as clauses 773, 775 & 777.
- **Surface protection:** N/A
- **Surfacing:** Designated areas of maintenance access walkway defined using **Bauder or equivalent capping sheet**, in a contrasting colour finish (where required). Install as clause 863.
- **Accessories:** -
  - **Bauder or equivalent Bitumen Compact Vertical Outlet DN 100 or Bauder or equivalent Bitumen Vertical Outlet DN 70 / DN 150**, (where required) (size as required to match drainage pipework) complete with pre-attached bitumen connection flange and dome grating. To be supplied and installed – quantity as required. When this outlet is used within a warm roof construction with insulation depth 60mm or greater, the **Bauder or equivalent Extension Unit** (supplied separately) must be used. Installation as clause 784A.
  - **Bauder or equivalent Bitumen Parapet Outlet DN 100 including stainless-steel leaf guard**, complete with pre-attached bitumen connection flange. To be supplied and installed – quantity as required. Installation as clause 784E.
  - **Bauder or equivalent Bitumen Parapet Tell-Tale Overflow DN 50** (on flat roofs with parapets and in non-eaves gutters. Where required in conjunction with the appropriate engineer). Installation as clause 784G.
  - **Bauder or equivalent GRP edge trim** (Where required) to all perimeter kerbs – Profile: Type 6 (150mm). Colour: Black. Installation, as clause 785.
  - **Bauder or equivalent Lightning Conductor Clips** (where required) – Type 4 for PVC coated tapes and uncoated tapes. Installation, as clause 786.
- **Additional Requirements:** 210, 230, 515, 520, 522, 560, 561, 562, 910, 940.
- **Guarantee information:** Refer clause 950C.

### 7.3 – (110B) BUILT-UP REINFORCED BITUMEN MEMBRANE WARM DECK ROOF COVERING

- **Roof area:** Roof R1 and R9
- **Substrate:** New Plywood deck.

Remove and dispose of existing Bitumen membrane, insulation and woodwool deck.

For the purpose of the tapered insulation scheme design, the roof deck is assumed to be level.

- Roof falls to be provided by the tapered insulation scheme.  
Designed and constructed to provide a minimum finished slope of 2°.
- The design should take account of construction tolerances, permitted deviations and deflections under load, as per Item 4.4 of BS6229:2018.
- No deflections or back-falls.
- **Preparation:** As clause 610A.
- **Primer: Bauder or equivalent Activator-Primer (Canister), APR01-Black**, applied to the roof substrate and all upstands and skirtings. For application method and guidance information, refer clause 660B.
- **Air & vapour control layer: BauderTEC KSD FBS or equivalent**, 2.5 mm thick aluminium lined, elastomeric bitumen self-adhesive air and vapour control layer mica finish. Installation as clauses 670G, 710.
- **Insulation: BauderPIR or equivalent Tapered** insulation scheme, rigid urethane insulation.
  - The scheme may incorporate the use of Glass Tissue faced **BauderPIR or equivalent Flatboard** insulation installed as base-layer(s), and **BauderPIR GFS G16 or equivalent (ridge infills) & BauderPIR KFS G16 or equivalent (valley infills)** where required.
  - For the Environmental Product Declaration (EPD) information refer to EPD-IVP-20160147-IBE1-EN.
  - (Please refer to the Bauder **or equivalent** Tapered Insulation Layout drawing for individual board thickness, number of layers and number of ridge & Valley infills required).
  - Installation strictly in accordance with the Bauder **or equivalent** Tapered Insulation Layout drawing supplied to achieve the required U value (refer Clause 230).
  - Installation as clauses 680G and 775.
- **Angle fillets: BauderPIR M TKL 60 or equivalent angle fillets** 60 mm x 60 mm for use with insulated & un-insulated upstands, installation as clause 775.  
*Please note: where Bauder or equivalent angle fillets are used with insulation to vertical upstands, they should be of the same Bauder or equivalent insulation material.*
- **Insulating vertical upstands: BauderPIR or equivalent flatboard**, rigid urethane insulation. The vertical upstand(s) should be insulated, typically an external wall to a conditioned/habited space will be insulated in its own right e.g. a cavity wall, but there is still a requirement for a nominal 30mm thickness of insulation on the external face of the wall to reduce thermal bridging at the roof/wall intersection.  
This insulation will be a minimum of 300mm in height from the deck surface to the top of the upstand and will ideally be fitted before the flat insulation so that it is retained at the base. **Bauder or equivalent Insulated Upstand Support Brackets** should be installed to secure the top and provide a hard-leading edge.  
**Rooflight upstands (e.g. Builder's Kerbs)** that are not supplied by the rooflight supplier as part of the rooflight assembly must be insulated with 80mm thick **BauderPIR or equivalent flatboard** insulation to achieve a maximum U value of 0.30W/m²K.  
Installation as clause 681B.
- **Waterproof covering: BAUDERFLEX or equivalent ROOF SYSTEM**  
**System manufacturer: Bauder Limited or equivalent**
- **Primer: Bauder or equivalent Activator-Primer (Canister), APR01-Black**, applied to the upper surface of the Bauder **or equivalent** insulation. For application method and guidance information, refer clause 660B.

- **Underlayer: BauderTEC Sprint- DUO or equivalent**, 2 mm thick, 120g/m<sup>2</sup> glass-fibre reinforced, elastomeric self-adhesive bitumen underlayer. **Attachment:** As clauses 710, 747A.
- **Top layer / Cap sheet: Bauder K4E or equivalent**, 4.2mm thick, 250g/m<sup>2</sup> polyester reinforced, elastomeric bitumen, torch applied capping sheet, green mineral finish. **Attachment:** As clauses 710, 750B.
- **Flashings and detail work: Bauder K4E or equivalent** capping sheet as per main field area or **Bauder K5K or equivalent** capping sheet, charcoal grey / grey slate / brown mineral finish. Install as clauses 773, 775 & 777.
- **Surface protection:** N/A
- **Accessories:**
- **Bauder or equivalent Bitumen Parapet Outlet DN 100 including stainless-steel leaf guard**, complete with pre-attached bitumen connection flange. To be supplied and installed – quantity as required. Installation as clause 784E.
- **Bauder or equivalent Bitumen Parapet Tell-Tale Overflow DN 50** (on flat roofs with parapets and in non-eaves gutters. Where required in conjunction with the appropriate engineer). Installation as clause 784G.
- **Bauder or equivalent GRP edge trim** (Where required) to all perimeter kerbs – Profile: Type 6 (150mm). Colour: Black or Grey. Installation, as clause 785.
- **Bauder or equivalent Lightning Conductor Clips** (where required) – Type 4 for PVC coated tapes and uncoated tapes. Installation, as clause 786.
- **Additional Requirements:** 210, 230, 515, 520, 522, 560, 561, 562, 910, 940.
- **Guarantee information:** Refer clause 950A.

#### 7.4 – (210) ROOF PERFORMANCE

- **General:** Secure, free draining and weather tight.

#### 7.5 – (230) INSULATION

- **Thermal transmittance of roof (maximum):** 0.15W/m<sup>2</sup>K (160mm)  
U-Values quoted are based on the Bauder **or equivalent** waterproofing system build up including insulation and underlying deck material only. This does not include the supporting structure and/or any other materials within the construction below the deck, unless Bauder **or equivalent** has been advised otherwise prior to producing the calculations. Refer to the project specific U-Value Calculation for additional information.
- **Finished Surface:** Suitably even, stable and robust to receive roof covering.
- **Insulation compliance:** To relevant British Standard or Agrément certified.
- **IMPORTANT NOTE:** Where Tapered Insulation is required, the thickness stated above is an approximate average thickness, please refer to the Bauder **or equivalent** Tapered Scheme Drawings for the actual U-Value and min/max insulation thicknesses achieved.

#### 7.6 – (330) TIMBER TRIMS, ETC

- **Quality:** Planed. Free from wane, pitch pockets, decay and insect attack (except ambrosia beetle damage).
- **Moisture content at time of covering (maximum):** 22%.
- **Preservative treatment:** Contract Administrator to advise. Please note organic solvent-based timber preservatives are not permitted, as may affect the waterproofing.

### 7.7 – (331) PREFORMED METAL HARD EDGE INSULATION PROTECTION ANGLES

- **Material:** Once bent (L-shaped) Galvanised mild steel
- **Thickness:** 1.6mm
- **Dimensions:**
  - **BauderPIR or equivalent:** 50mm x 50mm
  - **BauderROCK or equivalent / BauderGLAS or equivalent:** 75mm x 75mm
- **Length:** 3 m max.

### 7.8 – (515) ADVERSE WEATHER

- **General:** Do not lay coverings in high winds, wet or damp conditions or in extremes of temperature unless effective temporary cover is provided over working area.
- **Unfinished areas of roof:** Keep dry, protect edges of laid membrane from wind action.

### 7.9 – (520) INCOMPLETE WORK

- **End of working day:** Provide temporary seal to prevent water infiltration.
- **On resumption of work:** Cut away tail of membrane from completed area and remove from roof.

### 7.10 – (522) PROTECTION AND STORAGE OF MATERIALS

- Store the materials in clean, dry, well-ventilated and cool conditions. Where there are storage containers on site, these may be suitable for storing products.
- The products must not be exposed to a direct naked flame or other ignition sources, or to solvents or other chemicals.
- Store materials designated as temperature sensitive in facilities where temperatures can be maintained at recommended levels.
- Insulation products must be kept dry and protected from wet weather during storage and installation.
- Ensure the product(s) are clear of buildings and any other storage areas.
- Refer to specific Bauder **or equivalent** product Technical Datasheet for further information.

### 7.11 - (560) GENERAL WORKMANSHIP REQUIREMENTS

- Installation of the Bauder **or equivalent** waterproofing system may only be carried out by trained and certified operatives approved by Bauder Ltd **or equivalent** and who carry current ID badges. These should be available for inspection at all times.
- Workmanship must comply with Codes of Practice BS 8217:2005 (or alternatively Bauder Ltd.'s **or equivalent** specification where otherwise stated). Non-compliant workmanship will not be permitted, even if the system is watertight. The client will be told that all such faults must be remedied, before the Guarantee is issued.
- All waterproofing materials and system components must be supplied by Bauder Ltd **or equivalent**, unless otherwise stated. Any sub-standard materials or un-authorised alternatives will be rejected. Any building work which is the responsibility of the roofing contractor and has a bearing on the life of the Bauder **or equivalent** System must be carried out by properly trained and qualified tradesmen.
- Any structural damage, peculiarities or details discovered that might affect the performance of the Bauder **or equivalent** system, should be reported immediately to the client's representative and Bauder Limited **or equivalent** in order that they may assist in overcoming the problem.

- At the end of each working day, the new waterproofing should be terminated with a secure and waterproof temporary seal, which will be left in situ, utilising **Bauder or equivalent** self-adhesive underlayer material (e.g. **BauderTEC Sprint DUO or equivalent**) to create the seal. The **Bauder or equivalent** self-adhesive underlayer should be extended onto the flat AVCL by a minimum of 200mm from the exposed edge of the insulation and heat activate to ensure a satisfactory seal. To ensure that no moisture contamination of the system can occur between each working period, it is essential that the night seal is properly and securely bonded.
- Where building works are to be carried out by other trades, following completion of the waterproofing, the contractor must make adequate provision for supplying protection to prevent damage to the new membranes. The final inspection will not be carried out by the **Bauder or equivalent** Site Technician or the **Bauder or equivalent** nominated Independent surveyor until all associated trades are complete and the roof areas are clear from all debris and protection layers.
- It is imperative that the **Bauder or equivalent** Approved Contractor conforms to the workmanship criteria as listed above. Any deviation will result in the contract being considered unguaranteeable.
- All mechanical and electrical work to plant and equipment should be carried out by competent mechanical and electrical qualified tradesmen. All plant is to be reinstated and re-commissioned on completion of the roofing works in accordance with the client's detailed specification.
- Where building works are to be carried out by other trades, following completion of the waterproofing, the contractor must make adequate provision for supplying protection to prevent damage to the new waterproofing.
- If any items of plant/equipment are to be situated on the finished roof, a sacrificial layer of Bauder capping sheet is to be loose laid beneath. This is to extend a minimum of 25mm past the point of contact on all sides. In the case of heavy items, it may be necessary to introduce a load-spreading slab, please contact **Bauder or equivalent** for further advice.
- All lead work to be carried out by skilled tradesmen and in accordance with current codes of practice and the recommendations of the Lead Contractor Association.

#### 7.12 – (561) SITE INSPECTIONS

- **Bauder or equivalent** Site Technicians will carry out regular inspections of the project during the course of the works.
- **Bauder or equivalent** must be notified when the roof is ready for final inspection and all related works and snagging complete. See also clause 910.

#### 7.13 – (562) HEALTH & SAFETY INFORMATION – ROOFING WORK

1. Follow the advice shown in the "Responsible Specification Checklist" produced by the National Federation of Roofing Contractors.
2. Suitable precautions must be taken to prevent accidents occurring when roofing systems are being installed.
3. The contractor must ensure that adequate measures are taken to effectively prevent injury to members of the public, contractors and any other persons who may be affected by the works including the public.
4. Where microwave equipment is installed at roof level, care must be taken to prevent persons working on the roof from being exposed to large doses of microwave radiation.
5. Similarly, the contractor should liaise with the client to ensure that there are no extract outlets situated on the roof where noxious or harmful emissions could affect persons working. Suitable precautions will be necessary to prevent exposure where this situation arises.

6. The contractor is responsible for providing adequate firefighting equipment in the form of extinguishers during work on the roof. These should be kept in easily accessible locations and be suitably signed.
7. Whenever possible, access to the roof should be made via internal staircases rather than by temporary means. Where this is not available, it is the responsibility of the contractor to ensure a safe means of access, egress and a safe workplace.  
As far as roofs are concerned, edge protection in the form of scaffolding or a fixed structure should be in place to a height of 1.1 metres in accordance with the Workplace (Health, Safety and Welfare) Regulations 1992.  
Failing this, the hierarchy of controls should be applied from the Work at Height Regulations 2005. Means of access should be by fixed ladder, passenger hoist or scaffolding.
8. The contractor must ensure that suitable written method statements and risk assessments are available for the work being undertaken. In particular, it is essential that manual handling methods be fully assessed as roofing materials are heavy and can cause serious injury.
9. The contractor must ensure that suitable information about the roof covering is provided to the Client at the end of the work to ensure that work in future can be carried out safely. This information will form part of the Safety File.
10. All persons working on the roof should be provided with, and wear, suitable personal protective equipment and wet weather gear. Training must be provided to all contract staff on the safe use of the equipment.
11. The installer must observe Product Safety Datasheets, relevant to the materials being used as well as completing and complying with COSHH risk assessments.
12. We draw your attention to your duties under the Construction (Design and Management) Regulations 2015. Regulation 4, Client's duties in relation to managing projects states that the client must make suitable arrangements for managing a project, including the allocation of sufficient time and other resources. Regulation 5, Appointment of the Principal Designer and the Principal Contractor states that where more than one contractor will be working on a project at any time, the client must appoint a Principal Designer and a Principal Contractor.  
Please note that although Bauder **or equivalent** will assist with the roof waterproofing system design, we will not undertake the role of Principal Designer (PD).  
Similarly for the Building Safety Act 2022 and the BRAE Regulations the Client has duties which include the appointment of a Principal Designer and/or a Principal Contractor. Bauder **or equivalent** recognizes its duties as a Designer under the CDM Regulations and the Building Safety Act. With our skills, knowledge and experience we can help to ensure that the roof design is compliant with the Building Regulations, however we do not have overall responsibility for the planning, management and monitoring of the design work during the design phase. We are not obligated to co-ordinate all matters relating to the design work which are not directly related to the flat roof system specification. Bauder **or equivalent** are not in a position where we can take all reasonable steps to ensure compliance with the building regulations for aspects of the building works outside of the flat roofing system design or overall responsibility for co-ordination of such.
13. It is always the responsibility of the contractor to carry out a risk assessment on all aspects of the contract. The 'Safe2Torch' checklist is solely for guidance for the safe installation of torch-on reinforced bitumen membranes and use of gas torches in the workplace.

#### 7.14 - 610A) SUITABILITY OF SUBSTRATE

- **Substrates Generally:**
  - Secure and properly fastened to the sub-structure, clean, dry, smooth, free from frost, corrosion, contaminants, loose material, damage and protrusions.

- Compatible with waterproofing / coating system.
- **Substrate Design:**
- Plywood should conform to BS EN 636-3 S (Structural) Condition of Use Service Class 3 (Exterior), minimum 18mm thickness as specified by client.
- OSB/3 should conform to BS EN 300 & CPD/CE, minimum 18mm thickness as specified by client.
- **Setting out:** The new deck, should be fixed directly to either the joists or firings using non corroding ring shank nails/recommended screw fasteners.
- All board edges should be fully supported by either the joists, firings or noggins.
- Board joints to be close butted and staggered in accordance with BS 8217. Expansion gaps between boards on long and short edges to be 3mm.
- **Fasteners:**
- Type: As recommended by panel manufacturer.
- **Fastener heads:** Flush with, or below the boards surface.
- **Moisture content and stability of substrate:** The deck should be protected from wetting during transportation, storage and installation on site before the Waterproofing System is installed. Before installing the waterproofing system, moisture readings should be taken into the timber deck and not just the surface. The results should be recorded. Readings should be no more than 20%.
- **Deck Falls:** Refer to clauses 110/120/130 above (where appropriate) for roof specific requirements.
- No deflections or back-falls shall be present if the deck is designed to achieve a zero falls finished surface.
- Falls to comply with the drainage requirements of BS 6229:2018 and current codes of practice BS 8217:2005.
- The design should take account of construction tolerances, permitted deviations and deflections under load, as per Item 4.4 of BS6229:2018.
- An Engineer's deflection analysis and site level survey should be consulted before commencement of waterproofing. Measures to rectify back-falls or deflection shall be undertaken by the deck installer/supplier prior to commencement of the waterproofing system.
- **Preliminary work:** Complete including:
  - Formation of upstands, kerbs, box gutters, sumps, grooves, chases and expansion joints.
  - Fixing of battens, fillets and anchoring plugs/strips.
- **Preparation:** The approved waterproofing contractor is to inspect the installed deck and report any issues, including insufficient falls, that may have a detrimental effect upon the waterproofing system to both the Clients representative and Bauder Limited **or equivalent**.
- **Priming:** Before priming and application of the membrane, the substrate shall be clean and dry, free from surface water, ice, snow or frost, dust, dirt, oil, grease, or any foreign matter detrimental to the adhesion of the waterproofing system.

#### 7.15 – (610C) SUITABILITY OF SUBSTRATE

- **Substrates Generally:**
  - Firmly fixed, secure, clean, dry, smooth, free from frost, contaminants, loose material, voids, protrusions, and organic growths.
  - Compatible with waterproofing / coating system.
- **Substrate Design:** New concrete substrates and structures should be designed and constructed in accordance with:
  - BS EN 1992-1-1:2004 Eurocode 2: Design of concrete structures. General rules and rules for buildings (+A: 2014).

- BS 8500-2:2015 Concrete - complimentary British Standard to BS EN 206. Specification for constituent materials and concrete (A2: 2019).
- BS EN 206:2013 Concrete - Specification, performance, production and conformity.
- The maximum permissible departure from datum, in accordance with BS 8204-2:2003+A2:2011 Screeds, bases and in situ floorings Concrete wearing surfaces Code of practice shall be SR2 (5mm).
- **NBS Reference**
  - E10-In situ Concrete.
  - E20-Formwork for In Situ Concrete.
  - E30-Reinforcement for In Situ Concrete.
  - E60-Pre-Cast Concrete Floors and Roof Decks.
  - M10-Cement Based Levelling and Wearing Screeds.
- **Concrete Density:** In-Situ Concrete density should be as per the concrete manufacturer's specification and no less than 1842kg/m<sup>3</sup> for hotmelt applications.
- **Moisture content and stability:** Must not impair the integrity of roof with a target moisture content of ≤5%.
  - Concrete should be allowed to hydrate (cure) for 28 days (unless specific information is made available regarding variations in concrete specification and design). To avoid premature drying out, employ measures to minimise early age thermal cracking. Surface shall be dry.
  - In-Situ concrete placed into a vented profiled metal deck permanent shuttering may take a minimum of 60 days to cure.
  - Pre-Cast Concrete Planks should be fully cured prior to delivery to site.
  - A minimum of 14 days from concrete installation should be allowed before 'Peel Bond Tests' are carried out with Bauder **or equivalent** in attendance. If successful adhesion tests are carried out in accordance with Bauder **or equivalent** requirements, installation of the waterproofing system can commence. Further guidance is provided in BS 8217:2005 clause 5.1.2 and 6.7.
- **Surface Applied Curing Compounds:**
  - Details of Surface Applied Curing Compounds (Sodium Silicate preferred) proposed or used shall be provided to the Bauder **or equivalent** Approved Contractor/Bauder **or equivalent** Technical Department to ensure compatibility with the waterproofing system specified. Please refer to BS 13670:2009. Other acceptable curing methods are Water Cure, Wet Coverings, Plastic Sheets.
  - Surface Applied Curing Compounds that have been used and identified as incompatible with the specified waterproofing system shall be removed via scarification or sandblasting or alternative method approved by Bauder Technical **or equivalent**.
- **Concrete Surface Finish:** Concrete Surfaces shall be to a wood float, wood trowelled equivalent, broom or Bauder **or equivalent** Approved finish and uniform. Steel float finishes and overworking of the concrete can lead to laitance, which will need to be removed prior to priming. Please refer to the manufacturer's Installation and Quality Assurance Manual for important information.
- **Deck Falls:** Refer to clauses 110/120/130 above (where applicable) for roof specific requirements.
  - No deflections or back-falls shall be present.
  - Falls are to comply with the drainage requirements of BS 6229:2025 and current codes of practice BS 8217:2005.
  - The design should take account of construction tolerances, permitted deviations and deflections under load, as per Item 4.4 of BS 6229:2025.
  - An Engineer's deflection analysis and site level survey should be consulted before commencement of waterproofing. Measures to rectify back-falls or deflection shall be undertaken by the deck installer/supplier prior to commencement of the waterproofing system.

- **Preliminary work:** The new concrete to be allowed to cure thoroughly, remove rough edges, and surface defects. Rough surfaces should be scarified or ground to achieve acceptable surface for waterproofing.
- Complete including:
  - Application of surface screed to create falls if specified, or to remove surface irregularities.
  - Open concrete plank joints should be grouted with sand and cement prior to specified waterproofing installation.
  - Voids, cracks, holes, honeycombs and other damaged horizontal or vertical surfaces shall be repaired or reinforced before application of the membrane.
  - Formation of abutment upstands, kerbs, box gutters, sumps, grooves, chases (raggles) and expansion joints.
  - Fixing of battens, fillets and anchoring plugs/strips as required.
- **Priming:**  
Before priming and application of the membrane, the substrate shall be clean and dry, free from surface water, ice, snow or frost, dust, dirt, oil, grease, or any foreign matter detrimental to the adhesion of the waterproofing system. Any scaling or laitance on the surface of the concrete shall be removed either by scarification, grinding, sandblasting or other Bauder **or equivalent** Approved method.

#### ADHESION TESTS

- **Requirement:**  
Carry out a test to determine substrate suitability to receive the waterproofing system.
- **Curing times:** It is imperative that the concrete substrate is allowed to cure sufficiently as per above recommendations.
- **Nature of test:** The contractor shall carry out a "peel" bond test to each roof area to be prepared for waterproofing. The testing should be carried out well in advance of the actual application, in case any remedial treatment is required, or further curing is necessary.
- **Test:** Clean a small area of the substrate being tested by using a soft broom/brush to remove any dirt/debris from the surface. Dry surface as required. Apply the specified primer (where required) to the substrate (500mm<sup>2</sup>) which must be allowed to dry as per Bauder **or equivalent** recommendations. Once the primer has dried, apply the specified AVCL, Underlayer or Membrane as per Bauder **or equivalent** recommendations. Leave overnight. Cut a triangular shaped incision through the Bauder **or equivalent** AVCL/Underlayer/Membrane in the central zone of the test patch. If the membrane/build-up can be peeled up easily from the substrate, then the substrate is not ready (adhesive failure). This could be due to the deck requiring extra cure time or be an issue of contamination or laitance within the surface. If the membrane/build-up cannot be pulled away and distorts when pulled, then the bond is considered satisfactory.  
(An extended Bauder Peel Bond Test procedure description is available as a .pdf on request).  
We recommend that a second Peel Bond Test is done 24/48 hrs after the first to confirm the security of the first test results.
- **Test results:** Submit and arrange for inspection. We recommend that all Peel Bond Tests are recorded via photo or video referencing the location.

#### 7.16 – (640) FIXING TIMBER TRIMS

- **Fasteners:** type/length appropriate and suitable to particular deck substrate.
- **Fixing centres (maximum):** 500 mm.

### 7.17 – (641) INSTALLING PREFORMED METAL HARD EDGE INSULATION PROTECTION ANGLES

- **Location:** Use to provide hard edge protection at all internal gutter channels on warm roofs where the insulation from the flat area steps down to meet the insulation in the gutter sole.
- **Preparation:** Surface to be inspected and cleaned if necessary, using white spirit to remove any contaminants, dirt or dust & primed with the specified Bauder **or equivalent** primer. Prepared material to be thoroughly dry before use.
- **Installation:** The 50mm x 50mm or 75mm x 75mm (dependant on insulation type) once bent galvanised mild steel angle to be adhered to the exposed leading edge of the insulation using the specified Bauder **or equivalent** primer along the upper surface/edge. The purpose being to retain the metal in position to prevent any post-installation movement.

### 7.18 – (660A) APPLYING PRIMER

- **Primer: Bauder or equivalent Quick Dry Bitumen Primer.**
- **Purpose:** Quick drying substrate primer to seal and prepare dry surfaces of a variety of common substrate material prior to the application of Bauder **or equivalent** bituminous waterproof membranes.
- **Before application:** All surfaces must be dry, clean and free from dust, dirt, oil, grease and loose material.
- **Application method:** Apply a thin even coat using a brush or roller to provide full coverage. Avoid pooling.
- **Application rate:** between 4-8 m<sup>2</sup> per litre, dependent upon substrate porosity
- **Application temperature:** 5-25°C
- **Drying time:** 3-6 hours dependent upon ambient temperature and substrate porosity.
- **Coats:** Fully bond. Allow volatiles to dry off thoroughly between coats. Never attempt torching within 30 min of primer application, even if the surface appears dry.
- **Re-application:** Necessary after 24 hours exposure if waterproofing has not yet been applied, to maintain adhesion performance.
- **Caution:** Use only outdoors in well-ventilated areas or with respiratory apparatus and keep away from all sources of ignition. Take necessary precautions to avoid the solvent vapour from entering the buildings ventilation system.
- **Note:** Where there is a requirement for Flame-Free zones or foil to foil applications on this project, it is permissible to use **Bauder or equivalent Activator-Primer (Canister), APR01-Black** as a primer in lieu of **Bauder or equivalent Quick Dry Primer**.

### 7.19 – (660B) APPLYING PRIMER

- **Primer: Bauder or equivalent Activator-Primer (Canister), APR01-Black.**
- **Purpose:** Substrate primer to seal and prepare dry surfaces of a variety of common substrate material prior to the application of Bauder **or equivalent** self-adhesive bitumen membranes.
- **Before application:** All surfaces must be dry, clean and free from dust, dirt, oil, grease and loose material.
- **Application method:** Spray Applied to provide even and full coverage. Avoid pooling. Never attempt torching within 10 min of primer application, even if the surface appears dry.
- **Application rate:**
  - 300mm wide spray
  - Coverage: Approx. 96 g/m<sup>2</sup>
  - Two coats may be required for very porous substrates.
- **Application temperature:** +5 - +30°C

- **Drying time:** Approx. 5 - 10 mins, dependent upon ambient temperature and material porosity.
- **Coats:** Fully bond. Allow volatiles to dry off thoroughly between coats.
- **Re-application:** Necessary after 4 hours exposure if waterproofing has not yet been applied, to maintain adhesion performance.
- **Caution:** Use only outdoors in well-ventilated areas or with respiratory apparatus and keep away from all sources of ignition. Take necessary precautions to avoid the solvent vapour from entering the buildings ventilation system.

#### 7.20 – (670D) LAYING AIR AND VAPOUR CONTROL LAYER

- **Attachment:** Generally, fully bonded to deck substrate in accordance with Bauder **or equivalent** requirements.  
**New Concrete Decks:** For new concrete, the air and vapour control layer should be partially bonded (in the approved Bauder **or equivalent** manner) to meet the requirements of the current codes of practice.  
**Timber Boarded / Cross Laminated Timber Decks:** First layer random nailed, as clause 355/720. Second layer, AVCL fully bonded to first layer in accordance with Bauder **or equivalent** requirements.  
**Joints in second layer (Timber Boarded / Cross Laminated Timber Decks Only):** Stagger by half a sheet.
- **Side and end laps:** minimum 100 mm, with all laps torch sealed to provide a continuous bitumen bead extrusion. Installation methods as recommended by manufacturer.
- **Penetrations:** Fully seal using bonding methods recommended by manufacturer.
- **Edges of insulation at roof edges, abutments, upstands, kerbs, penetrations and the like:** Enclose, with air and vapour control layer:
  - Dressed up 150 mm above surface of insulation, thus providing 100 mm (minimum) seal when overlapped by the roof covering.

#### 7.21 – (670G) LAYING AIR AND VAPOUR CONTROL LAYER

- **Attachment:** Generally, cold applied and fully bonded to substrate in accordance with Bauder **or equivalent** requirements.  
**Timber Boarded / Cross Laminated Timber Decks:** First layer random nailed, as clause 355/720. Second layer, **BauderTEC KSD FBS or equivalent** cold applied and fully bonded to substrate in accordance with Bauder **or equivalent** requirements.
- **Side and end laps:** minimum 100 mm, laid with all laps heat sealed to provide a continuous bitumen bead extrusion. Installation methods as recommended by Bauder **or equivalent**.
- **Penetrations:** Fully seal using bonding methods recommended by Bauder **or equivalent**.
- **Edges of insulation at roof edges, abutments, upstands, kerbs, penetrations and the like:** Enclose, with air and vapour control layer:  
 The air and vapour control layer must be dressed up all upstands and to the full extent of the detail. This is to ensure that the detail is fully encapsulated to reduce the risk to exposed combustible materials. The contractor is also to form all details in such a way that the underlayer is fully bonded to the air and vapour control layer to the full extent of the detail ensuring in a minimum fully bonded 100mm lap with the air and vapour control layer – please see Bauder **or equivalent** Bituminous detail drawings.
  - Care should be taken to ensure adhesion when the temperature is below + 5° C.

## 7.22 – (680G) LAYING WARM ROOF INSULATION - BAUDERPIR FA TAPERED - SINGLE/MULTI LAYER

- **Before installing:** Tapered insulation boards should not be installed without the appropriate Bauder Ltd **or equivalent** design available. The Roofing Contractor should always refer to the Bauder Ltd **or equivalent** design for the recommended start point and layout of boards. If contractors are unsure of the correct plan being on site, please consult Bauder Ltd **or equivalent** immediately. For installation guidance, Contractors should refer to the relevant Bauder **or equivalent** Tapered Installation Guide.
  - **Deck Suitability:** Bauder **or equivalent** cannot be held responsible for the drainage performance of tapered insulation schemes applied to an inappropriate deck surface and it is the responsibility of the installing contractor to check the roof deck surface and report any discrepancies.
  - **Thermal performance:** Refer to Bauder **or equivalent** Tapered Insulation Layout Plan for details of 'U' value achieved by this scheme and clause 230.
  - **Wastage:** All off-cuts are considered as usable and are included as such within the scheme plan.
  - **Setting out:** Laid strictly in accordance with the Bauder **or equivalent** tapered scheme plan and installation instructions. In accordance with BS 6229:2025, a level survey should be performed and appropriate remedial action should be undertaken where necessary to achieve the required minimal falls, prior to handover to the Roofing Contractor. The **BauderPIR FA G16 or equivalent Tapered** boards should be laid with the Bauder **or equivalent** number / arrow / grid pattern facing upwards.
    - **Long edges:** Fully supported
    - **End edges:** Fully supported.
    - **Joints:** Close butted together.
    - **End joints:** Stagger.
  - **Bedding: BauderPIR FA G16 or equivalent Tapered** boards are to be bonded to the upper surface of the Air and Vapour Control Layer (AVCL) (unless where a base-layer is required – please see Multiple-layer tapered schemes below) using suitable Bauder **or equivalent** Polyurethane Insulation Adhesive:
    - **Bauder PU or equivalent Insulation Adhesive - Tin or Bauder or equivalent PU Insulation Adhesive – Twin Cartridge** applied in strips following the direction of the board length giving 4No. continuous and equally spaced adhesive beads within each board width (increase to 6No. at the roof perimeter) \*
    - **Non-FA Tapered insulation board types:** Where **BauderPIR T G or equivalent Tapered** Insulation (Unfaced 1:80 / 1:40 boards) or **BauderPIR M or equivalent Flatboard** Insulation (tissue faced boards) are included within the Bauder Tapered Insulation Layout, these boards are to be bonded to the upper surface of the Air and Vapour Control Layer (AVCL) using either **Bauder PU or equivalent Insulation Adhesive - Tin or Bauder PU Insulation Adhesive – Twin Cartridge**, applied in strips following the direction of the board length giving continuous and equally spaced adhesive beads within each board width as below:
      - 500mm width **BauderVIP TE or equivalent** insulation boards - 2 no: (increase to 3 no. at roof perimeter)\*
      - 600mm width insulation boards - 2 no: (increase to 3 no. at roof perimeter)\*
      - 800mm width insulation boards - 3 no: (increase to 4 no. at roof perimeter)\*
      - 1000mm width **BauderVIP TE or equivalent** insulation boards - 4 no: (increase to 6 no. at roof perimeter)\*
- Adhesive bead widths, spray patterns and coverage rates are stated on the appropriate product label and datasheet.

- **Multiple-layer tapered systems:** Where the total thickness of tapered insulation required is greater than can be achieved by a single layer, base-layer board(s) of **BauderPIR FA-TE or equivalent Flatboard** can be adhered to the AVCL/previous layer(s) to make up the total thickness required before the uppermost layer of **BauderPIR FA G16 or equivalent / BauderPIR T G or equivalent Tapered** boards are installed.
- **Additional Layer(s):** Each additional layer of insulation board(s) should be laid off-set and staggered with the layer below and should be bonded together using the following adhesives:
- **Bedding:** As stated above. Surface should be clean and free of debris before application of the additional layer(s)
  - **Foil to Foil (e.g. FA-TE to FA-TE):** **Bauder or equivalent Activator Primer (Canister) – APR01-Black** spray applied to the surface of both layers or **Bauder PU or equivalent Insulation Adhesive – Twin Cartridge** applied in strips following the direction of the board length giving continuous and equally spaced adhesive beads within each board width (as stated above).
  - **Foil to tissue Faced/unfaced boards (e.g. FA-TE to 1:80 tapered boards):** **Bauder PU or equivalent Insulation Adhesive – Tin** or **Bauder PU or equivalent Insulation Adhesive – Twin Cartridge**. Applied in strips following the direction of the board length giving continuous and equally spaced adhesive beads within each board width (as stated above).
- **Uppermost layer:** The **BauderPIR FA G16 or equivalent Tapered** board layer should be bonded using **Bauder or equivalent Activator Primer (Canister) – APR01-Black** spray applied to the surface of both layers or **Bauder PU or equivalent Insulation Adhesive – Twin Cartridge** applied in strips following the direction of the board length giving continuous and equally spaced adhesive beads within each board width (as stated above). **BauderPIR FA G16 or equivalent Tapered** boards should be laid with the Bauder number/arrow/grid pattern facing upwards. Boards should be laid off-set and staggered with the layer below.
- **Ridge & Valley Infills:** The **BauderPIR GFS G16 or equivalent (ridge infills) & BauderPIR KFS G16 or equivalent (valley infills)** should be bonded using **Bauder or equivalent Activator Primer (Canister) – APR01-Black**, spray applied to the tapered board and bottom of the infill giving continuous full coverage of the infill and the area where the infill is to be placed.
- **Protection to exposed edges of insulation:** Reduced thickness treated timber batten as clause 640 (or equivalent plywood construction), a minimum width of 150mm and 10mm less in thickness than the insulation to accommodate the build-up of the waterproofing layers – all securely fixed to the deck. Outer edges chamfered at changes in level.
- **Completion:** Boards must be in good condition, well-fitting and stable.
- **IMPORTANT NOTES:**
  - **Bauder or equivalent Activator-Primer (Canister), APR01-Black, must be applied to the uppermost surface of insulation prior to installation of the self-adhesive underlayer.**
  - Foil to Foil installation (e.g., FA-TE to FA-TE) must not be carried out using the **6.5kg Bauder PU or equivalent Insulation Adhesive – Tin**.
  - Foil to AVCL installation (e.g., FA G16 Tapered directly to KSD FBS) must not be carried out using **Bauder or equivalent Activator Primer (Canister) – APR01-Black**.

*\*BS EN 1991-1-4 uses the following guidance to calculate perimeter zones. Buildings up to and including 10m in height have a perimeter zone of not more than 2m. Buildings over 10m, uses the calculation of  $2 \times \text{the building height} \div 10$ . These are general guidance rules and do not take into account all of the information used in a full wind uplift calculation, they are therefore superseded by a project specific calculation.*

### 7.23 – (681B) INSTALLING WARM ROOF INSULATION (INSULATED UPSTANDS)

- **Bedding:** Bonded to the upper surface of the air and vapour control layer (AVCL) using suitable Bauder **or equivalent** Polyurethane Insulation Adhesive. The adhesive should be applied in strips following the direction of the board length giving 3 no. continuous and equally spaced adhesive beads within each board width. Upstand insulation boards should be installed before the insulation to the flat areas so that the vertical upstand insulation is retained both at the base and at the top. Adhesive bead widths are stated on appropriate product label and datasheet.  
**Note:** Where the surface is uneven or difficult to bond to, it is permissible to use suitable thermally broken fixings.
- **Multiple board layers:** Where the total thickness of insulation required is greater than can be achieved by a single standard board, then additional boards can be adhered to the previous layer(s) to make up the total thickness required. These additional boards should be bonded using suitable Bauder **or equivalent** Insulation Adhesive.
- **Foil to Foil Insulation Boards Only:** These additional boards should be bonded using either **Bauder or equivalent Activator Primer (Canister) – APR01-Black** or **Bauder PU or equivalent Insulation Adhesive – Twin Cartridge**.
- **Foil to Tissue Faced Boards:** These additional boards should be bonded using suitable Bauder **or equivalent** Insulation Adhesive.  
Adhesive bead widths or adhesive spray patterns and coverage rates are stated on appropriate product label and datasheet.  
The adhesive should be applied in strips following the direction of the board length giving 3 no. continuous and equally spaced adhesive beads within each board width. Upstand insulation boards should be installed before the insulation to the flat areas so that the vertical upstand insulation is retained both at the base and at the top.  
The second layer of boards should be laid off-set and staggered.  
**Note:** Where the surface is uneven or difficult to bond to, it is permissible to use suitable thermally broken fixings.
- **Insulated upstand brackets:** Bauder **or equivalent** insulated upstand support brackets must be used at all vertical abutment wall upstands (where the wall cavity is insulated) in conjunction with 30mm Bauder **or equivalent** insulation. These are to be fixed at 400mm centres using suitable fixings through the air and vapour control layer, so that the top edge is a minimum of 300mm above the surface of the deck. A 3mm gap should be left between adjacent sections. The detail is to be carried out in accordance with the Bauder detail drawing, where provided.
- **Protective hard edges:** treated timber battens or Bauder Insulated upstand brackets (as appropriate to given detail situation) must be used at all right-angled edges e.g. top edges of parapet walls or abutment upstands.
- **Encapsulation seal:** Provision must be allowed for forming a minimum 100mm lap seal between the air and vapour control layer and underlayer where the insulation finishes.
- **Important Notes:**
  - **Bauder or equivalent Activator-Primer (Canister), APR01-Black, must be applied to the facing of the uppermost surface of insulation prior to installation of the self-adhesive underlayer.**
  - Foil to foil installation (e.g. FA-TE to FA-TE) must not be carried out using **the 6.5kg Bauder PU or equivalent Insulation Adhesive – Tin**.
  - Foil to AVCL installation (e.g. FA G16 Tapered directly to KSD FBS) must **not** be carried out using **Bauder or equivalent Activator Primer (Canister) – APR01-Black**.

### 7.24 – (710) LAYING REINFORCED BITUMEN MEMBRANES GENERALLY

- **Direction of laying:** Unrolled up the slope.

- Where practicable, install so that water drains over and not into laps.
- **Side and end laps (minimum):** 100 mm, with the exception of mineral surfaced membranes, where side laps are 80 mm, but the head laps to remain 100 mm.
- **Head and side laps:** Offset.
- **Intermediate and top layer/Capping sheet:** Fully bond.
- **Successive layers:** Apply without delay. Do not trap moisture.
- **Strips of bitumen membrane for 'linear' details:** Cut from length of roll e.g. gutter sole pieces.
- **Detail flashings:** to be cut from width of roll.
- **Completed coverings:** Firmly attached, fully sealed, smooth, weatherproof and free draining.

#### 7.25 – (747A) SELF-ADHESIVE BONDING OF REINFORCED BITUMEN UNDERLAYER

- **Bond:** Full over whole surface, with no air pockets.  
Please note that Bauder or equivalent Activator-Primer (Canister), APR01-Black, must be applied to the uppermost layer of Bauder or equivalent Insulation prior to installation of the self-adhesive underlayer.
- **Underlayer:** Cold applied and fully bonded by removing the peel off release film.  
**Side Laps:** to be 80mm and must be **laid red over blue**, and heat sealed/torched (depending on 'Flame-Free' & 'Safe to Torch' zones) and rolling with the **Bauder or equivalent Long Handled Lap Roller** to extrude a continuous bead of bitumen.  
**Head Laps:** to be 100mm and staggered, heat sealed/torched (depending on 'Flame-Free' & 'Safe to Torch' zones) to extrude a continuous bead of bitumen.  
The underlayer must be taken up all upstands, edge details, in accordance with current British Codes of Practice and Bauder **or equivalent** recommendations. The underlayer must be fully heat sealed/torched (depending on 'Flame-Free' & 'Safe to Torch' zones) with the air and vapour control layer to the full extent of the detail ensuring a minimum 100mm fully bonded lap - please see Bauder Bituminous detail drawings.
- **Alternative underlayer for detail work:** For detailing to un-insulated abutment upstands, where the waterproofing is to be applied to rough or uneven non-combustible surfaces i.e. brickwork or concrete, it is permissible for the installing contractor to use the Bauder **or equivalent** underlayer appropriate to the specified system where this product is considered to be better for application to these surfaces. For all other situations, and particularly to vertical insulation, the Bauder **or equivalent** Self-Adhesive Underlayer appropriate to the specified system must be used.
- **Provision for prevention of wind uplift (where required):** Mechanically fix as per the corresponding project specific wind load calculation, using appropriate thermally broken fasteners (for un-insulated roofs as clause 355A and for warm roof as clause 355B), fixed through to the deck. The fixings should be through the side laps and head laps and through the central line of the membrane. The side and head laps to be fully sealed following installation of the fixings. A separate flashing of Bauder **or equivalent** underlayer, 200mm wide is to be installed over the central line of fixings and fully sealed following installation of the fixings to ensure waterproofing integrity.
- **Fixing of bitumen membranes to vertical upstands:** Please refer to clause 775.

#### 7.26 – (750A) LAYING MINERAL FACED REINFORCED BITUMEN TORCH-ON CAPPING SHEET - 'SAFE TO TORCH' ZONE

- **Bond:** Full over whole surface, with no air pockets.
- **Excess compound at laps of top layer/ capping sheet:** Leave as a continuous bitumen bead extrusion.

- **Laying top layer:** Fully bonded to the underlayer by torching in the approved Bauder **or equivalent** manner. Head laps to be 100 mm, side laps to be 80 mm. All laps to upstands, edge details, flashings, etc. to be 100 mm.
- **Fixing of bitumen membranes to vertical upstands:** Please refer to clause 775.
- **Final Inspection:** The finished roof must be thoroughly inspected by the Bauder **or equivalent** Site Technician. This is to ensure that any remedial treatment that is necessary can be carried out prior to issuing the guarantee. Failure to ensure the instigation of this inspection will result in the issuing of the Bauder guarantee being put in jeopardy.
- **IMPORTANT NOTE:** The mineral slate finish is a natural product, so the raw material may differ in colour and shade, over which Bauder **or equivalent** has no control. There may also be colour variations between each roll of membrane.

#### 7.27 – (773) 'FLAME-FREE' & 'SAFE TO TORCH' ZONES - ALTERNATIVE MEMBRANES AND APPLICATION

- For detailing application in locations constructed from or within the 'Flame-Free' & 'Safe to Torch' zones to potentially combustible materials or otherwise where it is considered appropriate by the contractor necessary to minimise the potential risk.
- **Primers: Bauder or equivalent Activator-Primer (Canister), APR01-Black,** must be used when using Bauder **or equivalent** self-adhesive membranes and a 'FLAME-FREE' application is required.
- **Underlayers:**  
It is permissible to use a Bauder **or equivalent** self-adhesive membrane so long as this product is a recognised component of the system specified.  
Acceptable alternatives underlayers are listed below: -
  - **BTRS: BauderFLEX G4E or equivalent** to be replaced with **BauderTEC KSA DUO or equivalent**
  - **BauderFlex or equivalent: Bauder EGV 35 TF or equivalent** to be replaced with **BauderTEC Sprint DUO or equivalent**
  - **BTRS Plus: N/A**
  - **System Airtech: N/A**
- **NB:** Where surface is uneven or not suitable for a self-adhesive membrane and where the surface is of a non-combustible material and is not required to be a 'Flame-Free' or 'Safe to Torch' zone – it is permissible to use a Torch Applied underlayer, so long as the product is a recognised component of the system specified.

Acceptable alternative underlayers are listed below:

- **BTRS: BauderTEC KSA DUO or equivalent** to be replaced with **BauderFLEX G4E or equivalent**
- **BauderFlex or equivalent: BauderTEC Sprint DUO or equivalent** to be replaced with **Bauder EGV 35 TF or equivalent**
- **BTRS Plus: N/A**
- **System Airtech: N/A**
- **Capping sheets:** Where appropriate, the installing contractor can use **Bauder KSO-P SN / KSO ALP SN or equivalent** self-adhesive capping sheet, applied using the hot air hand tools approved for use with bituminous systems. Please note that **Bauder or equivalent Activator-Primer (Canister), APR01-Black,** must be applied to the underlayer prior to installation of the self-adhesive capping sheet.
- **BauderTEC KSO-P SN or equivalent** is only available in one colour – Charcoal Grey

- **BauderTEC KSO ALP SN or equivalent** is only available in one colour – Brown
- **Self-adhered membranes** - For upstands using only self-adhesive membranes, these will need to be mechanically fixed at the top leading edge of the membrane with Bauder **or equivalent** aluminium peel bar regardless of the upstand height. This will be for System Airtech and for areas referred to as 'Flame-Free' zones. Please refer to Bauder **or equivalent** Bituminous Standard Detail Drawings.
- **Green Roof Notes:** Please note it is strictly only permissible to use self-adhesive capping sheet for flashings and detailing work when installing **BauderGREEN XF 301 Sedum Blanket or equivalent** or Hard landscaping finishes.
- **Approved Hot Air Equipment**  
The **BauderTEC KSO-P SN / KSO ALP SN or equivalent** membrane must be applied using the approved hot air hand tools. The list of permissible hot air electrical equipment suppliers for installing Bauder **or equivalent** waterproofing membranes are stated below. These are available either for purchase or hire from the below companies:

#### 7.28 - HOT AIR WELDING EQUIPMENT

**Contact:** Welwyn Tool Group, Tel 01707 331 111, <http://www.welwyntoolgroup.co.uk>

#### **JAMES LISTER & SONS LIMITED**

Contact number: 0121 553 2949, Email: [sales@lister.co.uk](mailto:sales@lister.co.uk)

#### **ETORCH**

**Contact:** Imperial Thermal Engineering Ltd, Tel 01376 330582,

<http://www.imperialthermal.co.uk>

#### 7.29 – (775) SKIRTINGS AND UPSTANDS

- **Angle Fillets**
- **Warm Roof Systems:** Where there is insulation to the vertical upstands, the angle fillets should be of the same insulation material that has been installed to the upstands.
- **Uninsulated / Inverted Warm Roof Systems:** For all uninsulated or inverted warm roof specifications, **BauderPIR M TKL 60 or equivalent Angle Fillets** must be used.
- **BauderPIR FA-TE / FA or equivalent Tapered or Un-insulated (cold) / Inverted Warm Roof**  
**BauderPIR M TKL 60 or equivalent angle fillets (60 mm x 60 mm)** must be used at all right-angled upstands.
- **Warm Roof Construction:** Provisionally bonded in suitable **Bauder or equivalent Polyurethane Insulation Adhesive** or **Bauder or equivalent Activator-Primer (Canister), APR01-Black**, and subsequently retained once the underlay detailing is applied.
- **Un-insulated/Inverted Warm Roof Construction:** Coat both the surface area to receive the angle fillet and the angle fillet with **Bauder or equivalent Activator-Primer (Canister), APR01-Black**. Once both surfaces are tacky, place the angle fillet in the correct location and apply pressure to the angle fillet to ensure adhesion is achieved.
- **Composite decks (e.g. Kingspan or equivalent Benchmark Topspan / Envirodeck):**
- **Prefabricated upstands:** Insulation and pre-fabricated galvanized steel upstands to be supplied by deck manufacturer and be installed by the decking contractor prior to the waterproofing work being carried out. Refer NBS section H43 specification. Coat both the surface area to receive the angle fillet and the angle fillet with **Bauder or equivalent Activator-Primer (Canister), APR01-Black**. Once both surfaces are tacky, place the angle fillet in the correct location and apply pressure to the angle fillet to ensure adhesion is achieved.

- **BauderROCK Insulation**
- **BauderROCK or equivalent angle fillets**, must be used at all right-angled upstands, bonded using either **Bauder PU or equivalent Insulation Adhesive – Tin** or **Bauder PU or equivalent Insulation Adhesive – Twin Cartridge**. The adhesive should be applied in a single strip following the direction of the angle fillet. Place the angle fillet in the correct location and ensure adhesion is achieved.
- **BauderGLAS or equivalent Insulation**
- **BauderGLAS or equivalent angle fillets**, must be used at all right-angled upstands, bonded using either **Bauder PU or equivalent Insulation Adhesive – Tin** or **Bauder PU or equivalent Insulation Adhesive – Twin Cartridge**. The adhesive should be applied in a single strip following the direction of the angle fillet. Place the angle fillet in the correct location and ensure adhesion is achieved.
- ***IMPORTANT NOTE*** - under no circumstances must fillets of an alternative material be incorporated (i.e. timber, cork, fibre, etc.) as this would invalidate the guarantee.
- **Layers of bitumen membrane:** Carry in staggered formation up the upstand, with each layer fully bonded.
- **Upstands:**
- **At ends of rolls:** Underlay layer only, form with bitumen membrane carried up without using separate strip.
- **Elsewhere:** Form with matching strips of bitumen membrane, maintaining laps.
- **Upstand details (150mm minimum height):** This must be taken from the finished roof surface. Please note that for landscaped roofs, this minimum height is measured from the finished landscape surface as opposed to the waterproofing surface. \*Special attention should be paid to all structures, such as rooflights, counter-flashings, window and door cills, pipes etc. Bauder cannot take responsibility for water ingress over waterproofing details constructed below the recommended minimum height.
- **Level Thresholds:** Acceptable, providing conforms to BS 6229:2025 and current NHBC Standards, chapter, 7.1.
- **Requirements:**
- Minimum 75mm upstand height. (This must be taken from the waterproofing or top of the insulation if an inverted warm roof).
- Falls are directed away from the door cill.
- Waterproofing is dressed up and under the door cill. Prior to installation of the door frame, the membranes must be dressed up the reveal to a minimum 150mm in height.
- Door cill has a minimum 45mm overhang.
- Provision is made for emergency overflow to prevent water getting to the waterproofing and cill interface.
- **Any level threshold details not meeting this standard cannot be guaranteed by Bauder or equivalent.**
- **Note:** Bauder or equivalent recommends the installation of a linear drain (**BauderGREEN ER MR 150/60 or equivalent linear drain and grill plate** is suitable for this purpose) in front of the access door threshold, to help prevent rainwater splash back and snow build-up.
- **Flashings:** Separate flashings must always be formed. Capping sheet taken up the upstand in one piece will not be permitted.
- **Green Roof Notes:** If the client should desire not to see a green mineral finish then it is permissible to install a piece of suitable colour Bauder or equivalent bituminous capping sheet membrane.

The Bauder **or equivalent** root resistant capping sheet must be taken a minimum 150mm from the finished landscaping surface\*. The suitable coloured Bauder **or equivalent** bituminous capping sheet must be lapped onto the Bauder **or equivalent** root resistant capping sheet by a minimum 150mm and lapped onto the structure by a minimum of 100mm.

- **Fixing of bitumen membranes to vertical upstands:**

Where upstands terminate in excess of 250mm above the finished surface of the main field area capping sheet, screw fix through into the underlying substrate as per the requirements set out below and in accordance with the Bauder **or equivalent** Reinforced Bitumen Membrane Installation Guide.

#### UNDERLAYER - INSULATED UPSTANDS ONLY:

Prior to the installation of the self-adhesive underlayer, ALL insulation board types used to create an insulated upstand require a coating of **Bauder or equivalent Activator-Primer** applied to the surface of the insulation board. The Activator-Primer should be applied at a rate of 96g/m<sup>2</sup>.

Insulated upstands exceeding 600mm in height will require additional fixings through the insulation board depending on the board type used, at a rate of:

- **BauderPIR FA-TE or equivalent**, 5No. fixings, one in each corner and one in the centre
- **BauderROCK or equivalent**, 1No. fixing, in the centre of the board.
- **BauderGLAS or equivalent** 1No. fixing, in the centre of the board.

Use thermally broken tube washers with a minimum 45mm round head, and fasteners. Tube size and fastener type for insulation and substrate as recommended by fixing supplier. Screw fix through into the underlying substrate, ensuring that washer is pulled in tight to the insulation.

#### CAPPING SHEETS - ALL UPSTANDS:

- **Terminating on the vertical:** Where the capping sheet is required to terminate on a vertical face, a **Bauder or equivalent Aluminium peel bar** is to be used, mechanically fixed at 150mm centres (as per pre-drilled holes) with appropriate fixings suitable to the substrate. Unless protection is being provided to the top leading edge of the membrane and fixing penetrations by an external component, the termination should then be covered with the specified counter flashing material dressed over the top to ensure waterproofing integrity.  
Should a traditional lead counter flashing be used, then a separating tape will need to be used between the aluminium bar and lead flashing.
- **Please note:** *A Bauder or equivalent termination bar is not to be used in this scenario unless it has been specified by Bauder or equivalent. Termination bars are not suitable for brickwork substrates. No additional membrane cover flashing is required.*
- **Terminating on the horizontal:** Where the capping sheet is taken onto the horizontal, e.g., on top of the parapet, the membrane must be fixed (using fixings appropriate and suitable to the substrate) with either:
  - A **Bauder or equivalent Aluminium peel bar**, mechanically fixed at 150mm centres (as per pre-drilled holes).
  - 5No. screws and washers per capping sheet width, one fixing set in 50mm from the edge of either side of the sheet, with the three remaining fasteners equally spaced in between.
  - A **Bauder or equivalent GRP Trim**, mechanically fixed at 300mm centres (maximum) using screw fasteners of type appropriate to kerb or deck substrate. Nail fixing is not permitted.
- **Capping sheet cover flashing:** - A separate flashing of Bauder **or equivalent** capping sheet will be required to cover the fixings (please see Bauder detail drawings).
- **Please note:** *Upstands using only self-adhesive membranes (E.g. System Airtech and areas referred to as 'Flame-Free' zones) will need to be mechanically fixed at the top leading edge of the membrane with a Bauder or equivalent aluminium peel bar regardless of the upstand height, unless it is retained by a GRP Trim on the horizontal.*

- Where an exposed edge of **Bauder or equivalent** capping sheet terminates on its vertical edge, a separate lead cover flashing must be installed to protect the edge of the exposed membrane. This lead flashing must extend onto the membrane by a minimum 100mm and to the full height of the vertical flashing, then extended underneath the horizontal cover flashing to protect the top leading edge.

#### **Upstands that exceed approximately 1100mm: -**

**Bauder Ltd or equivalent** do not advocate the use of bitumen waterproofing on upstands exceeding approximately 1100mm due to consideration of the fire regulations. This should be carried out in an appropriate alternative as specified by the client. Please consult with Building Control for confirmation of upstand waterproofing requirements where the height exceeds 1100mm.

#### **MECHANICAL FASTENER SUPPLIER**

Refer to the **Bauder or equivalent Registered Fastener Suppliers** list for options.

#### **Mechanical Fasteners**

**Type:** Deck depth specific screws together with associated galvanised pressed steel washer plates.

#### **7.30 – (777) SECONDARY WEATHERING (PIPES, DUCTING etc.)**

- Provision must be made to supply and install a secondary weathering flashing above all waterproof upstand detailing to pipe penetrations, balustrade posts, cable entry pipes, ventilation ducting, sun pipes etc. This can take the form of a welded collar (where appropriate) or a bespoke galvanized cowling or hood sealed with a suitable sealant and fasteners. Solvent welded plastic collars fitted to plastic soil vent pipes.

#### **7.31 – (784A) ROOF DRAINAGE OUTLETS**

- Product name:** **Bauder or equivalent Bitumen Vertical Outlet**
- Material:** Cast polyurethane body with integral bituminous connection flange.
- Product size/ reference:**
  - Bauder or equivalent Compact Vertical Outlet DN 100**, 6.1 litres/sec. flow rate, with vertical spigot designed to connect to standard 110mm pipework.
  - Bauder or equivalent Vertical Outlet DN 70**, 7.1 litres/sec. flow rate, with vertical spigot designed to connect to standard 75mm pipework.
  - Bauder or equivalent Vertical Outlet DN 150**, 7.2 litres/sec. flow rate, with vertical spigot designed to connect to standard 160mm pipework.
- Flow rate:** Refer to the appropriate Technical Data Sheet and project specific drainage calculation.
- Pipe connection:** **Bauder or equivalent High Capacity Vertical Outlet** are suitable for connection to:
  - uPVC "O" ring socketed soil grade pipe to BS 4514: 1983
  - Socketed and socket-less cast-iron pipework to BS 416:1973 and EN 887. Socketed pipework will require cold caulking or PVC to cast iron adaptors. Socket-less pipework can be connection using an appropriate SML mechanical coupling.
  - HDPE pipework with appropriate SML mechanical coupling
- Type of grate/ fittings:** supplied with a tough polyamide Dome Grate leaf guard.  
**Alternative:** **Bauder or equivalent Locking Leaf Guard Long Leg:** Additional component where higher durability or security is required.

- **Bauder or equivalent Extension/Compact Extension Unit - Warm roofs only:** When the outlet is used as part of a warm roof build-up and the insulation thickness exceeds 60 mm, an additional extension component must be used. The **Bauder or equivalent Extension Unit** is suitable for use with Insulation:
  - 60mm - 220 mm.
 If the insulation is below 60mm a timber frame must be built to accommodate the outlet.
- **Extension Unit Housing** – Polyurethane housing board 500 x 500 x 60mm with pre-molded opening to receive the **Bauder or equivalent Extension Unit**. Thermal Conductivity 0.025 W/Mk. Compressive Strength 200 kPa and a Density of 50 kg/m<sup>3</sup>.
- **Material:** Cast polyurethane body with integral bituminous connection flange.
- **Fixing:** The extension unit must be mechanically fixed through the PUR rim to the structural deck.
- **Type of grate/ fittings:** When required the Dome Grate leaf guard is transferred from the **Bauder or equivalent Compact Vertical Outlet**.
- **Bauder or equivalent Vertical Outlet - Installation requirements:** These components that form part of the Bauder **or equivalent** waterproofing system and for guarantee reasons, should only be installed by Bauder **or equivalent** Approved installers. Connectivity to below deck drainage pipework to be the responsibility of the plumbing contractor.
- **Fixing:** The outlet is to be secured through the rim to the structural deck by a minimum of four fasteners appropriate to obtain an adequate attachment to the deck substrate material. Some deck structures require preparatory works before the outlets can be installed: -
  - **Concrete decks** – the opening for the outlet to be either pre-cast or core-drilled so that the outlet can be installed at the same time as the air and vapour control layer. Provision for a 250 mm dia. opening is required.
  - **Profiled metal decks** – these also require a 250 mm dia. Opening cut into the decking, but in addition will require a 600 x 600 x 1.25 mm galvanised steel reinforcing plate secured to the deck before the outlet can be installed. This item has a pre-cut 250 mm dia. hole and is available from Bauder.
  - **Isolating outlet/sump/gutter:** All outlets/gutters/sumps should be isolated from the rest of the system utilising a separate piece of AVCL/underlayer flashing. This should be turned down from the main field area and sealed a minimum 100mm onto the AVCL and 100mm with the Underlayer. For detailed information, refer to the Bauder Technical Data Sheet and Bauder Detail Drawing.
- **Outlet locations:** Rainwater outlets should be located evenly as far is practicable, taking into account the falls on the roof and the positioning of any plant etc. and allow safe access to outlets and hoppers for maintenance purposes.
- **Overflows/tell-tale overflows:** An appropriate Engineer should consider the requirement for overflows on all roofs. A full capacity overflow should be provided when there is only one outlet on a given roof area.
- Outlet can be used as an emergency overflow. BS EN 12056:3 2000 suggests the overflow is set 35mm higher than the outlet it is being used as an emergency overflow for.

### 7.32 – (784E) ROOF DRAINAGE OUTLETS

- Product name: **Bauder or equivalent Bitumen Parapet Outlet DN 100 including stainless-steel leaf guard**
- Material: 600mm Stainless steel circular spigot with integral bituminous connection flange.
- **Product size/ reference:** 100 mm diameter nominal opening, 110mm diameter circular horizontal spigot designed to connect to external hopper head or pipework.
- **Angle of spigot:** 3°.

- **Flow rate:** Refer to the appropriate Technical Data Sheet and project specific drainage calculation.
- **Suitability:** These outlets are designed to be used as a through chute to external parapet walls in either warm, un-insulated or inverted warm roof applications, feeding to an external hopper-head/pipework and downpipe leading to a ground level open gully or soak-away. They are not suitable or intended for connection to internal pipework that is within a wall construction or boxed in and is inaccessible after construction.
- Detailing with vertical insulation:
- **Vertical insulation:** a timber frame, 10 mm less in thickness than the insulation being installed, must be used to form an isolation frame around the outlet that enables the air and vapour control layer and underlayer to form a 100 mm overlap e.g. 20 mm thick timber used with 30 mm thick insulation. The timber frame should be mechanically secured to the deck/ upstands and in turn will provide a means of securing the outlet body to the roof.
- **Type of grate/ fittings:** supplied with a 220mm wide stainless steel leaf guard.
- **Installation requirements:** These outlets are components that form part of the Bauder **or equivalent** waterproofing system and for guarantee reasons, should only be installed by Bauder **or equivalent** Approved installers.
- **Fixing:** The deck or wall structure may require preparatory works before the outlets can be installed: -  
Concrete decks – the opening for the outlet to be either pre-cast or core-drilled. The outlet body is designed to have a slight fall, so the penetration should be cut/ formed to reflect this. The outlet is to be secured to the structural deck/ upstand by a minimum of four fasteners through the outlet base plate to obtain an adequate attachment to the deck substrate material.
- **Isolating outlet/sump/gutter:** All outlets/gutters/sumps should be isolated from the rest of the system utilising a separate piece of AVCL/underlayer flashing. This should be turned down from the main field area and sealed a minimum 100mm onto the AVCL and 100mm with the Underlayer. For detailed information, refer to the Bauder Technical Data Sheet & Bauder **or equivalent** Detail Drawing.
- **Outlet locations:** Rainwater outlets should be located evenly as far as is practicable, taking into account the falls on the roof and the positioning of any plant etc. and allow safe access to outlets and hoppers for maintenance purposes.
- **Overflows/tell-tale overflows:** An appropriate Engineer should consider the requirement for overflows on all roofs. A full capacity overflow should be provided when there is only one outlet on a given roof area.
- Outlet can be used as an emergency overflow. BS EN 12056:3 2000 suggests the overflow is set 35mm higher than the outlet it is being used as an emergency overflow for.

### 7.33 – (784G) PARAPET EMERGENCY TELL-TALE OVERFLOW

- **Product Name:** Bauder or equivalent Bitumen Parapet Tell-Tale Overflow DN 50
- **Material and specification:** Stainless Steel. Length of tube 1200mm. Bitumen flange 350 x 350mm.
- **Flow Rate:** In accordance with BS EN 12056:3 2000, overflows or emergency outlets should be provided on flat roofs with parapets and in non-eaves gutters in order to reduce the risk of over spilling of rainwater into a building or structural overloading.
- **Suitability:** Emergency tell-tale overflow outlets are designed to be used as a through chute to warn of a build-up of water on the roof due to a blockage of the drainage system(s). They are not

suitable or intended for connection to internal pipework that is within a wall construction or boxed in and is inaccessible after construction.

- **Installation requirements:** The deck or wall structure may require preparatory works before the overflow can be installed.
- **Bauder or equivalent Bitumen Parapet Tell-Tale Overflow DN 50** to be installed through the system and parapet after creation of a suitable size diameter opening. The overflow should be secured in place and should only be installed by **Bauder or equivalent Approved installers**. The overflow opening should be positioned approx. 35mm above the height of the waterproofing finish.
- **Fixing:** Dress the **Bauder or equivalent Bitumen Underlayer** around the penetration to be detailed.  
Mechanically fasten the overflow through the **Bauder or equivalent Bitumen Underlayer** & through the substrate to enable the pipe to extend past the external edge of the parapet. The bitumen membrane flange can then be bonded to the **Bauder or equivalent Bitumen Underlayer** field sheet.  
Once in place, the **Bauder or equivalent Capping Sheet** is to be dressed around the pipe and fully bonded to the **Bauder or equivalent Bitumen Underlayer**, ensuring a bitumen bleed is achieved around the pipe opening.
- **Outlet locations:** Ensure outlets are evenly distributed. Exact location and number to be confirmed by the appropriate Engineer.
- **Overflows/tell-tale overflows:** An appropriate Engineer should consider the requirement for overflows on all roofs. A full capacity overflow should be provided when there is only one outlet on a given roof area.

#### 7.34 – (785) FIXING PERIMETER TRIMS

- **Important note:** To be used on parapets and perimeter kerbs with an inward fall or are less than 200mm in width.
- **Bituminous Membranes:**
  - The first layer of membrane **must** be self-adhesive and dressed to the full extent of the detail using Flame-Free methods. This is to ensure that the detail is fully encapsulated to reduce the risk of fire to exposed combustible materials.
  - Dress the underlayer up and over the perimeter detail to provide a 25mm overhang.
  - Please refer to Bauder **or equivalent** standard detail drawings.
- **Trim:**
  - **Trim face depth:** 1=44mm, 2=44mm, 3=70mm, 4=100mm, 6=150mm
  - **Colour:** Type 1 & 2 = Black Type 3, 4 & 6 = Black or Grey
  - **Setting out:** 10mm gap between the back edge of the bottom of the drip to the fascia/wall and 3mm gap between abutting lengths of trim.
  - **Fasteners:** Screw fasteners of type appropriate to kerb or deck substrate. Nail fixing is not permitted.
  - **Fixing:** 30mm from ends and at 300mm (maximum) centres, stagger fixed. **Can be used to retain the capping sheet where the capping sheet is taken to the full extent of the detail.**
  - **Please see Bauder or equivalent detail drawing.**
- 150mm deep trims (type 6) – 3no. additional fixings per length of trim. The fixings are to be face fixed with screws and positioned 75mm down from the top edge, one fixing 100mm in from each end and one in the centre and capped with coloured matched plastic weathering caps. A fixed timber packer will be required behind the face of the trim to help facilitate ease of fixing

- *For roofs above 10 metres in height – the 100mm deep trim (type 4) will require face fixing, as per 150mm trim above. A fixed timber packer will be required behind the face of the trim to help facilitate ease of fixing.*
  - **Jointing sleeves / bridging piece:** All lengths should be close butt jointed using an internal jointing sleeve. This must be provided to each joint.
  - **Corner pieces:** Purpose made.
  - **Completion:**
  - **Contact surfaces:** Prime with **Bauder Primer.**
  - **Joints:** Cover with 200mm long pads of bitumen membrane, bonded to trim.
  - **Completion of bitumen membrane:**
  - **Top layer/ Capping sheet:** Butt joint to rear edge of trim.
  - **Cover strip:** Fully bond to trim and top layer/ capping sheet of bitumen membrane. Carry over roof edge upstand and lap 100 mm onto roof. The capping sheet is to be dressed tightly into the top lip of the trim, ensuring a bead of bitumen extrudes at the edge. Please see Bauder **or equivalent** detail drawing.
  - **Wall / kerb joints:** The new trim must cover any open joint that may exist at the top of the kerb or wall, by a minimum distance of 20mm.
- Where the top of the parapet is installed flat or has no inward fall, we would strongly recommend using the GRP Water Check Trim to avoid any standing water being blown over the trim and staining the brickwork/render.**

### 7.35 – (786) LIGHTNING CONDUCTOR CLIPS

- The lightning conductor is to be fixed using the specified conductor clips, incorporating a colour matched Bauder **or equivalent** capping sheet pad, fully bonded to the main capping sheet at 1m centres by the approved Bauder **or equivalent** roofing contractor. Lightning conductor retention using bituminous membrane strips are not acceptable.
- Where lightning conductors are required to be fixed to brickwork, upstands, parapet walls etc., proprietary clips mechanically fixed should be utilised. Care should be taken to ensure that fixings do not penetrate the new waterproofing system.

### 7.36 – (863) DESIGNATED MAINTENANCE WALKWAYS

- **Location:** As designated by the client.
- **Application:** Remove the selvedge lap prior to installing. Membrane to be fully bonded to the previous capping sheet layer, making provision for leaving intermittent 100 mm gaps between sheets to form drainage channels, particularly where the walkway layer impedes water run-off.

### 7.37 – (910) INSPECTION

- **Interim and final roof inspections:** in accordance with the manufacturer's requirements for guarantee.
  - **Notification:**
- Final Inspection:** It is the responsibility of the approved contractor to advise Bauder Ltd **or equivalent** when the roof is ready for Final Inspection. The 'Final Inspection' of the waterproofing must be carried out and approved by Bauder Ltd **or equivalent** prior to any landscaping products/materials being installed, otherwise a guarantee cannot be issued. Safe access to carry out this inspection must be provided.
- **Other requirements:** Please also refer to preliminaries / general conditions.

- **If project needs to follow NHBC Requirements:** The waterproofing must be visually inspected and electronically tested for waterproofing integrity, faults rectified and retested prior to the installation of any landscaping products. The results of the test(s) should be made available to the NHBC.

#### 7.38 – (J41/940) COMPLETION

- **Roof areas:** Clean.
- **Outlets:** Clear.
- **Work necessary to provide a weather tight finish:** Complete.
- **Storage of materials on finished surface:** Not permitted.
- **Completed membrane:** Do not damage. Protect from chemicals, traffic and adjacent or high-level working.

#### 7.39 – (950C) GUARANTEE

- A 20 year product and workmanship guarantee is to be provided upon completion following a Final Inspection by Bauder **or equivalent**. Details regarding the full terms and conditions are available separately from Bauder Ltd **or equivalent** upon request. This system must be installed by a Bauder **or equivalent** Approved Contractor, to be eligible for guarantee. The system comprises the waterproofing membranes, insulation, air and vapour control layer, and attachment of these products.
- **IMPORTANT NOTE:** This type of guarantee is not valid for Flat Cold Roofs

#### 7.40 - INSULATION OF UPSTANDS / PARAPETS

- All Existing parapets shall be encapsulated with new insulated warm roof waterproofing system with insulated upstands.
- Proposed new Waterproofing system shall be carried to the outer edge of the existing parapet / concrete capping prior to the installation of new aluminium capping / perimeter edging as specification below.
- Refer to Full Bauder **or equivalent** Warm roof system specification.

#### 7.41 - RAINWATER OUTLETS

- Contractor shall provide the alteration / provision of new rainwater outlets throughout, all new outlets shall be provided in conjunction with new warm roof finish level, refer to architects drawings for location of parapet walls for horizontal outlets and vertical outlets with internal downpipes.
- Refer to Specification clause 7.31 – (784a) **ROOF DRAINAGE OUTLETS** & 7.32 – (784e) **ROOF DRAINAGE OUTLETS** below for new **Bauder or equivalent Bitumen Parapet Outlet including stainless-steel leaf guard**.
- All proposed new outlets in the gable walls shall consist of a lead chute detail to facilitate a larger flow rate, to be read in conjunction with manufactures detail.
- Code 5 lead counter flashing shall be provided on external face of new outlet chutes.

#### 7.42 – CHANGE IN LEVEL DETAIL

- Contractor shall provide a controlled change in level between roofs following the removal of the existing roofing system and upstand kerbs between Roof 3 & 3A, Roof 5 & 5A, Roof 7 & 7A

- Proposed upstand / change in level shall be provided in accordance with manufactures design and detail.

#### 7.42.1 - STRUCTURE

- Timber studs: 200 x 44 mm treated, kiln-dried, strength-graded softwood, minimum C16, complying with IS 127 and I.S. EN 14081-1:2016+A1:2019.
- Studs at centres 400 c/c, with noggings and head/bottom rails as required to suit structural and lining support requirements.
- All structural timber:
  - Preservative treated suitable for use class as required.
  - Stored, handled and installed to prevent distortion and moisture damage.

#### 7.42.2 - SHEATHING BOARD

- New timber sheathing board shall consist of 18mm WPB Plywood manufactured to BS EN 636:2012+A1:2015
- All plywood shall be WBP bonded first grade and shall be faced with veneer as specified.
- One side shall be completely free from joints and surface defects.
- Joints and minor blemishes will be permitted on the reverse side only.
- Where both sides of the plywood are exposed, these shall be totally free of joints and surface defects.
- FSC certified and CE marked.
- Fixed to timber studs in accordance with manufacturer's recommendations and structural engineer's details, with staggered joints and tight butt joints.
- Joints supported to all edges; damaged or wet boards to be rejected.

#### 7.42.3 - INSULATION (BETWEEN STUDS)

- 200mm PIR insulation to **UNILIN Thin-R XT/TF** or equivalent , manufactured to **EN 13165**.
- Rigid PIR core with low emissivity foil facings.
- Agrément declared  $\lambda = 0.022 \text{ W/m}\cdot\text{K}$ .
- Boards tightly fitted between studs with no gaps; all voids > 2 mm filled with compatible insulation.
- Install strictly in accordance with UNILIN **or equivalent** manufacturer's instructions.

#### 7.43 – DEFECTIVE WOODWOOL STRUCTURE & DECK REPLACEMENT

- Refer to Clause 5.17 above for full detail regarding procedure for damage discovered during the strip- out of Roof 01 & Roof 09.
- The existing woodwool roof slab shall be treated as a fragile roof construction unless and until its condition and structural capacity have been confirmed by a competent structural engineer.
- Upon exposure of the existing woodwool slab, the Contractor shall carefully inspect the slab for evidence of water saturation, staining, softening, friability, cracking, delamination, sagging, deflection, loss of bearing or other deterioration.
- The Contractor shall also inspect the associated supporting structure, including steelwork, reinforcement, timber members, purlins, beams, bearings and fixings, for corrosion, decay or damage.
- The extent of the affected areas shall be recorded on a roof plan and supported by dated photographic records.

- Woodwool slabs that are softened, friable, delaminated, significantly cracked, sagging, inadequately supported or otherwise incapable of safely supporting the proposed roof construction shall be carefully removed.
- Removal shall generally extend to complete slab sections between structural supports unless otherwise agreed with the Structural Engineer.
- Installation of the new vapour control layer, tapered insulation and waterproofing system shall constitute a hold point and shall not proceed until the repaired or retained roof deck has been inspected and approved.
- Contractor shall ensure works are carried out in sequenced manner to account for inclement weather / provision of temporary sealing the building during works if the situation arises which causes works to temperately stop on site as the building is currently fully operational. contractor shall supply all necessary sheathing, screens and covers etc.

#### 7.43.1 – REPLACEMENT TIMBER STRUCTURE.

- Damaged areas shall be replaced with a new structural roof deck designed by the Structural Engineer. Replacement roof structure works shall be carried out in a localized manner, contractor shall not remove large areas of existing structure without approval.
- Contractor shall **provide replacement of 15% of existing Woodwool roof slab** with a new timber structure on Roof 01 & Roof 09.
- New structure shall consist of 225 x 44mm C16 joists @ 400centres with bridging to engineers recommendation, fixed with heavy-duty stainless-steel joist hangers.
- Contractor shall install double joists where alterations are required around rooflight openings.
- Proposed new joists shall consist of Treated Rough Sawn Timber construction timber is kiln dried and strength graded to a minimum grade of C 16 and complies with the requirements of IS-127 standard & I.S. EN 14081-1:2016+A1:2019.

#### 7.43.2 – REPLACEMENT SUBSTRATE / TIMBER DECK

- New timber decking shall be installed throughout all timber structure flat roofs consisting of 18mm WPB Plywood manufactured to BS EN 636:2012+A1:2015.
- All plywood shall be WBP bonded first grade and shall be faced with veneer as specified. One side shall be completely free from joints and surface defects. Joints and minor blemishes will be permitted on the reverse side only. Where both sides of the plywood are exposed, these shall be totally free of joints and surface defect.
- Note: The new vapour control layer

### 8. THERMAL DRYLINING OF WINDOW HEADS

- An Insulated dry lining wall insulation shall be applied to the existing clerestory window heads up to the underside of the roof slab throughout in conjunction with the window replacement works and ceiling alterations. Refer to architects drawings for extents.
- The insulated dry lining wall insulation shall be Thin-R XT/TL or equivalent manufactured to BS EN 13950:2014 by Unilin Insulation or equivalent, comprising of a rigid Polyisocyanurate (PIR) core with kraft paper facings.
- The Thin-R XT/TL or equivalent 70mm with an Agrément declared Lambda value of 0.022 W/mK (PIR only) bonded to 12.5mm plasterboard.

- The insulated drylining plasterboard XT/TL or equivalent shall be fixed with plaster dabs adhesive or proprietary metal frame system in accordance with instructions issued by Unilin Insulation or equivalent.

## 9. INSTALLATION OF NEW ROOFLIGHTS

- Refer to Architects drawings for the location of 30 no. Flat glass rooflights in conjunction with the specification below.
  - Roof 1 includes 3 no. Rooflights
  - Roof 2 includes 2 no. Rooflights
  - Roof 3 includes 4 no. Rooflights
  - Roof 4 includes 1 no. Rooflight
  - Roof 5 includes 4 no. Rooflights
  - Roof 6 includes 5 no. Rooflights
  - Roof 7 includes 4 no. Rooflights
  - Roof 8 includes 7 no. Rooflights
  - Roof 9 – No Rooflights
- All existing openings shall be prepared opening on exiting roof as indicated on architects' drawings.
- Refer to M&E package for Electrical connections to rooflights.

### 9.1 – 1200 x 1200mm ELECTRICALLY OPERATED ROOFLIGHTS

#### **Proposed 29 No. 1200 x 1200mm Velux or equivalent Electrically operated Flat roof window with curved glass roof shall consist of:**

- All (29no.) proposed rooflights shall Electrically operated flat roof windows with curved glass top cover as follows:

#### **Description**

- Electrically operated flat roof window with curved glass cover for roof pitches from 0-15°.
- VELUX INTEGRA® **or equivalent** convenient operation with Integrated rain sensor for automatic closing during rain.
- Plywood frame with white polyurethane mould, aluminium sash with white lacquer finish.
- Glass-to-edge curved glass top cover fits ensures uninterrupted drainage and clear view to the sky.
- Unique window construction with a slim frame and invisible sash provides maximum daylight.
- Double or triple glazed window for excellent energy performance and sound reduction.
- Laminated insulated glass unit for safety.
- U-value of just 0.55 Urc,ref300 (triple glazed) 0.65 Urc,ref300 (double glazed) for the complete window installation.
- Available in seven sizes with kerb height of 150 mm.
- Extension frame for warm roof installation.
- CE marked.
- Impact resistance EN 14351-1+A2 and EN 13049 - Class 3.
- The external fire performance classification according to EN 13501-5 :2016 is tested to be: B Roof T4.

**Colour:** White

**Material:** PVC Base Unit, Anodised Aluminium Top Cover. Polyurethane & Aluminium

**Width x Height:** 1200mm x 1200mm

**Warranty description:** Ten Year for window & pane, 3 year for blinds & electrics

**Form:** Electrically operated flat roof window with curved glass cover.

Fire Resistance: To BS EN 13501-5, B Roof T4.

**Whole Window U-Value:** 0.55 Urc for triple Glazed

**Frame**

- **Material :** Polyurethane
- **Colour:** White base, black brown profiles on top cover

**Glazing**

**Type:** Triple glazed window with laminated inner pane for additional safety.

**Integral Kerb:** 150mm (Min Height)

**Operation:** Electrically operated.

**Control:** KLI **or equivalent** Wall Switch

**Accessories:**

- ZCU 120120 0015. **or equivalent** (Extension frame for warm roof installation 1200 x 1200 mm)
- DSU **or equivalent** Solar Blackout blind, See below

**Execution:** Installation of frames rooflights

**Window Code:**

CVU 120120 0025Q + ISJ 120120 1093. **or equivalent**

(1200 x 1200 mm; triple glazed base unit; curved glass cover)

**Velux or equivalent Intelligent Control**

- Velux Touch **or equivalent** to Control multiple VELUX **or equivalent** solar and electric product
- VELUX Touch **or equivalent** makes it easy to feel perfectly comfortable at home by ensuring every VELUX INTEGRA® **or equivalent** roof window, blind and shutter is always within easy reach. Let in a cool breeze when you need a breath of fresh air, shield the room from the midday sun with a single remote.
- Remote operation within the room
- Grouping of rooflights
- Simple control of multiple VELUX INTEGRA® **or equivalent** products
- Quick and easy access to frequently used features
- Ventilation timer for quick airing
- Not dependent on Wi-Fi.

9.2 – 2400 x 1200mm ELECTRICALLY OPERATED ROOFLIGHTS

**Proposed 1No. 2400 x 1200mm Velux or equivalent Electrically operated Flat roof window with curved glass roof shall consist of:**

- Proposed rooflight shall Electrically operated flat roof windows with curved glass top cover as follows:

**Description**

- Electrically operated flat roof window with curved glass cover for roof pitches from 0-15°.
- VELUX INTEGRA® **or equivalent** convenient operation with Integrated rain sensor for automatic closing during rain.
- Plywood frame with white polyurethane mould, aluminium sash with white lacquer finish.
- Glass-to-edge curved glass top cover fits ensures uninterrupted drainage and clear view to the sky.
- Unique window construction with a slim frame and invisible sash provides maximum daylight.
- Double or triple glazed window for excellent energy performance and sound reduction.
- Laminated insulated glass unit for safety.

- U-value of just 0.55 Urc,ref300 (triple glazed) 0.65 Urc,ref300 (double glazed) for the complete window installation.
- Available in seven sizes with kerb height of 150 mm.
- Extension frame for warm roof installation.
- CE marked.
- Impact resistance EN 14351-1+A2 and EN 13049 - Class 3.
- The external fire performance classification according to EN 13501-5 :2016 is tested to be: B Roof T4.

**Colour:** White

**Material:** PVC Base Unit, Anodised Aluminium Top Cover. Polyurethane & Aluminium

**Width x Height:** 1200mm x 1200mm

**Warranty description:** Ten Year for window & pane, 3 year for blinds & electrics

**Form:** Electrically operated flat roof window with curved glass cover.

Fire Resistance: To BS EN 13501-5, B Roof T4.

**Whole Window U-Value:** 0.55 Urc for triple Glazed

**Frame**

- **Material :** Polyurethane
- **Colour:** White base, black brown profiles on top cover

**Glazing**

**Type:** Triple glazed window with laminated inner pane for additional safety.

**Integral Kerb:** 150mm (Min Height)

**Operation:** Electrically operated.

**Control:** KLI **or equivalent** Wall Switch

**Accessories:**

- ZCU 120120 0015. **or equivalent** (Extension frame for warm roof installation 1200 x 1200 mm)
- DSU **or equivalent** Solar Blackout blind, See below

**Execution:** Installation of frames rooflights

**Window Code:**

CVU 120120 0025Q + ISJ 120120 1093 **or equivalent.**

(1200 x 1200 mm; triple glazed base unit; curved glass cover)

### **Velux or equivalent Intelligent Control**

- Velux Touch **or equivalent** to Control multiple VELUX **or equivalent** solar and electric product VELUX Touch **or equivalent** makes it easy to feel perfectly comfortable at home by ensuring every VELUX INTEGRA® **or equivalent** roof window, blind and shutter is always within easy reach. Let in a cool breeze when you need a breath of fresh air, shield the room from the midday sun with a single remote.
- Remote operation within the room
- Grouping of rooflights
- Simple control of multiple VELUX INTEGRA® **or equivalent** products
- Quick and easy access to frequently used features
- Ventilation timer for quick airing
- Not dependent on Wi-Fi.

### 9.3 - FLAT ROOF LIGHT BLINDS

- All proposed rooflights shall include either an Anti-Heath Blind / Blackout blind, Architect shall confirm quantities of each on site (up to 30 no. total)

- Solar powered MSU and DSU can be combined with VELUX or equivalent intelligent control solutions for multiple product operation, scheduling and automation.

#### **Velux or equivalent Anti-heat blind (Solar powered MSU)**

The anti-heat blind provides light dimming and heat protection to maintain a cool and comfortable room. The blind is discreetly placed inside the rooflight, and is easily installed from the roof when installing the window.

- Reduces overheating
- Semi-transparent fabric for light control and sky view
- Solar powered blind with remote control

#### **Velux or equivalent Blackout blind (Solar powered DSU)**

VELUX or equivalent blackout blind for glass rooflights blocks outside light for total darkness, anytime. It is discreetly placed inside the rooflight and easily installed from the roof when installing the window

- 99.9% blackout
- Solar powered blind with remote control

### 9.4 - ROOFLIGHT UPSTANDS

- All proposed new rooflight shall be installed with a minimum 150mm upstand above the finish roof level or minimum required by manufacture whichever is greater.
- Following removal and disposal of existing rooflights the successful contractor shall prepare and alter the existing openings to suit the sizing of the proposed new rooflights.
- The proposed rooflight new sub construction shall consist of the following products to provide the required 150mm upstand above the new roof level :
  - Extension frame with flange (ZCU 0015), height 150 mm or equivalent
  - Extension frame (ZCU 1015) max 3 pc. height 150 mm or equivalent
  - Vapour barrier collar (BBX) to suit proposed rooflight (1200x1200mm) or equivalent
  - Securing kit (ZZZ 210U) or equivalent

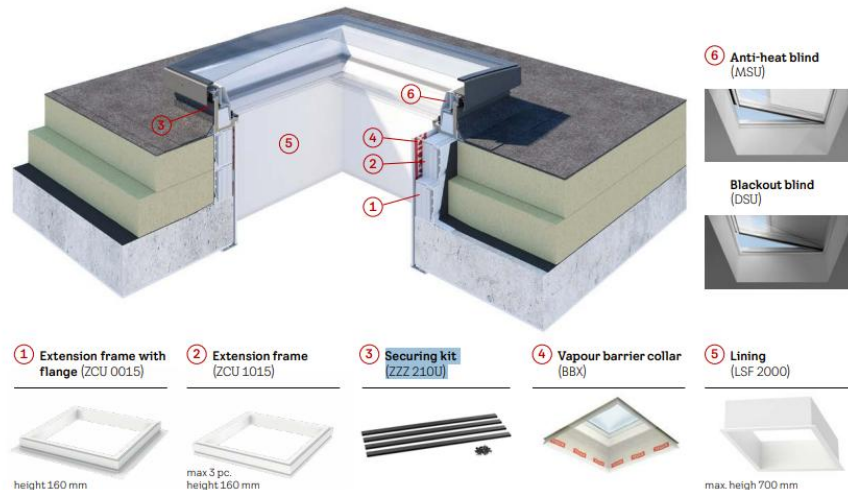
### 9.5 - ROOFLIGHT SHAFTS / INTERNAL LININGS

- Velux BCX **or equivalent** vapour barrier connection strip shall be installed to inner face of extension frames to prevent condensation occurring within the sub-construction.
- The vapour barrier connection strip BCX **or equivalent** is made of a diffusion tight polyethylene foil completed with a pre-fitted rubber gasket along one edge. With a perfect fit into the skylight frame rebate, installation is an easy job that guarantees a vapour-tight solution.
- **All new rooflights shall include a new roof light shaft**, formed using **18mm** FSC Certified moisture resistant MDF fixed to a metal frame / 100 x 50mm timber frame.
- All fixings shall be recessed with pre drilled, filled and sanded prior to decoration.
- All internal corners shall be finished with a bead of caulk to fill any gaps with adjoining panels prior to decoration.
- All linings shall be primed and painted with square edging.

### PAINT FINISH

- Contractor to include for painting of the proposed new rooflight lining to the following specification:
- Paint finish to Architects specification:
- **Manufacturer:** Fleetwood or equivalent

- **Product reference:** Fleetwood Premium Acrylic Matt Emulsion Brilliant **White or equivalent**
- **Initial / Undercoats:** Fleetwood or equivalent Primer Sealer Undercoat as recommended by manufacturer, 1no.Number of coats.
- **Finishing coats:** Fleetwood or equivalent Premium Acrylic Matt Emulsion Brilliant White or equivalent, 2no.Number of coats.
- **Total Number of coats: 3no. top coats.**



## 10. PERIMETER EDGE AND GABLE UPSTANDS

- Following the removal of the existing roof system, associated perimeter edging and fascia the successful contractor shall provide a new treated timber perimeter upstands.
- New eaves / perimeter upstand shall be provided as indicated on Architects proposed roof layout.
- Existing gable upstand shall be altered / raised to accommodate new roof system.
- The proposed upstand shall be constructed using 200mm X 44mm Treated Rough Sawn Timber construction timber is kiln dried and strength graded to a minimum grade of C 16 and complies with the requirements of IS-127 standard & I.S. EN 14081-1:2016+A1:2019.
- **The upstand shall be constructed of the primary structure with a minimum 150mm upstand above the proposed roof finish at the highest perimeter contact point.**
- The proposed upstand shall be constructed at a single level around the perimeter of the proposed roof with a tapered capping / fascia flashing, refer to specification below.
- 18mm WPB Plywood manufactured to BS EN 636:2012+A1:2015 prior to the application of a vapour control layer / breather membrane on inner roof face.

### 10.1 - STRUCTURE

- Timber studs: 200 x 44 mm treated, kiln-dried, strength-graded softwood, minimum C16, complying with IS 127 and I.S. EN 14081-1:2016+A1:2019.
- Studs at centres 400 c/c, with noggings and head/bottom rails as required to suit structural and lining support requirements.
- All structural timber:
- Preservative treated suitable for use class as required.
- Stored, handled and installed to prevent distortion and moisture damage.

## 10.2 – STEEL SUPPORT POSTS

- Contractor shall install 100x100x5mm SHS with base plate shall be mechanically bolted to existing roof slab to stabilize proposed new parapet upstand.
- Steel support posts shall be installed at max 4800mm centres.

## 10.3 - INSULATION (BETWEEN STUDS)

- Proposed upstand shall contain no air voids and all cavities shall be picked with Rigid PIR insulation consisting of :
- 200 mm PIR insulation to **UNILIN Thin-R XT/TF or equivalent**, manufactured to **EN 13165**.
- Rigid PIR core with low emissivity foil facings.
- Agrément declared  $\lambda = 0.022 \text{ W/m}\cdot\text{K}$ .
- Boards tightly fitted between studs with no gaps; all voids > 2 mm filled with compatible insulation.
- Install strictly in accordance with UNILIN **or equivalent** manufacturer's instructions.

## 10.4 – SHEATHING BOARD

- New timber sheathing board shall consist of 18mm WPB Plywood manufactured to BS EN 636:2012+A1:2015 to all upstands inner faces and area's finished with new aluminium fascia, refer below for sheathing board to cladding areas.
- All plywood shall be WBP bonded first grade and shall be faced with veneer as specified.
- One side shall be completely free from joints and surface defects.
- Joints and minor blemishes will be permitted on the reverse side only.
- Where both sides of the plywood are exposed, these shall be totally free of joints and surface defects.
- FSC certified and CE marked.
- Fixed to timber studs in accordance with manufacturer's recommendations and structural engineer's details, with staggered joints and tight butt joints.
- Joints supported to all edges; damaged or wet boards to be rejected.

## 10.5 – CLADDING FAÇADE SHEATHING BOARD

- New fibre cement sheathing board shall be installed to the outer face of new perimeter upstands where new cladding is proposed.
- Proposed sheathing board shall consist of a **Swisspearl Windstopper Extreme or equivalent**  
Specification data - Cement-bonded particleboards  
Standards: To BS EN 12467:2004, Class NT D31.  
Performance class: To BS EN 634-2.  
Reaction to fire classification: To BS EN 13501-1, Class A1.  
Thickness: 9 mm.  
Decorative overlay: Swisspearl Windstopper Extreme **or equivalent** homogenous coating.  
Preservative treatment: Swisspearl **or equivalent** boards are produced according to a flow-on method.  
Product Reference: Swisspearl Windstopper Extreme **or equivalent**  
Can be left exposed for 12 months, 90/90 fire rating (1.5 hours, 9 mm only).  
Size (w x l): 1200 x 3000 mm.  
Weight: 14.1 kg/m<sup>2</sup>.

Third-party certification: BBA approved.

## 10.6 – ALUMINIUM FASCIA

- Proposed new aluminium fascia shall be provided to altered gable upstands in accordance with clause 11 below, to be read in conjunction with architects plans for extents and architects detail drawings.

## 11. INSTALLATION OF NEW FASCIA / SOFFIT, CAPPINGS & EXTERNAL CLADDING

### 11.1 - FASCIA SUBSTRATE

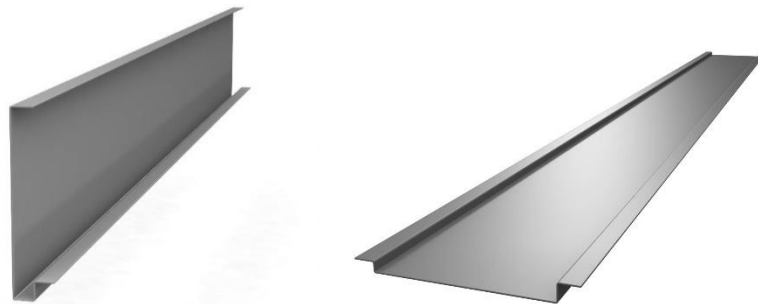
- 18mm WPB Plywood shall be fixed to existing fascia sub rails / sub structure.
- Timber Fascia shall consist of 18mm WPB Plywood manufactured to BS EN 636:2012+A1:2015.
- All plywood shall be WBP bonded first grade and shall be faced with veneer as specified.
- One side shall be completely free from joints and surface defects.
- Joints and minor blemishes will be permitted on the reverse side only.
- Where both sides of the plywood are exposed, these shall be totally free of joints and surface defects

### 11.2 - FASCIA

- Following the removal & disposal of existing fascia together with the alteration of existing eaves with new fascia board substrate, a new Alumasc Skyline Aluminium Fascia Safe Profile (**SF4**) or **equivalent** shall be installed throughout the existing building as indicated in Architects remedial roof works drawings.
- Proposed SF4 or **equivalent** profile Fascia shall be fixed throughout all eave's perimeter, firmly fixed to softwood to manufactures recommendations.
- RAL colour to be agreed with Architect before installing. All installed as per manufacturers recommendations.
- Refer to architect's drawings for extents
- Contractor shall provide all required fixings, corners, stop ends, raking angles, gable box ends, bespoke fabrications to match existing fascia.
- Proposed Fascia shall be installed in accordance with manufactured guidance including required SCA1-1x or **equivalent** Bent Aluminium Profile Trims & SCA2-2x or **equivalent** Bent Aluminium Profile Trims required.
- SF4 or equivalent Fascia profile** is a 4x bent 3mm Aluminium sheet profile
  - Form: Standard fascia.
  - Profile: Four times bent.
  - Size: 0-1000 mm.
  - Length: 3m lengths
  - Thickness or gauge: 3 mm.
  - Finish: Powder coated, Interpon D2000, Tested to BS 476.
  - Colour: To match existing.
  - Film thickness (minimum): 120-160 Microns (Marine).
  - Reaction to fire (EN 13501-1): A2.
  - Standards: To BS EN 13501:2018.

### 11.3 - SOFFIT

- Following the removal & disposal of existing soffit together with the alteration of existing eaves with new fascia board substrate, fascia and sub structure railings, a Alumasc Skyline Aluminium Soffit Standard Profile (SOF4) or equivalent shall be installed throughout the existing building as indicated in Architects remedial roof works drawings.
- Proposed SOF4 **or equivalent** profile soffit shall be fixed throughout all eave's perimeter.
- RAL colour to be agreed with Architect before installing. All installed as per manufacturers recommendations.
- Refer to architect's drawings for extents
- Contractor shall provide all required fixings, corners, stop ends, raking angles, gable box ends, bespoke fabrications to match existing soffit
- Proposed Soffit shall be installed in accordance with manufactured guidance including required SCA1-1x**or equivalent** Bent Aluminium Profile Trims & SCA2-2x **or equivalent** Bent Aluminium Profile Trims required.
- **SOF4 or equivalent Soffit panel is** a 4x bent 3mm Aluminium sheet profile
  - Form: Soffit
  - Profile: Four times bent.
  - Size: Various options available, from 0-200 mm girth to 900-1000 mm girth.
  - Length: 3m lengths
  - Thickness or gauge: 3 mm.
  - Finish: Powder coated, Interpon D2000, Tested to BS 476.
  - Colour: To match existing.
  - Film thickness (minimum): 3mm
  - Reaction to fire (EN 13501-1): A2.
  - Standards: To BS EN 13501:2018.



### 11.4 - ALUMINIUM CAPPINGS

#### Aluminium Upstand Capping

- Proposed capping shall be Alumasc Skyline **or equivalent** product supplied by **or equivalent**
- **Alumasc Skyline or equivalent – Power Coated Aluminium interlocking fascia systems** shall be provided to the full perimeter of the new roof systems.
- RAL colour to be agreed with Architect before installing. All installed as per manufacturers recommendations.
- Refer to architect's drawings for extent of proposed aluminium fascia and capping
- All Joints may be made watertight using a low-modulus silicone sealant.

#### Alumasc Skyline or equivalent Aluminium Sloping Coping Profile

SC18 - 242 mm Width **or equivalent** (151-180 mm Overall Wall Thickness)

#### Technical characteristics:

**Material:** 3 mm-thick pressed aluminium.

**Shape:** Four bent (SL profile system).

**Lengths:** 3000mm

**Height:** 75mm

**Gauge:** 3 mm.

**Method of jointing:** Wall brackets acts as cross bonding union clips and seal.

**Method of support/ fixing:** Fix coping level as standard with wall brackets at maximum 1.5m centres (or less depending on location and wall coping size).

**Mechanically fixed** - consult manufacturer's literature for substrate specific information.

**Finish** - Powder coated Plain mill, colour TBC by Architect prior to installation.

Factory finishes: Polyester powder coated to BS EN 12206-1: 2004 with a 30% gloss finish unless otherwise stated. Coating to have BBA certificate; plain mill finish

#### Accessories

- 3 mm thick brackets.
- With ethylene propylene diene monomer rubber (EPDM) seals.
- Additional straps.
- Angles.
- Stop ends.
- Fixing Strap with EPDM Seal.
- Upstands & Tee Junctions.

#### 11.5 – FAÇADE CLADDING

- Contractor shall install new façade cladding system to 10 no. facades as indicated on architects drawings.
- 8no. facades shall include include cladding from new window head to the top of new perimeter upstand (High level roof areas)
- 2 no. outer facades shall include cladding to new perimeter upstand down to existing concrete ring beam (low level roofs)
- Proposed new façade cladding system shall include a powder coated aluminium secret fix cladding panel mechanically fixed to a new horizontal aluminium sub frame system.

#### Cladding panels

**Material:** Skyline Rainscreen Cladding Secret Fix (RSF9) or equivalent

**Colour:** TBC prior to order

**Finish:** Powder-coated

**Material:** Aluminium

**Shape:** Rectangle (vertical seams)

**Length:** Bespoke – To be measured on site for each façade

**Width:** Bespoke – 600/700mm final measurements to be confirmed on site

**Panel joints:** 4 mm gap within joint for thermal expansion.

**System accessories:** Angles, window head / jamb detailing.

**Expected Life:** 40 year

#### Panel window detailing.

- Handed left and right trims to integrate into the jointing method of the connecting panels.
- Fitted using visible colour coded fixings.
- Fully bespoke offer to conceal the reveal created by the cladding system.
- Discreet integrated design which finishes flush with the outer face of the cladding.

**Secondary support structure:** SFS NVELOPE NH3 system or equivalent Horizontal aluminium sub frame system for rainscreen applications.

- NH3 is the NVELOPE® or equivalent subframe systems offering a horizontal carrier frame, ideal for vertical panel orientations or when adaptability is necessary to ensure support brackets are able to be installed into vertical steel studs.to applications, suitable for when the cladding panel is of short width.

### **Thermal break**

**NH3 or equivalent + Thermal Solutions - Stainless Steel Bracket + Thermal Pad.**

- Thermal Pad - A2 rated Areogel and Alumino Silicate Ceramic.
- Stainless steel A4/316, mill finish. Anodized and powder coating option.

## **12. UPGRADE OF EXISTING SERVICE PENETRATIONS**

- All existing service penetrations shall be altered / upgraded with the proposed new waterproofing system.
- All redundant service penetrations shall be removed, infilled and encapsulated with new waterproofing system.
- Refer to Architects drawings location of existing service penetrations in conjunction with the photos below.

### **12.1 -ROOF 1 SERVICE UPGRADES**

- 1 No. Existing Mechanical Vent shall be removed, Disposed and new mechanical vent installed on new upstand with new waterproofing detail provided upon completion.



### **12.2 -ROOF 2 SERVICE UPGRADES**

Existing Capped PVC pipe shall be investigated on site and new Bauder SVP Cover or equivalent Flat roof vents upstands with rain covers shall be provided where required.

- 1 No. Existing **Science lab vent** shall be temporary removed stored and reinstalled on new upstand with new waterproofing detail provided upon completion as indicated on architects' drawings.
- Existing redundant upstand shall be removed, previous opening infilled and new waterproofing system shall fully encapsulate.



### 12.3 –ROOF 4 SERVICE UPGRADES

- 1 No. Existing Mechanical Vent shall be temporary removed, stored and reinstalled on new upstand with new waterproofing detail provided upon completion.



### 12.4 –ROOF 6 SERVICE UPGRADES

- 1 No. Existing Mechanical Vent shall be temporary removed, stored and reinstalled on new upstand with new waterproofing detail provided upon completion.
- 1No. Existing PVC pipe shall be upgraded with new Bauder SVP Cover or equivalent Flat roof vents upstands with rain covers including new waterproofing detail.



### 12.5 –ROOF 8 SERVICE UPGRADES

- 2No. Existing PVC pipe shall be upgraded with new Bauder SVP Cover or equivalent Flat roof vents upstands with rain covers including new waterproofing detail.
- Existing redundant upstand shall be removed, previous opening infilled and new waterproofing system shall fully encapsulate.



## 12.6 – MECHANICAL VENT UPSTANDS

- New mechanical vent upstands shall be constructed of the primary structure with a minimum 200mm upstand above the proposed roof finish at the highest perimeter contact point.
- All upstands shall be insulated externally in conjunction with the new waterproofing system to omit any cold bridging, Refer to Clause 7 above for full detail.

### 12.6.1 - STRUCTURE

- Timber studs: 200 x 44 mm treated, kiln-dried, strength-graded softwood, minimum C16, complying with IS 127 and I.S. EN 14081-1:2016+A1:2019.
- Studs at centres 400 c/c, with noggings and head/bottom rails as required to suit structural and lining support requirements.
- All structural timber:
  - Preservative treated suitable for use class as required.
  - Stored, handled and installed to prevent distortion and moisture damage.

### 12.6.2 - INSULATION (BETWEEN STUDS)

- Proposed upstand shall contain no air voids and all cavities shall be picked with Rigid PIR insulation consisting of :
- 200 mm PIR insulation to **UNILIN Thin-R XT/TF or equivalent**, manufactured to **EN 13165**.
- Rigid PIR core with low emissivity foil facings.
- Agrément declared  $\lambda = 0.022 \text{ W/m}\cdot\text{K}$ .
- Boards tightly fitted between studs with no gaps; all voids > 2 mm filled with compatible insulation.
- Install strictly in accordance with UNILIN **or equivalent** manufacturer's instructions.

### 12.6.3 – SHEATHING BOARD

- New timber sheathing board shall consist of 18mm WPB Plywood manufactured to BS EN 636:2012+A1:2015 to all upstands inner faces and area's finished with new aluminium fascia, refer below for sheathing board to cladding areas.
- All plywood shall be WBP bonded first grade and shall be faced with veneer as specified.
- One side shall be completely free from joints and surface defects.
- Joints and minor blemishes will be permitted on the reverse side only.
- Where both sides of the plywood are exposed, these shall be totally free of joints and surface defects.

- FSC certified and CE marked.
- Fixed to timber studs in accordance with manufacturer's recommendations and structural engineer's details, with staggered joints and tight butt joints.
- Joints supported to all edges; damaged or wet boards to be rejected.

### 13. INSTALLATION OF NEW ABUTMENT FLASHINGS

- Contractor shall remove all existing abutment flashings within the area of works and provide new replacement flashings throughout as part of the new warm roof system. Refer Architects Drawings for extents of abutments, to be read in conjunction the specification above for the new warm roof system.
- Contractor shall provide new Code 5 lead in accordance with BSEN 12588 to all top and side abutments with cover flashings.
- All new Lead shall be treated with patination oil to prevent staining of adjacent material etc
- All lead works and abutments etc shall be carried out in accordance with good roofing practice.
- All lead work to be carried out in accordance with recommendations of lead sheet association.uk.

#### RENDER ABUTMENT

- Contractor shall include for Provision for forming a new chase and installing lead counter-flashings to the existing render finish walls of adjoining buildings to allow for the revised finish levels followed by the installation of a **new galvanised steel top bead over the lead junction with new bell cast render to patch in with existing building** together with all making good to any damages caused to existing wall finishes upon completion of works.

### 14. PROPOSED FALL ARREST & ROOF ACCESS SYSTEM

#### 14.1 - FALL PREVENTION CABLE SYSTEM

- Contractor shall provide SKYWAY **or equivalent** fall prevention cable systems & safety harness to be installed for maintenance purposes, system design and layout to be provided prior to installation and approved by architect prior to installation.
- System to be CE marked and hold EC Declarations of Conformity.
- Contractor to include for proposed system to be installed and personnel training and system operation demonstration for school facilities team member by system provider upon completion of proposed works.
- Refer to architects' drawings for provisional layout of cable and anchor points, SKYWAY or equivalent to provide system design and drawings for approval prior to works commencing on site.
- Refer to Architect's drawings for location of roof access and redirection / anchor point locations
- Contractor to Allow for Fall protection systems to Roof Sections, to be read in conjunction with architect's drawings.
- **Anchorage devices:**
- SKYWAYS™ or equivalent **Upright Post for membrane roofs** for attachment through the proposed Insulated Warm roof system to the existing metal decking in accordance with manufacturer's requirements.
- SKYWAYS™ or equivalent **Upright posts for profiles sheet roofs** shall be provided to PE Hall area in accordance with manufacturer's requirements.
- **Overall system length:** Refer to Architects provisional Layout, SKYWAY or equivalent to provide system design and drawings for approval prior to works commencing on site.
- Intermediate support spacing: System shall be installed as per the requirements of the SKYWAYS or equivalent ManSafe design software.

- System access to be from a suitable MEWP.
- System to be used by a maximum of 2 persons simultaneously.
- System to be installed in accordance with EN795 Class C, and BS 7883 by Barton Industrial Services Ltd **or equivalent**, and verified by the system manufacturer.
- On completion of the installation, system to be inspected and tested and a test certificate covering a period of 12 months issued. Notice showing date and period of validity of the test certificate to be attached to the system at each access point.
- 2 complete sets of Personal Protective Equipment PPE to be supplied with the system. Each Set to comprise:
  - 1x Full body harness
  - 2 x Energy absorbing lanyard – 2.0m long
  - 1 x Removable Trans fastener – Part number 85085-00
  - All to be supplied in a suitable PPE storage holdall
- Structural anchors: Type recommended by the system manufacturer to suit the structure/fabric into which they will be fixed.

#### 14.2 - ROOF ACCESS LADDER SYSTEM

- Contractor shall include for the provision and installation of **2 No. VECTALADDER® or equivalent** safety cage ladder systems through a specialist sub-contractor to provide safe access to the single and two storey roofs for maintenance purposes.
- The proposed access ladder system shall consist of aluminium with powder coated finish.
- Each Access ladder system shall include a straight run ladder with the following assembly items and equipment included:
  - Front exit ladder with self-closing safety gate
  - Exist landing platform
  - Front exit / ladder connection kit
  - Cage crinoline
  - 600mm width ladder
  - Mounting brackets / kits
  - Ladder connecting kits as required
  - Complete ladder security door kit (delivered pre-assembled, fixed on ladder with hooks or hinges)
  - Ladder assembly by bolt kits (*provided*)
  - Assembly of crinolines by fixing clips (*provided*)
  - screw/bolts stainless (*provided*)
- Refer to the Safety Cage Ladder product data sheet attached in complete package for full details of the proposed **VECTALADDER® or equivalent** safety cage ladder systems.

#### 14.3 - ROOF ACCESS LADDER ACCESS POINTS

- Contractor shall provide **7 No. secure ladder access locations** in the locations indicated on architects drawings for maintenance and cleaning of the proposed roof system, rooflights & clerestory glazing.
- Proposed Ladder Access points shall consist of **2 No. Galvanised Ladder eyes with mechanical fixing into external wall and 2 No. tensioning straps for each location**.
- The proposed fixing eyes shall consist of a treaded anchor chemically set into the external wall together with a treaded eye hook which can be removed to prevent a projecting hazard.

- The two Ladder eyes shall be fixed 1m above the ground level and 2m apart, Refer to proposed Skyway or equivalent system attached in the information folder of the complete tender package.

## 15. PROPOSED CLERESTOREY GLAZING UPGRADE

### 15.1 - PROPOSED CLERESTOREY GLAZING (U-Value 1.2 W/m<sup>2</sup>K)

- Proposed Windows shall be provided in accordance with "MCLA Specification of Windows and Doors – Specification for new windows / doors in Educational facilities" in conjunction with additional guidance below. To be read in conjunction with Architects Window schedules, Floor plans and Elevation drawings.
- Style and break-ups to be signed off by Architect prior to order.
- Proposed windows shall consist of Triple glazed polyester powder coated, commercial grade, thermally broken aluminium windows and doors specified exceeding **D.O.E TGD 021-1. U-value to exceed the performance of 1.2 W/m<sup>2</sup>K**
- Contractor shall include for the supply and fitting of all units and is responsible for accurately measuring structural openings prior to ordering.
- All windows to be foam filled to perimeter with vertical DPC joint and mastic sealed externally upon completion of external reveals. Internal reveals to be flexible caulk filled upon completion of internal plaster reveal.
- Windows must have a design life span of 40 years.
- All windows to be polyester powder-coated aluminium systems. Extruded aluminium profiles shall be fabricated from designated treated alloy 6060 or 6063 in tempers T4, T5 or T6 conforming to bs EN 755-9:2001. The aluminium profiles used in the construction of the frames excluding glazing beads, nibs, interlocks and similar features shall be, at minimum tolerance, not less than 1.2 mm thick.
- All windows are to be Triple glazed and thermally broken. Windows shall be glazed in accordance with the recommendations given in BS 6262.
- Colour of window system to be confirmed.
- External windows to be thermally broken polyester powder-coated aluminium window system with a thermal performance to comply with building regulations. Glazing type and thickness shall be selected, using the recommendations given in BS 6262-4:2018, to withstand the design wind pressure calculated in accordance with BS 6375-1:2015 or BS EN 1991-1-4:2005 (+A1:2010). The type and quality of glass shall conform to bs 952-1: 1995.
- All safety glazing to be toughened and laminated glass.
- Powder coating to conform to BS EN 12206-1:2021: 'paints and varnishes - coating of aluminium and aluminium alloys for architectural purposes'
- Weather tightness to BS 6375:2015 part 1. Weather strips and gaskets to bs 4255 part 1.
- **All external windows to be submitted to architect as shop drawings with sample provided for written approval of architect prior to manufacture.**
- The completed window shall conform to the performance requirements for operation and strength specified in BS 6375-2.

### 15.2 - PROPOSED CLERESTOREY MANUAL WINDERS

- For windows that are intended to be openable, the opening sashes however designed shall move freely and smoothly without hindrance throughout their intended range of movement.
- The range shall be restricted to an opening for child safety and to ensure adequate free openable area.

- **All High level opening sections** to be fitted with low level manual winders for opening allowing windows to open 320mm, supplied by window contractor.
- Where opening window that are considered to be unreachable, they shall be fitted with manual winding window gearing.
- Each set of windows shall be controlled by 1 no. Operator; windows shall be opened using 380mm chain openers with conduit, winder cables and saddle fixings to wall.
- All components shall be finished in a selected polyester powder coated paint finish.
- Maintenance manual: Incorporate details within the Building Manual

### 15.3 – CLERESTOREY WINDOW COLUMNS

- Existing concrete columns shall be wrapped with new powder coated aluminium flashing / cladding to match in conjunction with new window system and raised cill.
- Contractor shall include for the supply and fitting of all flashing / cladding and is responsible for accurately measuring structural openings prior to ordering.
- Proposed aluminium flashing shall consist of 3mm folded aluminium with continuous DPC layer and any voids filled with Insulation.
- Ral to match proposed window system.
- Joints to be butt jointed with 2mm aluminium backing sleeves and Silicone sealed.
- All windows shall be finished with Silicone based sealant to External window and adjoining flashing.
- Powder coating to conform to BS EN 12206-1:2021: 'paints and varnishes - coating of aluminium and aluminium alloys for architectural purposes'

### 15.4 – WINDOW SEALANTS

- Window sealants shall be provided to all new Windows consisting of moisture curing neutral low modulus silicone or similar In accordance with BS 6213:2000+A1:2010. Classification and requirements: To BS EN ISO 11600.
- Reaction to contact products and finishes: Stable and compatible
- Colour: To be chosen by Architect from full available colour range
- Finish triangular fillets with a flat or slightly convex profile.
- Pre-sealing checks:
  - Joint dimensions: Within limits specified for the sealant.
  - Substrate quality: Surfaces regular, undamaged and stable.
  - Joints not fit to receive sealant: report to architect
- Preparation of Joints:
  - Surfaces to which sealant must adhere:
  - Remove temporary coatings, tapes, loosely adhering material, dust, oil, grease, surface water and contaminants that may affect bond.
  - Clean using materials and methods recommended by sealant manufacturer.
  - Vulnerable surfaces adjacent to joints: Mask to prevent staining or smearing with primer or sealant.
  - Backing strip and/ or bond breaker installation: Insert into joint to correct depth, without stretching or twisting, leaving no gaps.
  - Protection: Keep joints clean and protect from damage until sealant is applied.
- Applying Sealants:
  - Substrate: Dry (unless recommended otherwise) and unaffected by frost, ice or snow.

- Environmental conditions: Do not dry or raise temperature of joints by heating.
- Sealant application: Fill joints completely and neatly, ensuring firm adhesion to substrates.
- Sealant profiles:
- Butt and lap joints: Slightly concave.
- Fillet joints: Flat or slightly convex.
- Protection: Protect finished joints from contamination or damage until sealant has cured.

## 15.5 - SUB CONSTRUCTION / RAISED CILL

### 15.5.1 - PROPOSED SUB-CONSTRUCTION

- Following the removal of the existing clerestory glazing and all associated flashings, the contractor shall prepare the existing structural opening for a new raised cill upstand in conjunction with the proposed new warm roof system and new clerestory glazing.
- To be read in conjunction with Architects detail.

### 15.5.2 - STRUCTURE

- Timber studs: 150 x 44 mm treated, kiln-dried, strength-graded softwood, minimum C16, complying with IS 127 and I.S. EN 14081-1:2016+A1:2019.
- Studs at centres 400 c/c, with noggings and head/bottom rails as required to suit structural and lining support requirements.
- All structural timber:
- Preservative treated suitable for use class as required.
- Stored, handled and installed to prevent distortion and moisture damage.

### 15.5.3 - STEEL SUPPORT POSTS

- Contractor shall install 100x100x5mm SHS with base plate shall be mechanically bolted to existing roof slab to stabilize proposed new parapet upstand.
- Steel support posts shall be installed at max 4800mm centres.

### 15.5.4 - SHEATHING BOARD

- Sheathing board: 18 mm Medite SmartPly Max or equivalent OSB/3 to EN 300, suitable for loadbearing use in humid conditions.
- Boards to be:
- FSC certified and CE marked.
- Fixed to timber studs in accordance with manufacturer's recommendations and structural engineer's details, with staggered joints and tight butt joints.
- Joints supported to all edges; damaged or wet boards to be rejected.

### 15.5.5 - INSULATION

#### **Between Studs**

- 150 mm PIR insulation to **UNILIN Thin-R XT/TF** or equivalent , manufactured to **EN 13165**.
- Rigid PIR core with low emissivity foil facings with Agrément declared  $\lambda = 0.022 \text{ W/m}\cdot\text{K}$ .
- Boards tightly fitted between studs with no gaps; all voids > 2 mm filled with compatible insulation.
- Install strictly in accordance with UNILIN **or equivalent** manufacturer's instructions.

#### 15.5.6 - INTERNAL THERMAL LINING

- 50 mm PIR insulation to **UNILIN Thin-R XT/TF or equivalent**, manufactured to **EN 13165**.
- Rigid PIR core with low emissivity foil facings.
- Agrément declared  $\lambda = 0.022 \text{ W/m}\cdot\text{K}$ .
- Fixed directly to internal face of studs/insulation using suitable mechanical fixings or system rails as per manufacturer's instructions.
- Maintain full continuity of insulation at junctions, corners, intermediate floors and around openings.

#### 15.5.7 - AIRTIGHTNESS MEMBRANE, TAPES & SEALANTS.

- Contractor shall install a **Pro Clima Intello Plus or equivalent** airtightness membrane directly to the inside of the proposed new infill structure together with the associated tapes and sealants to adjacent walls / reveals.
- Airtight vapour control layer (AVCL): Pro Clima Intello Plus **or equivalent** intelligent vapour control membrane.
- Installed to internal face of thermal lining (between insulation and service void) or as detailed, in strict accordance with manufacturer's instructions.
- Provide full system accessories:
  - Proprietary Pro Clima or equivalent tapes, sealants, grommets and adhesives to seal:
  - All horizontal/vertical laps.
  - All perimeter junctions (floors, ceilings, reveals).
  - All penetrations (services, fixings, brackets).
- Ensure:
  - Continuous, uncompromised airtight layer across wall, carried around corners and integrated with adjacent elements as detailed.
  - No unsealed punctures; repair any damage with approved system patches.

#### AIRTIGHTNESS MEMBRANE

- Contractor shall provide and install **Pro Clima Intello Plus or equivalent** reinforced Hydrosafe® high-performance vapour check, suitable for all fibrous insulation materials.



- Provided tape to have the following characteristics:
  - Fleece: Polypropylene
  - Membrane: Polyethylene copolymer
  - Reinforcement: Polypropylene non-woven fabric
  - Colour: White-transparent
  - Surface weight: EN 1849-2 110 g/m<sup>2</sup> ; 0.36 oz/ft<sup>2</sup>
  - Thickness: EN 1849-2 0.4 mm ; 16 mils
  - Water vapour resistance: EN 1931 35 000 factor  $\mu$
  - sd value: EN 1931 14 m

- sd value, humidity variable: EN ISO 12572 0.25 - >25 m
  - g value: 70 MN·s/g
  - g value, humidity variable: 1.25 - >125 MN·s/g
  - Vapour permeance: ASTM E96-A 0.23 perms
  - Vapour permeance, EN ISO 12572 < 0.13 - 13 perms
  - humidity variable:
  - Hydrosafe value (sd): DIN 68800-2 2 m
  - Surface burning characteristics: ASTM E84 Class A (Flame Spread 0)
  - Fire rating: EN 13501-1 E
  - Airtightness: ASTM E2178 ≤ 0.004 cfm/ft²
  - Airtightness: EN 12114 tested
  - Tensile strength MD/CD: EN 13859-1 (A) 340 N/5 cm / 220 N/5 cm;  
39 b/in / 25 lb/in
  - Elongation MD/CD: EN 13859-1 (A) 15% / 15%
  - Nail tear resistance MD/CD: EN 13859-1 (B) 200 N / 200 N; 45 lb/ 45 lb
  - Durability after artificial ageing: ETA-18/1146 passed
  - Temperature resistance: permanent -40 °C to 80 °C; -40 °F to 176 °F
  - Thermal conductivity: 0.04 W/(m·K); 0.3 BTU·in/(h·ft²·°F)
  - CE labelling: ETA-18/1146 yes
- **Areas of application:**  
For use on roofs, walls, ceilings and floors on structures that are open or closed to diffusion on the exterior, e.g. flat/steep roofs and green roofs, after appropriate design calculations have been carried out.
  - **Supply forms:**
    - Art. no. 10092
    - GTIN 4026639011244
    - Length: 50m
    - Width: 1.5m
    - Content: 75 m²
    - Weight: 9 kg
    - Container 20
  - **General conditions**
    - Where possible, INTELLO PLUS **or equivalent** should be installed in such a way that adhesion can be carried out using single-sided adhesive tape on the smooth (printed) side of the sheeting. It should be installed taut and without slack either in parallel with or perpendicular to the supporting structure, e.g. the rafters. In the case of horizontal installation (perpendicular to the supporting structure), the separation distance of the supporting structure is limited to a maximum of 100 cm (3'). After installation, perpendicular battens on the inside at a separation distance of a maximum of 50 cm (1' 8") must be fitted to carry the weight of the insulation material.
    - If regular tensile loads on adhesive tape bonds are to be expected – for example, due to the weight of the insulation material – when using mat or panel-shaped insulation materials, an additional supporting batten should be fitted over the overlap bonding. When attaching the membranes in the case of mat or panel-shaped insulation materials, a maximum separation distance of 10 to 15 cm (4" to 6") applies for the fastening staples, which must be at least 10 mm (3/8") wide by 8 mm (5/16") long. The overlaps between the membrane strips must be approx. 8 to 10 cm (3" to 4").
    - Airtight seals can only be achieved on vapour control membranes that have been laid without folds or creases. Ventilate regularly to prevent excessive humidity (e.g. during the construction phase).

Occasional, intermittent ventilation is not sufficient to remove large quantities of moisture due to construction work from a building; use a dryer if necessary.

- To prevent condensation formation, INTELLO PLUS **or equivalent** should be sealed and taped in an airtight manner immediately after the installation of mat or panel-shaped thermal insulation materials. This particularly applies when working in winter.

- **Additional instructions for blown-in insulation materials**

- INTELLO PLUS **or equivalent** can also be used as a boundary layer for blown-in insulation materials of all types. A reinforcement structure ensures that there is little expansion during the blowing-in process. Installation in parallel with the supporting structure has the advantage that the joint will be on a solid base and is protected by this base.
- The separation distance between the staples used to fasten the membrane strips must be a maximum of 5 to 10 cm (2" to 4"). Staples should be oriented parallel with construction timber so that membranes do not tear at the staples when insulation material is being blown in. If installation is carried out perpendicular to the supporting structure, a supporting batten should be fitted directly over the membrane strip overlap with its airtight bonding in order to avoid tensile loading on the adhesive bond.
- When working in cold outdoor climates, the blown-in insulation material should be inserted immediately after installation of INTELLO PLUS **or equivalent**. This will protect the membrane against condensation formation.

#### AIRTIGHTNESS MEMBRANE TAPE

- Contractor to allow for **Pro Clima TESCON VANA or equivalent** all-round adhesive tape for interior and exterior use.



- Provided tape to have the following characteristics:
  - Backing: Special PP fleece
  - Adhesive: Water-resistant SOLID adhesive
  - Release film: Silicone-coated paper
  - Colour: Dark Blue
  - Outdoor exposure: 6 months
  - Airtightness: 1ft, MO-01/1:2007-01, Abs.5 up to 1000 PA, passed
  - Bonding requirement, DIN 4108-11
  - non-aged/ aged
  - Can be plastered over: yes
  - Application temperature: above -10 °C; 14 °F
  - Temperature resistance: permanent -40°C to 90°C;
  - -40°F to 194°F
  - Storage: cool and dry
- **Areas of application:**
  - Interior: Airtight taping of vapour-check and airtight membranes and of airtight wood-based panels.

- All taped joints, indoor and outdoor, can be implemented between similar components or else with adjacent structural elements with a smooth, non-mineral surface (e.g. pipe penetrations, roof windows)
- **Split of the release film:**
  - Tape width: 150mm
  - Split (Approx.): 75|75mm
- **Substrates**
  - Clean sub-surfaces before applying tape. Adhesion is not possible on frozen surfaces. There must be no water-repellent substances (e.g. grease or silicone) on surfaces to be bonded. Sub-surfaces must be sufficiently dry and stable.
  - Permanent adhesion is achieved on all pro clima interior and exterior membranes, on other vapour-check and airtight membranes
  - Adhesion and taped connections are possible with planed and painted wood, hard plastics and metal (e.g. pipes, windows etc.), rigid foam insulation materials that can be plastered over, and hard wood-based panels (chipboard, OSB, plywood, MDF and wood-fibre underlay panels). Pretreatment with TESCON PRIMER **or equivalent** is required in the case of adhesion to wood-fibre underlay panels or on smooth, mineral sub surfaces. Concrete or plaster sub Surfaces must not be sandy or crumbling.
  - The best results in terms of reliability are achieved on high-quality subsurface. It is your responsibility to check the suitability of the subsurface; adhesion tests are recommended in certain cases. Pretreatment with TESCON PRIMER **or equivalent** is recommended in the case of subsurfaces that have insufficient stability.
- **General conditions**
  - Taped joints must not be subjected to tensile forces. Once membranes have been taped, the weight of the insulation material must be supported by laths. Taped joints should be supported by additional laths, if necessary. Press firmly to secure the adhesive tapes in place. Ensure that there is sufficient resistance pressure.
  - Windproof, airtight or rainproof bonding can only be achieved on vapour-check or underlay/facade membranes that have been installed without folds or creases. Ventilate continuously and systematically to prevent build-up of excessive humidity; use a dryer if necessary. When plastering, please observe the recommendations of the plaster manufacturer for non-absorbent sub surfaces. A bonding course may be necessary.

#### AIRTIGHT BONDING

- Contractor shall provide and install **Pro Clima ORCON F or equivalent** All-round joint adhesive for interior and exterior use.



- Provided tape to have the following characteristics:
  - Component: Dispersion based on acrylic acid copolymers and ethanol.  
Free from plasticisers, halogens
  - Cartridge: PCR (recycled)
  - Colour: green
  - Properties: Very tensile
  - Bonding requirement, DIN 4108-11, passed
  - non-aged/ aged
  - Application temperature: -10 °C to 50 °C; 14 °F to 122 °F
  - Temperature resistance: Permanent -40 °C to 80 °C, -40 °F to 176 °F
  - Storage: Up to -20 °C; -4 °F, cool and dry
- **Coverage guide:**
  - Cartridge
  - Content: 310 ml
  - Bead Width: 5 mm
  - Coverage: ~15 m
  - Foil tube
  - Content: 600 ml
  - Bead Width: 5 mm
  - Coverage: ~30 m
- **Areas of application:**
  - Creation of airtight seals between adjacent surfaces and vapour-checking and airtight membranes of all kinds, including all pro clima **or equivalent** vapour checks and airtightness membranes (e.g. pro clima INTELLO **or equivalent**, INTELLO X **or equivalent**, DB+ **or equivalent**, DASATOP **or equivalent** and DA **or equivalent**).
  - Creation of windtight seals between adjacent surfaces and roofing underlay membranes of all kinds (PP, PET). Sealed joints between adjacent surfaces and the pro clima SOLITEX MENTO **or equivalent** series, SOLITEX PLUS **or equivalent** or SOLITEX UM **or equivalent** connect, for example, meet the requirements specified by the German ZVDH product data sheets.
  - Windtight adhesion between adjacent surfaces and breather membranes (e.g. pro clima SOLITEX FRONTA series).
  - Bonding overlaps and joints for trickle protection membranes.
- **Substrates**
  - Clean subsurface before applying adhesive. Mineral surfaces (plaster or concrete) may be slightly moist. Adhesion is not possible on frozen surfaces. There must be no water-repellent substances (e.g. grease or silicone) on surfaces to be sealed. Subsurface must have sufficient stability – if necessary, a mechanical support (pressure lath) must be used (e.g. on crumbling subsurface).
  - Permanent adhesion is achieved on all pro clima interior and exterior membranes, on other vapour-check and airtight membranes (e.g. those made of PE, PA, PP and aluminium) and on other underlay and breather membranes (e.g. those made of PP or PET). Seals can be created on mineral subsurface (e.g. plaster or concrete), roughly sawn or planed wood, and hard wood-based panels (chipboard, OSB, plywood, MDF panels).
  - The best results in terms of structural reliability are achieved on high-quality subsurfaces. It is your responsibility to check the suitability of the subsurface; adhesion tests are recommended in certain cases.
- **General conditions**
  - The adhesive joints created must not be subjected to tensile forces.

- The product achieves its final level of strength only when it has dried. This should be taken into account if airtightness measurements are to be carried out or if blown-in insulation material is to be installed directly after application of this adhesive. It may be advisable to implement protective measures such as mechanical reinforcements in the case of sub-surfaces that have insufficient stability.
- Ventilate continuously and systematically to prevent build-up of excessive humidity; use a dryer if necessary.

#### 15.5.8 – SERVICE VOID & INTERNAL LINING

- Fix 50 x 50 mm timber battens vertically at max. 400 mm centres over the AVCL to form a service void between airtightness membrane and internal lining.
- Battens fixed so as not to compromise the airtightness membrane (use approved fixing method and sealed penetrations where required).

#### INTERNAL LINING

**Proposed new lining shall be installed from the underside of existing concrete ring beam up to the new clerestory cill level.**

The proposed lining shall consist of **12.5 mm plasterboard with skim coat finish** unless noted otherwise.

- Fix boards to battens in accordance with manufacturer's recommendations.
- Joints staggered; scrim taped; full skim to smooth finish suitable for paint.
- Screw fixings for boarding: 25mm Gyproc **or equivalent** Jack-Point Screws
- All board joints installed staggered in accordance with Gyproc's **or equivalent** current installation recommendations.
- Vertical Joints in room side face layer boards treated in accordance with Gyproc **or equivalent** Paper Joint Tape method.
- Horizontal joints in room side face layer boards to be backed by Gypframe GFS1 **or equivalent** Fixing Strap and treated in accordance with Gyproc **or equivalent** Paper Joint Tape method.
- Gyproc **or equivalent** Jack-Point screws installed to room side boards at 300mm centres (200mm at external corners)

#### 15.5.9 - INTERNAL PLASTER FINISH

- Gypsum plaster shall comply with BS EN 13914-2:2016 - Design, preparation and application of external rendering and internal plastering - Internal plastering.
- All plastering products shall be used in strict accordance with the manufacturer's instructions. All work to be finished true and leave all arises straight, plumb & level and all internal angles clean & true.
- No Carlite **or equivalent** or other hydroscopic plaster must be allowed to come into contact with external walls. This is particularly important in the case of Carlite **or equivalent** Finish on expanded polystyrene.
- Plaster stops, galvanised, back - back to be provided at all junction of dissimilar material e.g. concrete and blockwork junctions to prevent cracking in the plaster. Finished surface of plaster to have smooth flush junction in the same plane off the wall.

• **Internal Plaster Beads, Accessories etc.:**

- 'Expamet' or equivalent galvanised plaster stops and angle beads etc. to be used at all extremities to internal plasterwork. **Expanded metal strips to be used when rendering across all joints / change in material etc.** and when making good against existing materials.
- Corner Plaster Stop: Expamet' or equivalent galvanised plaster corner beads to be included throughout.

**15.6 - PROPOSED CILL**

- Proposed Window cills shall be constructed in accordance with Architect Detail in conjunction with the specification below and associated clauses.
- Proposed aluminium integrated cill shall consist of 3mm folded aluminium with continuous DPC layer below and void filled with Insulation.
- Polyester Powder coated cill, with stop ends welded prior to powder coating.
- Ral TBC by Architect
- Joints to be butt jointed with 2mm aluminium backing sleeves and Silicone sealed.
- Jambs to windows to have upstands 50mm Min high
- All window cills shall be finished with Silicone based sealant to External window and adjoining liner, colour TBC by architect prior to commencement.

**15.7 – AIR-TIGHNESS TAPES**

- Contractor shall install Pro Clima CONTEGA SOLIDO SL **or equivalent** airtight sealing to window frames and also sealing membranes at the junctions together with the associated adhesives prior to the application of the final linings as follows:
  - Pro Clima CONTEGA SOLIDO SL **or equivalent** window sealing tape
  - Pro Clima TESCON SPRIMER **or equivalent** airtight tape surface primer

**15.7.1 - INTERNAL MASTING TAPE**

- Contractor shall provide and install **Pro Clima Contega Solido SL or equivalent** full-surface adhesive plaster and window / door sealing tape for interior use.



- Provided tape to have the following characteristics:
  - Backing: PP backing fleece, PP copolymer special membrane
  - Adhesive: Modified water-resistant SOLID adhesive
  - Release film: Single or double split silicone-coated PE sheet
  - Colour: White
  - Sd value: EN 1931, 2.8m
  - G value: 14 MN·s/g
  - Vapour permeance: ASTM E 96, 1.17 US perms
  - Outdoor exposure: 3 months
  - Airtightness: ift, MO-01/1:2007-01, Abs.5 up to 1000 PA,
  - Bonding requirement, DIN 4108-11: passed non-aged/ aged

- Can be plastered over: yes
- Application temperature: above -10 °C; 14 °F
- Temperature resistance: permanent -40°C to 90°C;
- -40°F to 194°F
- Storage: cool and dry
- **Areas of application:**
- For interior airtight and vapour-checking joints between windows, doors or airtightness layers and adjacent building components made of wood or mineral subsurface such as concrete and masonry, with full-surface adhesion. The modified water-resistant SOLID adhesive ensures quick and permanent joints with the subsurface. The stuck joint is immediately airtight and can be subjected to loading. The fleece can simply be plastered over in accordance with the installation instructions.
- **Split of the release film:**
- Tape width: 100mm
- Split (Approx.): 20|40|40mm
- **Substrates**
- Clean subsurface before sticking. Uneven mineral subsurface may need to be levelled with a smooth finish. Adhesion to frozen surfaces is not possible. There must be no water-repellent substances (e.g. grease or silicone) on materials to be bonded. The width of the adhesive tape that is to be plastered over should generally not exceed 60 mm (2 3/8") or 50% of the soffit area. Detailed recommendations can be obtained from the relevant plaster producer. Sub-surfaces must be sufficiently dry and stable.
- Permanent adhesion is achieved on all pro Clima **or equivalent** interior membranes and on other vapour-check and airtight membranes (e.g. those made of PE, PA, PP and aluminium).
- Adhesion can be carried out on planed and painted wood, hard plastics, hard wood-based panels (chipboard, OSB and plywood panels), metal (e.g. pipes, windows etc.), rigid foam insulation materials that can be plastered over, and on mineral sub surfaces such as concrete and masonry.
- The best results in terms of structural stability are achieved on high-quality sub surfaces. It is your responsibility to check the suitability of the subsurface; adhesion tests are recommended in certain cases. Pre-treatment with TESCON PRIMER **or equivalent** is recommended in the case of sub surfaces with insufficient stability.
- **General conditions**
- The bonds should not be subjected to tensile strain. Press the adhesive tapes firmly to secure them, taking care to ensure that there is sufficient resistance pressure behind them. Airtight seals can only be achieved if the sealing tape is installed free of folds and breaks. Ventilate regularly and systematically to prevent build-up of excessive humidity. Use a dryer if necessary.
- When plastering, please observe the recommendations of the plaster manufacturer for non-absorbent subsurface. A bonding course may be necessary.

#### 15.7.2 - AIRTIGHT TAPE SURFACE PRIMER

- To ensure airtight tapes have a robust and permanent bond on almost any surface.



- Provided surface primer shall have the following characteristic:
  - Application temperature (range): -5 °C to 40 °C
  - Coverage (linear metres per can/tube): 38 m
  - Primer for use on Concrete beams/pillars, Cork panels, Plaster, Plasterboard, Precast concrete, Smooth cement, Stone, Wood.
  - Size: 750 ml
  - Temperature Resistance: -25 °C to 90 °C
  - Warranty: 10 years (when correctly installed with Pro Clima **or equivalent** system products only), 6 years (when correctly installed with non-Pro Clima **or equivalent** products)
  - Materials: Synthetic Rubber
  - Storage requirements: Cool and dry.
- **Areas of application:**  
Pro Clima TESCON SPRIMER **or equivalent** airtight tape surface primer can be used on Brick, block, concrete, plaster, smooth timber and wood fibre insulation boards.
- **Installation**
  - Prepare the surface by brushing off or wiping down if necessary, this will ensure any debris or contaminants present will not affect the performance of Tescon Sprimer **or equivalent**.
  - Shake the can vigorously for 20 seconds then spray from a distance of 20cm ensuring an even coat is applied.
  - The direction of the spray nozzle can be adjusted to spray horizontally or vertically for easier of application in difficult areas.
  - Pro Clima **or equivalent** tapes can be applied immediately to the primed surface without waiting for the Sprimer to cure.
  - Frozen or water-soaked surfaces are unsuitable. Ensure the surface is dry and unfrozen before applying the primer. Once fully dry, the primer and tape bond will be at maximum strength. Tescon Sprimer **or equivalent** will become transparent once it is dry.

#### 15.8 – ACOUSTIC / FIRE STOPPING

- FirePro® Flex Seal Coated Strip or equivalent shall be installed to all clerestory window / internal wall junctions to provide acoustic and fire protection between spaces.
- FirePro Flex Seal Coated Strip or equivalent shall be tested as a penetration seal to BS EN 1366-3: 2021 and has been classified for fire resistance periods of up to 120 minutes, subject to the application.
- FirePro Flex Seal Coated Strip or equivalent shall be used as a standalone penetration seal or as part of the CB50 coated batt seal.
  - Tested in accordance with EN 1366-3: 2021 +A1:2024.
  - Classified in accordance with EN 13501-2: 2023.
  - Certified by UL, certification number: UL-EU-01351-EN.
  - Non-combustible stone wool core.
  - Pre coated with flex seal coating.
- **Specification data - Mineral wool fire-stopping**
  - Colour: White
  - Material: Rock mineral wool, Stone wool
  - Third-party certification: Certified by UL, certification number: UL-EU-01351-EN.
  - Type: Rigid.
  - Facing: Ablative-coated, Flex seal coating double sided.

- Fire resistance: EI 120 to BS EN 13501-2. Up to two hours fire resistance.
- Sound insulation rating: 48 (-1; -3) Rw (C; Ctr).
- Tested in a double layered plasterboard internal partition. 300 x 300 mm square framed and lined opening. Single 100 mm FirePro Flex Seal or equivalent set within depth of opening.
- Dimensions: 1200 x 200 x 100 mm.

### 15.9 – WINDOW BOARD / LINERS

#### WINDOW BOARDS

- Contractor shall provide 25mm thick Softwood Window boards to all replacement windows, All primed and painted with square edging.
- Window board dept to reveal for each window installation.
- All window boards shall be fixed directly to the new timber upstand to architects detail.
- All fixings shall be recessed with pre drilled, filled and sanded prior to decoration.
- All window cills shall be finished with Silicone based sealant to External window and adjoining liner, colour TBC by architect prior to commencement.

#### WINDOW LINERS

- Contractor shall provide 18mm moisture resistant painted MDF window liners to all new windows, all primed and painted with square edging.
- Window Liner dept to reveal for each window installation.
- All fixings shall be recessed with pre drilled, filled and sanded prior to decoration.
- All window liners shall be finished with Silicone based sealant to adjoining External window, adjoining window board and perimeter junction with fairfaced blockwork, colour TBC by architect prior to commencement.

### 15.10 – INTERNAL PAINTING

- **Contractor shall provide internal painting and decoration to all areas where proposed works take place including all internal joinery**
- Paint colours to be approved prior to application, Architect to pick colours throughout.
- Any alternative paint brands are to be proposed to Architect and pricing of same is to be outlined as such in Tender Return.
- Prepare all surfaces for decoration including repair, drying, filling, sanding etc. prior to decoration. Best qualities of white & red lead putty, linseed oil, knotting & driers are to be used and only tradesmen shall be engaged for the application of paint. Plasterwork is to be allowed to dry a minimum of three weeks or to be reviewed for the use of de-humidifying plant, before painting and is to be sufficiently dried out to receive paint. All joinery work to be properly and neatly cleaned on surface and all tongues & grooves and all jointing to be primed before assembling. All joinery to be primed prior to fitting. All coats of paints are to be thoroughly dry before subsequent coats are applied and rubbed down with fine waterproof glass paper between coats. One coat of suitable metal primer prior to application of compliant water-based paint system, solvent-based paint system or powder coating system in layers & thicknesses as recommended by manufacturer. Paints to be selected for ferrous & non-ferrous substrates as appropriate.

#### WALL PAINT

- Manufacturer: Fleetwood **or equivalent**
- Product reference: Fleetwood" Popular Colour" Collection **or equivalent**

- Initial / Undercoats: Fleetwood **or equivalent** Primer Sealer Undercoat as recommended by manufacturer,  
1no.Number of coats.
- Finishing coats: Fleetwood" Popular Colour" Collection **or equivalent**, all colours per room to be confirmed, 2no.Number of coats.  
White matt emulsion to ceiling / bulkheads unless specified otherwise.
- Total Number of coats: 3no. top coats.

#### CEILING & BULKHEADS PAINT

- Manufacturer: Fleetwood **or equivalent**
- Product reference: Fleetwood Premium Acrylic Matt Emulsion Brilliant White **or equivalent**
- Initial / Undercoats: Fleetwood **or equivalent** Primer Sealer Undercoat as recommended by manufacturer,  
1no.Number of coats.
- Finishing coats: Fleetwood Premium Acrylic Matt Emulsion Brilliant White **or equivalent**,  
2no.Number of coats.
- Total Number of coats: 3no. top coats.

#### TIMBER & ALL INTERNAL WOODWORK PAINT

- All internal exposed softwood skirtings, architraves, door frames & window boards
- Manufacturer: **Refer to Architects Finish document**
- Surfaces: Uncoated.
- Preparation: All joints, nail/screw heads to be filled, fully sanded and cleaned down.
- Initial / Undercoats: Fleetwood **or equivalent** Water based Satinwood undercoat  
Number of coats: 1 no. coats.
- Finishing coats: Fleetwood **or equivalent** Water based Satinwood.  
Number of coats: 2no. coats.
- Total Number of coats: 3no. top coats.

#### 15.11 – INTERNAL BLINDS

- Blinds shall be provided to all replacement windows within proposed works, All proposed blinds to be provided to the following specification:
- The Contractor is to allow for Uniline **or equivalent** Blackout blind system with full automation and side guide railings to provide full blackout effect

##### 15.11.1 – BLIND MATERIAL

- The blind material shall be light coloured dense basket weave sunscreen material.
- The blinds must perform such that they eliminate glare to the teaching walls and white/black boards, associated data projection screens and white interactive boards, reduce heat transfer to the room and still permit light transmission to the internal space.
- The daylight transmission, solar absorption, openness factor and shading co-efficiency must all be taken into account when selecting the appropriate sun screen shade cloth for the teaching spaces.
- In order to achieve the above requirements and ensure the blinds are fit for purpose as outlined consideration should be given to
  - Light transmission values in the 9% to 12% range
  - Solar absorption in the 17% to 20% range
  - Optimum shading coefficient

- Openness factor in the 3% to 5% range (All blinds on East and South facing Classroom windows to have a 3% openness factor, subject to mock up on site).
- Both blinds to be light in colour and identical in colour.
- NOTE: These are guidance values and should not be taken as absolute selection criteria. Each case must be assessed on its own circumstances.
- A full-size mock-up for a south facing teaching space with interactive white board and data projector operational must be conducted prior to final selection of the blind material.
- Manufacture and installation of the blinds shall comply with the requirements of the Irish standards ISEN 13120 Internal blinds - performance including safety requirements.
- The blind material shall be in compliance with Clause 4: Blinds, TGD-030 and should meet the designation of 'flameproof' when assessed in accordance with BS 3120: 1959. A test certificate as in Appendix C of "Fire safety of furnishings and fittings in places of assembly" should be supplied for each item specified.

#### 15.11.2 – BLIND MOTOR

- Hardwired 4 core electric motor with a minimum of 6 N.M lifting power.
- Motor to be low noise with maximum 40 dB.
- Bracket system to be pressed steel. Plastic brackets will not be accepted.
- Motor to slot into 53mm grooved aluminium tube, internally strengthened with fins to reduce deflection.
- Tube to have external dovetail groove to allow fabric to be mechanically slotted into tube and fixed with 9mm tape. Fabric affixed to tube with double sided tape will be rejected.
- Tube to be capable of spanning up to 4000mm if necessary.
- Motor to have thermal cut out switch to prevent overheating.

#### 15.11.3 – BLIND CONTROL BOX

- The control box is used where multiple motors are to be operated from a single switch.
- The control box should be capable of operating up to 4 motors and switching by a Low Voltage wall switch wired directly to control box with no direct 220V power.
- The control box should have the capabilities of connecting to a digital radio remote control unit.
- The switch should be capable of being daisy chained to multiple boxes to operate more than 4 blinds at once or each switch can be wired to one or more motors within the same box.

### 16. EXTERNAL DOWNPIPES

- All Existing external downpipes shall be removed and disposed, new downpipes shall be installed to the specification below following the installation of the new warm roof system, fascia and soffits.
- **External rainwater goods by Alumasc or equivalent.** Contractor to supply and fit rainwater goods by Alumasc **or equivalent** throughout. Refer to Architect's drawings for proposed location of rainwater downpipes, to be read in conjunction with engineers' drawings for rainwater gullies.
- **Alumasc Aqualine or equivalent – Powder Coated Extruded Aluminium downpipe system** to be included throughout, Refer to Architect's appendix for product information.
- Refer to architect's drawings for roof fall directions and locations of proposed gutters
- Refer to Architect /Engineers Drawings for downpipe and gully trap locations, connected to existing surface water drainage system.
- **Alumasc Aqualine or equivalent Extruded Aluminium Contemporary Rainwater Heads (Hoppers)** shall be installed to all downpipe connections with flat roof outlets
- Refer to architect's drawings for roof fall directions and locations of proposed gutters

- Refer to Architect /Engineers Drawings for downpipe and gully trap locations, connected to existing surface water drainage system.
- **Rainwater Drainage Systems – GENERAL**  
Gravity Rainwater Drainage System.  
Rainwater pipework and accessories as per detail sections below
- **System Performance**  
Design Standard: To BS EN 12056-3:2000, clauses 3-7 and National Annexes Collection and Distribution of Rainwater: Complete, and without leakage or noise nuisance  
Design Parameters: Design rate of rainfall as per BS EN 12056-3:2000, National Annex NB.2 - Category 1

#### 16.1 - ALUMASC AQUALINE OR EQUIVALENT ALUMINIUM DOWNPIPE

- **Alumasc Aqualine or equivalent Alumasc Rainwater Flush joint Circular Pipe for external use:**  
**Specification data - Aluminium rainwater pipes and fittings**
  - Standard: BS 8530: 2010.
  - Third-party product certification: BS 9101: 2017.
  - Form: Extruded.
  - Section: Circular.
  - Size (nominal): 150 mm.
  - Minimum thickness or gauge: 2 mm.
  - Finish and colour
  - Finish: Polyester powder coated to BS EN 12206-1: 2004.
  - Textured.
  - Mill.
  - Colour: TBC
  - Film thickness (minimum): 120-160 Microns. (Marine).
  - Type: Spigot jointed system.
  - Materials: Aluminium, LM6 Marine Grade.
  - Integral accessories
    - Bends.
    - Branches.
    - Sockets.
    - Access pipes.
    - Offsets.
    - Shoes.
    - Pipe clips.
    - Hopper Heads.
  - Fire rating (to BS EN 13501)
  - A2 to BS EN 13501: 2018.

#### 16.2 - ALUMASC AQUALINE OR EQUIVALENT EXECUTION CLAUSES

##### 600 - PREPARATIONS

- Below ground drainage is ready to receive rainwater or that the discharge can be dispersed by approved means to prevent damage or disfigurement of the building fabric.
- Any specified painting of surfaces which will be concealed or inaccessible is completed.

#### 605 - INSTALLATIONS GENERALLY:

- Install pipework/gutters to ensure the complete discharge of rainwater from the building without leaking.
- Obtain all components for each type of pipework/guttering from the same manufacturer unless specified otherwise.
- Provide access fittings and rodding eyes as necessary in convenient locations to permit adequate cleaning and testing of pipework.
- Avoid contact between dissimilar metals and other materials which would result in electrolytic corrosion.
- Do not bend plastics or galvanised steel pipes.
- Adequately protect pipework/gutters from damage and distortion during construction. Fit purpose made temporary caps to prevent ingress of debris. Fit all access covers, cleaning eyes and blanking plates as the work proceeds.
- Where not specified otherwise use plated, sherardised, galvanised or nonferrous fastenings, suitable for the purpose and background, and compatible with the material being fixed.

#### 610 - FIXING AND JOINTING GUTTERS:

- Fix securely at specified centres and at all joints in gutters, with additional brackets near angles and outlets.
- Provide for thermal and building movement when fixing and jointing, and ensure that clearances are not reduced as fixing proceeds.
- Seal as specified to make watertight.
- Spread jointing compound evenly over jointing face of socket.
- For gutters with bolted joints, tighten joints in the gutter sole before any other bolts. Fit suitable washers and spacers to prevent overtightening, unless specified otherwise.
- Tighten fixing to squeeze out some compound.
- Remove surplus, squeezed out compound and neatly clean off.
- Ensure that roofing underlay is dressed into gutter.

#### 615 SETTING OUT EAVES GUTTERS – TO FALLS

- Set out to a true line and even gradient to ensure no ponding or backfall. Position high points of gutters as close as practical to the roof and low points not more than 50mm below the roof.
- Position outlets to align with connections to below ground drainage, unless shown otherwise on drawings.

#### 630 RAINWATER OUTLETS, ENSURE THAT:

- Outlets are securely fixed before connecting pipework.
- Junctions between outlets and pipework can accommodate all movement in the structure and pipework.

#### 435 - FIXING PIPEWORK:

- Fix securely at specified centres plumb and/or true to line.
- Make changes in direction of pipe runs only where shown on drawings unless otherwise approved.
- Fix branches and low gradient sections with uniform and adequate falls to drain efficiently.
- Fix externally socketed pipes/fittings with sockets facing upstream.
- Provide additional supports as necessary to support junctions and changes in direction.

- Fix every length of pipe at or close below the socket collar or coupling.
- Provide a load bearing support for vertical pipes at not less than every storey level. Tighten fixings as the work proceeds so that every storey is self-supporting and undue weight is not imposed on fixings at the base of the pipe.
- Isolate from structure where passing through walls or floors and sleeve pipes as specified in Section P31.
- Provide for thermal and building movement when fixing and jointing, and ensure that clearances are not reduced as fixing proceeds.
- Fix expansion joint pipe sockets rigidly to the building and elsewhere use fixings that allow the pipe to slide

#### 650 - JOINTING PIPEWORK/GUTTERS:

- Joint using materials, fittings and techniques which will make effective and durable connections.
- Joint differing pipework/gutter systems with adaptors recommended by manufacturer(s).
- Cut ends of pipes to be clean and square with burrs and swarf removed. Chamfer pipe ends before inserting into ring seal sockets.
- Ensure that jointing or mating surfaces are clean, and where necessary lubricated, immediately before assembly.
- Form junctions using fittings intended for the purpose ensuring that jointing material does not project into bore of pipes, fittings and appliances.
- Remove surplus flux/solvent/cement/sealant from joints.

#### 675 - COATED PIPEWORK/GUTTERS:

- Make good to coatings after cutting and any other damage or recoat, as recommended by the manufacturer.

#### 685 - IDENTIFICATION OF INTERNAL RAINWATER PIPEWORK:

- To BS 1710 using self-adhesive bands or identification clips located at junctions, at both sides of each slab, bulkhead and wall penetration, and elsewhere as directed.

#### 690 ELECTRICAL CONTINUITY:

- Use clips or suitable standard couplings supplied for the purpose by pipework manufacturer to ensure electrical continuity at all joints in metal pipes with flexible couplings and which are to be earth bonded.

#### 700 ACCESS FOR TESTING AND MAINTENANCE:

- Install pipework and gutters with adequate clearance to permit testing, cleaning and maintenance.
- Position access fittings and rodding eyes so that they are not obstructed by other pipework, framing, etc.

#### COMPLETION CLAUSES

##### 900 TESTING GENERALLY:

- Inform the contractor administrator sufficiently in advance to give him a reasonable opportunity to observe tests.

- Check that all sections of installation are free from obstruction and debris before testing.
- Provide clean water, assistance and apparatus for testing as required.
- Carry out tests as specified. After testing, locate and remedy all defects without delay and retest as instructed.
- Keep a record of all tests and provide a copy of each to the contractor administrator.

#### 905 INTERNAL PIPEWORK TEST

- Temporarily seal open ends of pipework with plugs.
- Connect a 'U' tube water gauge and air pump to the pipework via a plug.
- Pump air into pipework until gauge registers 38mm.
- Allow a period for temperature stabilisation, after which the pressure of 38mm is to be maintained without loss for not less than 3 minutes.

#### 910 GUTTER TEST:

- Block all outlets, fill gutters to overflow level and after 5 minutes closely inspect for leakage.

#### 915 MAINTENANCE INSTRUCTIONS

- At completion, submit printed instructions recommending procedures for maintenance of the rainwater installation including full details of the recommended inspection, cleaning and repair procedures.

#### 920 IMMEDIATELY BEFORE HANDOVER:

- Remove construction rubbish and debris from all roofs and gutters. Where possible, sweep and remove fine dust which may enter rainwater systems. Do not sweep or flush dust or debris into the rainwater system.
- Remove swarf, debris and temporary caps from the entire rainwater installation.
- Ensure that all access covers, rodding eyes, outlet gratings, etc., are secured complete with all fixings.

### 17. LIGHTNING PROTECTION

- Contractor shall provide a lightning protection system in accordance with ISEN 62305:2011 Parts 1 to 4. See lightning specification below for full details.
- Contractor shall engage in a lightning protection specialist to provide the final design, lightning protection systems designers shall have proven competence to IS EN 62305, Protection Against Lightning. This competence is accredited independently by the Association of Technical Lightning and Access Specialists. (ATLAS).
- Lightning protection specialist shall carry out a detailed Risk Management Analysis (RSA) as set out in ISEN 62305 Part 2 to determine the need for Lightning Protection.
- The contractor may use the Direct Strike Lightning Protection **or equivalent** and earthing services, provisional DT design and specification attached in complete tender for reference, please note contractor must obtain their own quotation / price agreement Lightning protection specialist.
- Design stage RSA conducted by Direct Strike Lightning Protection **or equivalent** concludes that a Class IV structural Lightning and Coordinated Surge Protection System (SPD) is required.
- Attendances/Builders to be provided by Main contractor to enable Lightning Specialist Installation
- Site welfare and first aid facilities

- Access to all working areas,
- Excavating and making good 0.6m deep trenches for earth tapes and rods, fixing earth rod inspection houses and making connections to reinforcing.
- Forming holes and making good as required, building in flanges.

### **Structural Lighting protection Specification**

#### **• Air Termination Network**

- 25x3mm bare aluminium tapes secured to flat roof by non-metallic clips (clips to be supplied and installed by roofing contractor).

#### **• Down Conductors**

- 25x3mm PVC aluminium tapes shall be secured to wall by non-metallic clips, no. locations TBC by lightning protection specialist.

#### **• Joints**

- Proprietary aluminium square clamps

#### **• Bonds**

- Aluminium bonds to metallic plant

#### **• Test Points**

- Number of Polymer Inspection chambers shall be designed by lightning protection specialist and provided / installed by main contractor.
- Number of stainless steel bi metallic clamps shall be designed by lightning protection specialist and provided / installed by main contractor.

#### **• Earth Terminations**

- Number of 16mm x 2.4m copper bond earth electrodes, complete with rod to tape clamp and surmounted by a polymer inspection housing shall be designed by lightning protection specialist and provided / installed by main contractor.

## **18. PLANT ROOM ALTERATIONS**

- The 2 no. existing plant rooms on roof 4 and roof 6 shall be altered in conjunction with the installation of the new roof waterproofing system

### **18.1 – ALTERATION OF PLANT ROOM CLADDING**

- Temporarily remove, alter and reinstate the existing profiled metal cladding to the plant room where required to facilitate the formation of the new roof upstand / abutment detail, all in accordance with the Architect's drawings, details and the roof system manufacturer's requirements.
- Works shall include the careful removal of existing profiled metal cladding panels, associated trims, flashings, fixings and base rail components as required, alteration of the cladding height, and reinstallation of the cladding with new profiled base rail, closures, fixings, flashings and sealants to provide a complete weather-tight installation.

#### **18.1.1 – GENERAL**

- The works shall include, but not be limited to:
  - Carefully survey and record the existing cladding arrangement prior to removal.
  - Temporarily remove existing profiled metal cladding panels, trims, flashings, base rail and associated fixings as required to facilitate the new upstand works.
  - Protect and safely store all retained cladding panels and trims for re-use.

- Cut / alter existing profiled metal cladding panels to suit the new finished upstand height and Architect's detail.
- Install new profiled base rail / support rail to the base of the cladding.
- Install new profile fillers, closures, sealants, tapes, flashings and weathering components as required.
- Reinstall the altered cladding panels plumb, true and properly fixed.
- Coordinate with the roofing contractor to ensure the new upstand, waterproofing termination and cladding base detail are fully compatible and weather-tight.
- Make good all disturbed areas and leave the installation complete.

#### 18.1.2 – PRE-COMMENCEMENT

- Before commencing works, the Contractor shall:
  - Inspect the existing cladding and confirm its condition, fixing arrangement, profile type, dimensions and suitability for removal and reinstallation.
  - Notify the Design Team of any damaged, corroded, unsuitable or non-reusable cladding panels, trims or fixings before removal.
  - Confirm the required finished cladding height and relationship with the new upstand, roof waterproofing termination and flashing arrangement.
  - Submit proposed method statement for removal, temporary protection, cutting, alteration, reinstatement and weatherproofing.
  - Ensure temporary weather protection is provided at all times during the works.
- No cutting, alteration or reinstatement shall proceed until the final setting-out has been agreed on site with the Design Team.

#### 18.1.3 – REMOVAL AND STORAGE

- Existing profiled metal cladding shall be removed carefully to avoid distortion, buckling, scratching or damage to the panel finish.
- Panels, trims and reusable components shall be:
  - Numbered / labelled before removal.
  - Removed in sequence to allow accurate reinstatement.
  - Stored flat or properly supported in a clean, dry and protected location.
  - Protected from impact, abrasion, staining and water damage.
  - Kept clear of standing water, wet materials and incompatible metals.
- Damaged panels caused by the Contractor's operations shall be replaced at the Contractor's expense to match the existing cladding profile, colour, finish and coating system.

#### 18.1.4 – ALTERATION OF CLADDING HEIGHT

- Existing profiled metal cladding panels shall be carefully cut / altered to suit the new upstand height shown on the Architect's details.
- Cut edges shall be:
  - Straight, neat and free from burrs, sharp edges and distortion.
  - Treated in accordance with the cladding manufacturer's recommendations.
  - Protected against corrosion where coating damage or exposed metal occurs.
  - Positioned and concealed where possible by the new base rail, trims or flashings.
- Abrasive disc cutting shall not be used where it could damage the cladding coating or cause hot swarf staining. All swarf, filings and debris shall be removed immediately from cladding surfaces.

#### 18.1.5 – NEW PROFILED BASE RAIL

- Provide and install a new profiled base rail to the bottom of the altered cladding, compatible with the existing cladding profile and the new roof upstand detail.
- Base rail shall be:
  - Fixed securely to the existing support structure / secondary steelwork / backing substrate as appropriate.
  - Aligned level and true.
  - Formed to prevent water tracking behind the cladding.
  - Compatible with new flashings, closures and roof waterproofing termination.
  - Finished to match or complement the existing cladding, unless otherwise agreed with the Design Team.
- Include all necessary end caps, profile fillers, closures, support angles, packers, sealants and fixings to provide a complete weather-tight installation.

#### 18.1.6 – FIXINGS, SEALANTS AND CLOSURES

- All new fixings shall be suitable for external use and compatible with the existing cladding system, substrate and exposure conditions.
- Provide:
  - Stainless steel or suitable coated fixings as appropriate.
  - Sealing washers to exposed fixings.
  - Butyl tapes, EPDM washers, compressible profile fillers and sealants as required.
  - Compatible sealants suitable for profiled metal cladding and external exposure.
  - Isolation where dissimilar metals may be in contact.
- Do not reuse damaged, corroded, distorted or worn fixings. Existing fixings may only be reused where confirmed suitable and approved by the Design Team.

#### 18.1.7 – WEATHERING AND COORDINATION WITH ROOF UPSTAND

- The reinstated cladding, new base rail and associated flashings shall be fully coordinated with the new roof upstand and waterproofing system.
- The Contractor shall ensure that:
  - The new upstand height, waterproofing termination and cladding base detail are installed in accordance with the Architect's detail.
  - The base of the cladding does not compromise the roof waterproofing system or warranty.
  - Adequate clearance is maintained between the base of cladding and finished roof surface / waterproofing where required.
  - All junctions are weathered to prevent wind-driven rain, capillary tracking or water ingress.
  - The finished arrangement allows for thermal movement and avoids undue stress on cladding panels, trims or waterproofing.
- Any proposed deviation from the Architect's detail or roofing manufacturer's requirements shall be submitted for approval before installation.

#### 18.1.8 – WORKMANSHIP

- Reinstalled cladding shall be:
  - Fixed plumb, level and true.
  - Free from oil-canning, distortion, dents, scratches or staining.
  - Aligned with existing cladding lines, laps and profiles.

- Properly lapped and sealed.
- Fully supported at edges and fixing points.
- Installed to provide a neat, durable and weather-tight finish.
- Visible cut edges, fixings, trims and flashings shall be neat and consistent with the existing building fabric.

#### 18.1.9 – TEMPORARY WEATHER PROTECTION

- The Contractor shall provide temporary weather protection during the works to prevent water ingress to the plant room, roof build-up, insulation, structure, services and internal finishes. Openings shall not be left exposed overnight or during adverse weather.
- Temporary protection shall be securely fixed, maintained and inspected throughout the works.
- Any water ingress or damage resulting from inadequate temporary protection shall be made good at the Contractor's expense.

#### 18.1.10 – MAKING GOOD

- On completion, the Contractor shall:
  - Remove all debris, redundant fixings, sealant residue and protective materials.
  - Clean down cladding surfaces affected by the works.
  - Make good any damaged coatings, trims, flashings, sealants or adjacent finishes.
  - Replace any damaged cladding components that cannot be satisfactorily reinstated.
  - Leave the completed detail weather-tight, secure and visually acceptable.

#### 18.1.11 – QUALITY / ACCEPTANCE CRITERIA

- Completed works shall be subject to inspection by the Design Team.
- The installation will not be accepted where there is:
  - Damaged, distorted or poorly aligned cladding.
  - Untreated or exposed cut edges.
  - Inadequate fixings or loose panels.
  - Gaps in closures, fillers, sealants or flashings.
  - Water tracking paths behind the cladding.
  - Compromise to the roof waterproofing or upstand detail.
  - Visible staining, hot swarf damage or coating damage.
  - Any evidence of water ingress.
- Final installation shall be complete, weather-tight and in accordance with the Architect's details and relevant manufacturer's recommendations.

#### 18.2 – ALTERATION OF PLANT ROOM UPSTAND

- Existing plant room upstands shall be altered and raised to provide a minimum 200mm upstand above the new waterproofing roof level.
- The existing roof covering / finish shall be stripped back to existing structure to facilitate the alteration and installation of the new upstand and waterproofing detail in conjunction with the proposed new warm roof system.
- To be read in conjunction with Architects detail.

### 18.2.1 – UPSTAND STRUCTURE

- Timber studs: 200 x 44 mm treated, kiln-dried, strength-graded softwood, minimum C16, complying with IS 127 and I.S. EN 14081-1:2016+A1:2019.
- Studs at centres 400 c/c, with noggings and head/bottom rails as required to suit structural and lining support requirements.
- All structural timber:
  - Preservative treated suitable for use class as required.
  - Stored, handled and installed to prevent distortion and moisture damage.

### 18.2.2 – UPSTAND SHEATHING BOARD

- Sheathing board: 18 mm Medite SmartPly Max or equivalent OSB/3 to EN 300, suitable for loadbearing use in humid conditions.
- Boards to be:
  - FSC certified and CE marked.
- Fixed to timber studs in accordance with manufacturer's recommendations and structural engineer's details, with staggered joints and tight butt joints.
- Joints supported to all edges; damaged or wet boards to be rejected.

### 18.2.3 - UPSTAND INSULATION

#### **Between Studs**

- 150 mm PIR insulation to **UNILIN Thin-R XT/TF** or equivalent , manufactured to **EN 13165**.
- Rigid PIR core with low emissivity foil facings.
- Agrément declared  **$\lambda = 0.022 \text{ W/m}\cdot\text{K}$** .
- Boards tightly fitted between studs with no gaps; all voids > 2 mm filled with compatible insulation.
- Install strictly in accordance with UNILIN **or equivalent** manufacturer's instructions.

### 18.2.4 – UPSTAND WATERPROOFING

- Proposed upstand shall include new external upstand insulation installed to outer face of proposed upstand in conjunction with the new waterproofing system, Refer to Clause 7 for full specification of proposed waterproofing system in conjunction with Architects detail.

### 18.3 – PLANT ROOM DOOR

- The 2No. Existing plant room doors shall be removed and disposed, Existing opening and cladding flashing etc shall be altered in accordance with the clause 18.1 & 18.2 above prior to the installation of 2 new plant room doors to suit new openings in conjunction with the new waterproofing system installation.
- New door shall have a minimum threshold upstand of minimum 200mm in conjunction with the upstand alteration and new waterproofing system installation.
- Contractor shall provide and **install 2 No. outward opening solid panel polyester powder coated, commercial grade, thermally broken aluminium door to existing opening. U-value to exceed the performance of  $1.2 \text{ W/m}^2\text{K}$** .
- Proposed Windows shall be provided in accordance with "MCLA Specification of Windows and Doors – Specification for new windows / doors in Educational facilities" in conjunction with additional

guidance below. To be read in conjunction with Architects Window schedules, Floor plans and Elevation drawings.

- Contractor shall include for the supply and fitting of all units and is responsible for accurately measuring structural openings prior to ordering.
- Doors must have a design life span of 40 years.
- Doors to be polyester powder-coated aluminium systems. Extruded aluminium profiles shall be fabricated from designated treated alloy 6060 or 6063 in tempers T4, T5 or T6 conforming to BS EN 755-9:2001. The aluminium profiles used in the construction of the frames excluding glazing beads, nibs, interlocks and similar features shall be, at minimum tolerance, not less than 1.2 mm thick.
- Colour of door system to be confirmed.
- External doors to be thermally broken polyester powder-coated aluminium window system with a thermal performance to comply with building regulations.
- Powder coating to conform to BS EN 12206-1:2021: 'paints and varnishes - coating of aluminium and aluminium alloys for architectural purposes'
- Weather tightness to BS 6375:2015 part 1. Weather strips and gaskets to BS 4255 part 1.
- **All external Doors to be submitted to architect as shop drawings with sample provided for written approval of architect prior to manufacture.**
- The completed doors shall conform to the performance requirements for operation and strength specified in BS 6375-2.

#### 18.4 – UPGRADE OF PLANT ROOM ROOFS

- Upgrade the existing plant room roof in conjunction with **Clause 7 – Proposed Waterproofing System**.
- Works shall include all preparation, removal of existing roof system, adjustment of existing upstands, penetrations, abutments, outlets, flashings and associated interfaces as required to receive the new waterproofing system.
- The Contractor shall fully coordinate the works with the roofing system manufacturer / specialist roofing contractor to ensure the completed roof build-up, falls, drainage, upstands, terminations and flashings are suitable for the proposed waterproofing system and comply with the manufacturer's requirements.

#### 19. INTERNAL DOWNPIPES

##### 19.1 - DOWNPIPE JETTING

##### **Existing Internal Rainwater Downpipes – Cleaning / Jetting**

- **Scope:** Existing internal rainwater downpipes, rainwater outlets, bends, offsets and accessible connections serving the affected roof areas.
- **Timing:** Pressure clean / jet prior to removal, alteration or temporary disconnection of the existing rainwater drainage system.
- **Execution:** Jetting to be carried out by a competent drainage contractor using suitable equipment to remove silt, debris, loose material and obstructions.
- **Protection:** Protect rainwater outlets from debris ingress for the full duration of the works. Prevent insulation, waterproofing materials, dust, slurry, demolition arisings or construction waste entering the drainage system.
- **Debris disposal:** Collect and remove all debris arising from jetting / cleaning. Do not flush debris into the existing surface water drainage system.

- **Inspection:** Confirm free discharge on completion of jetting. Report any blockage, leakage, damage, restriction or defective pipework to the Contract Administrator / Design Team before proceeding.
- **Completion:** Maintain outlet protection until the new roof drainage works are complete, tested and handed over.

#### 19.2 - DOWNPIPE RODDING / INSPECTION EYE

- Provide proprietary rodding / access eyes to **all internal rainwater downpipes** to permit future cleaning, jetting and inspection, including at bases of downpipes.
- Access fittings shall remain accessible on completion via removable panels where required, see clause below.

#### 19.3 – ACCESS HATCHES

- All inspection points shall have a lockable access hatch must be provided for future access / maintenance. All hatches shall consist of:
  - 300mm x 300mm
  - Lockable access panel
  - Includes a finish frame (hatch into fit MDF boxing without skim coat)

#### 19.4 - DOWNPIPE BOXING

- All existing internal downpipes shall be exposed to allow for the connection / alteration of vertical outlets.
- New boxing shall be provided throughout, **Boxing out of downpipes** – Downpipes be boxed out using 15mm moisture resistant MDF with primed and painted finish fixed to 50 x 50 timber battens frames.
- Fitted with cup screws to allow for removal / maintenance, etc. Proposed service boxing to be primed and painted throughout.
- All vertical boxouts shall run from floor to ceiling.
- All service boxouts shall be Painted & Primed, colour TBC by Architect prior to commencement of works on site.
- All adjacent finishes shall be protected and made good to match existing where any damages occur.

### 20. PROPOSED FLOORING UPGRADES

- **NOTE:** Asbestos has been detected below existing floor coverings. The appointed contractor to be aware of asbestos present on site and must engage with asbestos specialist to remove all asbestos material safely. Any such specialist works should be included in the contractor's costs/ charges as part of the tender/ construction works requirements (Refer to Asbestos Safe Report carried out on 16<sup>th</sup> June 2026).
- Existing water damaged Floor finishes shall be removed and disposed, All floor surfaces to affected areas shall be prepared for new floor finish, Refer to Polyflor or equivalent "Preparation of subfloors" documentation prior to commencement of works.
- **Refer to architects drawing for location of below specified floor finishes**, to be read in conjunction with specification below.
- **ARDEX NA or equivalent Liquid Levelling Screed** to be applied to floor surface before laying floor finish.

- **Liquid DPM to be applied to floor surface before laying floor finish.**
- Colours TBC by Architect prior to commencement of works
- PVC sheet flooring Polyflor vinyl **or equivalent**
  - Polyflor, Palettone PUR, **or equivalent**
  - Polyflor, Verona PUR **or equivalent**
- Selected colour by architect; welded joints; floor levelling compound; fixed with adhesive and primer if recommended by manufacturer; all in accordance with the manufacturer's instructions; to concrete base ensuring subfloor is sound, clean and permanently dry with moisture level not greater than 3.5% clean floor using manufacturer's recommended detergent or similar approved and apply two coats of recommended polish to flooring and buff to a matt finish; all in accordance with architects specification.

#### PRODUCT SPECIFICATION

- The flooring shall be Polyflor Palettone PUR **or equivalent**,
- The flooring shall be flexible PVC sheet flooring in 2.0mm thickness.
- It shall be homogeneous and monolayer in construction, and shall be manufactured by calendaring and pressing, to ensure a dense, smooth surface and non-directional design.
- The flooring shall incorporate a specially formulated polyurethane reinforcement, to significantly reduce maintenance costs.
- The flooring shall conform fully with the requirements of EN 649/EN ISO 10581.
- The flooring must have a Use Area Classification of 23/34/43, as defined in EN 685/EN ISO 10874.
- In respect of flame spread, the flooring shall have been fully tested to EN 13501-1 and certified as having Class Bfl-S1.
- The flooring shall have been fully tested to ASTM E648 and certified as having passed with a Class 1 rating, making it suitable for use in institutional, commercial and public buildings. The flooring shall also have been tested to ASTM E662 and have a result of <450.
- With regard to EN 13893 for slip resistance, the flooring shall be classified DS, making it suitable for use in areas which are predominantly dry, but with occasional spillage.
- The product must have been fully tested for abrasion resistance to the Frick Taber test EN 660-2 and be in abrasion group T, as defined in EN 649.
- With regards to EN ISO 10581 the product shall be classified Type I.
- The flooring must possess a valid Agrément certificate when laid in accordance with the instructions of Polyflor **or equivalent**, with coved skirtings and welded joints.
- This product does not accumulate static charges above 2kV and is classified as 'antistatic' when tested to EN 1815. For specialist applications where there is a requirement to dissipate the electrostatic charge, see the Polyflor **or equivalent** ESD product ranges.
- The flooring must be available in 2.0 metre width, to minimise the number of joints.
- In respect of light fastness, the flooring shall have been fully tested to ISO 105-B02 Method 3 and obtain ≥6
- The flooring will achieve BRE Global Environment Generic A+ rating in the Green Guide to specification in major use areas such as education and healthcare.
- Generic EN 15804 Environmental Product Declaration (EPD) available on request.
- The manufacturer should provide a facility to take back and recycle waste vinyl flooring material through the Recofloor **or equivalent** scheme.
- The flooring shall be tested to and pass key independent, international standards for low VOC emissions.
- The manufacturer of the floorcovering must be in possession of a valid quality systems certificate, showing compliance with BS EN ISO 9001.

- The manufacturer of the floorcovering must be in possession of a valid environmental certificate, showing compliance with ISO 14001.
- A moisture test must be carried out, to ensure that the subfloor has dried out to a level consistent with the application of vinyl flooring. The test should be carried out using a hygrometer, in accordance with the instructions in BS 8203. The result should not exceed 75%RH, once equilibrium has been achieved.
- The adhesive used must be approved by Polyflor **or equivalent**, to ensure full product compatibility.
- Products must be fully conditioned to the environment in which they are to be installed, as outlined by Polyflor **or equivalent**.
- Installation must be carried out in accordance with BS 8203 and the instructions of Polyflor **or equivalent**.
- All joints must be welded to produce hygienic, continuous floors.
- Polyflor homogeneous PUR flooring ranges are compatible for use with the most commonly used alco-based hand gels and are suitable for steam cleaning on a periodic basis. For clarification and for information regarding handling and installation, adhesives, maintenance, applications, chemical resistance and product warranty consult Polyflor **or equivalent** Customer Technical Services.

## 21. PROPOSED INTERNAL CEILING UPGRADES

- Refer to Architects drawing No. T102 "Proposed Reflective Ceiling Plan" for details of the proposed ceiling upgrades.
- Contractor shall provide an Armstrong ULTIMA+ **or equivalent** Suspended ceiling Tile system following the removal of the existing system as indicated on Architects ceiling finishes plan.
- New perimeter trim to be provided through, fixed directly to masonry wall.
- Contractor shall provide all required M&E alterations to provide the upgrade of the defective ceiling system.

### 21.1 - CEILING TILES

**Surface finish:** Lightly textured, unperforated, non-directional surface. Factory applied treatment for durability, impact, scratch, soil and humidity resistance. Durable edge treatment.

**Colour:** Global White

**Light Reflectance** = 87%, Measured in accordance with EN ISO 7724-2 & 3.

**Thickness:** 19mm

**Board & Grid Size:** 600 x 1200mm / 600 x 1200mm modules as indicated on architects drawing

**Board Edge:** Tegular Edge

**Fire Rating:** Euro class A2-s1, d0

**Dnfw:** 36 dB in accordance with EN ISO 10848-2 & EN ISO 717-1

**Rw:** 18 dB in accordance with EN ISO 140-3 & EN ISO 717-1

**aW :** 0.70(H) in accordance with EN ISO 354 & EN ISO 11654

### 21.2 - EXPOSED GRID SYSTEM

Prelude 24 XL<sup>2</sup> / TLS **or equivalent** 24mm Exposed grid system

**Colour:** all products in Global White / RAL 9010

**Material:** galvanised steel

**Surface finish:** baked polyester paint

**Grid Size:** 600 x 1200mm / 600 x 1200mm modules as indicated on architects drawing

**Fire Reaction:** Euro class A1 EN 13501-1

**Suspension hangers:** provided at 1200 x 1200mm centres

**Setting out:** Centred in each room

**Perimeter Trims:** galvanised steel 'L' perimeter trim fixings (1924 HD), baked polyester paint finish

**Main runner:** Prelude 24 Peakform **or equivalent**

**Material:** Steel

**Dimension:** 24mm x 43mm x 3600mm

**Surface finish:** Baked polyester paint

**Colour:** Global white (WG)

**Cross tee unslotted:** Prelude 24 XL<sup>2</sup> / TLS Peakform **or equivalent**

**Dimension:** 24mm x 38mm x 600mm

**Material:** Steel

**Surface finish:** Baked polyester paint

**Colour:** Global white (WG)

### 21.3 – BULKHEADS

- All new bulkheads shall consist of 15mm moisture resistant MDF with primed and painted finish fixed to 50 x 50 timber battens frames.
- All fixings shall be recessed with pre drilled, filled and sanded prior to decoration.
- Colour TBC by Architect prior to commencement of works on site.
- All adjacent finishes shall be protected and made good to match existing where any damages occur.

#### BULKHEADS PAINT

- Manufacturer: Fleetwood **or equivalent**
- Product reference: Fleetwood Premium Acrylic Matt Emulsion Brilliant White **or equivalent**
- Initial / Undercoats: Fleetwood **or equivalent** Primer Sealer Undercoat as recommended by manufacturer,  
1no.Number of coats.
- Finishing coats: Fleetwood Premium Acrylic Matt Emulsion Brilliant White **or equivalent**,  
2no.Number of coats.
- Total Number of coats: 3no. top coats.

### 22. M&E SERVICE UPGRADES / ALTERATIONS

- Refer to M&E Engineers complete package for full details of all mechanical and electrical alterations & upgrades including:

#### 22.1 – LIGHTING UPGRADE

- Internal lighting shall be removed, disposed and new lighting LED installed in accordance with the M&E package, Refer to M&E engineers specification for the removal, recommissioning & certification / testing requirements.
- To be read in conjunction with architects drawings for extent of internal ceilings to be removed, disposed and new ceilings installed

## 22.2 – LIFE SAFETY SYSTEMS

### TEMPORARY DECOMMISSIONING / ALTERATION – FIRE ALARM & EMERGENCY LIGHTING

- Existing fire alarm and detection system and Emergency lighting shall be retained, Contractor shall provide the required alterations to the existing systems to facilitate the upgrade of the ceilings throughout.

#### **Live School Operation**

- Maintain Fire Detection & Alarm and emergency lighting active throughout the school day/term.
- Plan isolations, shutdowns and noisy works **out of hours/term**, with written approval and 7-day notice to the Employer's Representative (ER)/Architect.

#### **Isolation & Protection**

- Identify and isolate only the **minimum** circuits/zones affected. Provide temporary protection to any exposed wiring/equipment.
- Carefully remove/reinstall ceiling fittings and detection heads **only where required**; store removed items dry and secure; reinstall on completion.

#### **Temporary Disconnection / Reinstatement**

- Provide all temporary disconnections, extensions, terminations, reinstatement, reconnection and recommissioning required
- Make good finishes and any damage to electrical systems, fittings and FFE at Contractor's cost.

## 22.3 – ELECTRIC ROOFLIGHT & CLERESTOREY ACTUATORS

- Provide manufacturer-certified electrically operated rooflight units and window actuators together with associated control equipment to all new installations.
- Provide dedicated power supplies and control cabling as required by the rooflight and window actuator manufacturers
- Provide local **manual override** (open/close) points to each opening section.

## 22.4 – EXISTING SATELLITE DISH

- Existing satellite dish and associated ballast system shall be carefully relocated for the duration of works to facilitate the installation of the new warm roof system.
- Refer to M&E engineers specification for the removal, recommissioning & certification / testing requirements.

## 22.5 – EXISTING PROJECTORS

- The Appointed contractor shall provide for attendances on careful removal, safe storage and reinstallation upon completion of existing projectors to facilitate the ceiling upgrade works.

## 22.6 – ELECTRICAL CABLING / SERVICES

- Existing external electrical cabling shall be identified by the contractor prior to commencement of proposed works and identified in the pre commencement RAMS.
- External electrical cabling in the area of works shall be protected for the duration of works.
- M&E Consultant to liaise with the contractor on the intended design and safe procurement of the works ensuring minimal to well-coordinated and planned shutdown of services if and when required.
- The contractor is to check that all services are disconnected and safe prior to commencing works.

- Works to be carried out only by suitably qualified personnel and in strict accordance with relevant Electrical regulations and codes of practice.
- Testing of existing electrical installations and isolation of circuits to be carried out prior to commencement, by suitably qualified personnel.
- Re-connection and testing of all to be carried out on completion, by suitably qualified personnel.

## 22.7 – MECHANICAL ROOF VENTS

- Refer to M&E engineers specification for the removal, recommissioning & certification / testing requirements.
- **Roof 1:** 1 No. Existing Mechanical Vent shall be removed, Disposed and new mechanical vent installed to M&E engineers specification on new upstand with new waterproofing detail provided upon completion.
- **Roof 2:** 1 No. Existing science lab flue shall be carefully removed, stored and reinstated upon completion together with the provision of a new upstand, flashings and sundries as indicated on architects' drawings. Contractor shall provide new penetration / vent flue to suit existing system in conjunction with M&E Engineers package.
- **Roof 4:** 1 No. Existing Mechanical Vent shall be temporary removed, stored and reinstalled on new upstand with new waterproofing detail provided upon completion.
- **Roof 6:** 1 No. Existing Mechanical Vent shall be temporary removed, stored and reinstalled on new upstand with new waterproofing detail provided upon completion.

## 22.8 - CERTIFICATION & RECORDS

- On completion, provide:
  - Electrical minor works/installation certificates for altered circuits.
  - Fire alarm **modification/commissioning certificates** covering any new/relocated interfaces, sounder circuits, or cause-and-effect updates.
  - Updated **as-installed drawings**, device schedules, cable IDs, and cause-and-effect matrix.
  - O&M updates and user instructions for rooflight controls.

## 22.9 - TESTING & COMMISSIONING – GENERAL

- Test each altered/new circuit and device and **commission the modified parts as a unified system**.
- Give the ER/Architect **7 days' written notice** of testing/commissioning.
- Provide calibrated test instruments and keep records on site.

## 22.10 - TESTING & COMMISSIONING –ROOFLIGHTS / ACTUATORS (FUNCTIONAL)

- Function-test **every rooflight / actuator** installed:
  - **Open/close** from local override and from the **intended fire signal** (where interfaced).
  - Verify **opening time** meets manufacturer's stated performance; record measured times.
  - Confirm **end-of-travel** limits, obstruction protection, and that aerodynamic/geometric free area matches the product data and drawings.
  - Verify any **daily-vent** mode (if provided) does not conflict with fire mode.

- Record results on the commissioning sheets and include in O&M.

#### 22.11 - HANDOVER

- Reinstall all temporarily removed detectors/ceilings; remove temporary wiring and labels; leave systems operational.
- Brief the School on rooflight / actuator controls, daily vent use, fault reporting and maintenance intervals.
- Submit all certificates, records and updated drawings as a condition of Practical Completion.

### 23. CIVIL INSTALLATIONS / ALTERATIONS

- Refer to Architects branch drainage layout.
- Proposed Surface water drainage shall be 150mm Wavspec Smoothwall **or equivalent** SN8 uPVC laid to not less than 1:30 falls.

#### CCTV SURVEY OF EXISTING SURFACE-WATER DRAINAGE

- Prior to commencement of any surface-water drainage works, the Contractor shall arrange for a specialist drainage contractor to undertake a comprehensive CCTV survey of the existing below-ground surface-water drainage system serving the areas affected by the Works.
- The survey shall confirm the location, route, pipe diameter, material, invert levels, direction of flow, connectivity, capacity and condition of the existing drainage system, including all relevant manholes, inspection chambers, gullies, connections and outfalls.
- The Contractor shall clean and jet the existing drainage pipework as necessary to permit a clear and complete survey. The CCTV survey shall identify and record any defects, obstructions, root ingress, deformation, displaced joints, fractures, silt accumulation, cross-connections or other conditions that may affect the proposed drainage works.
- The Contractor shall submit the following to the Design Team for review prior to commencing any new drainage connections or associated surface-water drainage works:
  - CCTV survey footage in digital format;
  - A written survey report and condition assessment;
  - Marked-up drainage drawings showing the verified routes, pipe sizes, invert levels, flow directions, connections and outfall locations;
  - Photographic records of relevant chambers, defects and connection points; and
  - Recommendations for any cleaning, repair, replacement or remedial works considered necessary.
- No connection shall be made to the existing surface-water drainage system until its condition, capacity and suitability have been verified and the survey information has been reviewed by the Design Team.
- Any discrepancies between the survey findings and the Contract Documents shall be notified immediately to the Design Team, and no associated work shall proceed until further instruction has been issued.

#### ALTERATION TO EXISTING / NEW GULLIES AND BELOW-GROUND DRAINAGE CONNECTIONS

- The Contractor shall provide the alterations of existing / forming of all new connections from new downpipes to new gullies and from new gullies to the existing surface water drainage system. Works shall include:
  - Excavation for new gullies, chambers, pipe runs and connections.
  - Installation of new trapped or non-trapped gullies as specified.
  - Installation of new below-ground pipework laid to suitable falls.

- Provision of bends, junctions, rodding access, inspection chambers and fittings as required.
- Connection to existing surface water pipework or chamber.
- Core drilling or forming new connections into existing chambers where required.
- Making good existing chambers disturbed by the works.
- Ensuring all new connections are watertight and properly sealed.
- Testing of new drainage prior to backfilling.
- Connections to existing drainage shall be made using proprietary fittings, adaptors or approved connection methods. Saddles or site-formed connections shall not be used unless specifically approved by the Civil Engineer.

#### TRENCHES FOR PIPELINES

- Trench sides shall be adequately supported or safely battered back at all times. The bottoms of the trenches are to be carefully levelled to the correct gradient and rammed to thorough consolidation before the underbed is constructed.

#### TRENCH WIDTHS

- From the bottom of the trench to a level of 300mm above the crown of the pipe, trench widths shall not be less than the minimum nor greater than the maximum figures shown in Table below.
- The minimum width is that width between the faces of the soil required to ensure the correct placing and compaction of bedding materials equally on either side of the pipe. All sheeting and supports are to be outside this width.
- The maximum width is that width between the faces of the soil that has been used in the structural design of the pipeline, and it includes an allowance for sheeting and tolerance.
- The Contractor shall provide whatever additional pipe protection is necessary should the specified maximum width be exceeded due to his method of working.

Nominal Pipe diameter – 150mm

Minimum trench width – 500mm

Maximum trench width – 700mm

#### SETTING OUT OF SEWERS

- The Contractor shall be held responsible for the proper setting out of the pipelines, which shall be laid to their proper levels and grades with the aid of a pipe-laying laser.

#### PIPE LAYING

- All pipes shall be laid to the lines and levels shown on the drawings or to such other alignments and gradients as may be directed by the Architect / Engineer.
- Pipes shall be laid with the sockets facing upstream and starting at the downstream end of the trench
- Suitable measures shall be taken to prevent soil or other material from entering pipes, and to anchor each pipe to prevent flotation or other movement before the Works are complete.
- All pipes and specials shall be inspected before laying and defective ones removed from site
- Where socketed pipes are required to be laid on a granular bed joint holes shall be formed in the bedding material to ensure that each pipe is uniformly supported throughout the length of its barrel and to enable the joint to be made.
- Pipes shall be laid on setting blocks only where a concrete surround or cradle is used.
- No protective cap, disc or other appliance on the end of a pipe or fitting shall be removed permanently until the pipe or fitting that it protects is about to be jointed. Pipes and fittings,

including any lining or sheathing shall be examined for damage and the joint surfaces and components shall be cleaned immediately before laying.

- The Contractor shall prevent disturbance or softening of wet fine-grained soils such as clays, silts and fine sands in the trench bottom, by proper drainage and by placing a blanket of coarse sand and gravel or other approved granular bedding material on the virgin formation as soon as it is uncovered. No traffic in the trench bottom shall be allowed until the blanket is in place. In very soft ground this blanket shall be additional to the normal bedding required for the pipe. Extra soft spots shall be hardened to the general condition of the bottom by tamping in granular material before continuing with the blanket.
- In mixed soils containing large boulders, stones or flints, any object which is near enough to the bottom to form a hard spot shall be removed and replaced by granular material.

#### PIPE JOINTING

- Pipe jointing surfaces and components shall be kept clean and free from extraneous matter until the joints have been made or assembled. Care shall be taken to ensure that there is no ingress of grout or other extraneous material into the joint annulus after the joint has been made.
- Unplasticized P.V.C. pipes shall be jointed strictly in accordance with "The Recommendations for Handling and Installation of Unplasticized P.V.C. Pipe" published by the NSAI.
- Rubber Joint Rings for watermains and drainage purposes shall be Types 1 and 2 respectively, complying with the relevant provisions of BS EN 681, and shall be obtained from the pipe manufacturer.
- Joint lubricants for sliding joints shall have no deleterious effects on either the joint rings or pipes, and shall be unaffected by the liquid to be conveyed. Only lubricants recommended by the pipe manufacturers should be used.

#### BACKFILLING AND REINSTATEMENT

- Following installation and testing of the new drainage, excavations shall be backfilled using suitable approved material, compacted in layers.
- Reinstatement shall match existing adjacent finishes unless noted otherwise. Allow for reinstatement of:
  - Tarmacadam surfaces.
  - Concrete paving or aprons.
  - Concrete footpaths.
  - Kerbs and edgings.
  - Gravel margins.
  - Grass or soft landscaping.
  - Line markings, playground markings or surface finishes disturbed by the works.
  - External wall finishes, plinths and splash zones affected by new downpipes or gullies.
- Reinstated surfaces shall be left even, safe, free-draining and matching adjacent levels. Ponding at new gullies or reinstated areas shall not be accepted.

#### TESTING, INSPECTION AND HANDOVER

- The Contractor shall test all new drainage installations before covering up or backfilling.
- Testing requirements shall include:
  - Visual inspection of all new roof outlets, downpipes, gullies and connections.
  - Water testing of new roof outlets and rainwater goods.
  - CCTV survey of new and affected existing drainage where required.
  - Confirmation that all gullies discharge freely to the existing surface water system.
  - Confirmation that no ponding occurs at roof outlets or external gullies.

- Provision of as-built information showing new outlets, downpipes, gullies, pipe routes and connection points.
- All drainage routes shall be left clean, free from debris and fully operational on completion.

## 24. EXTERNAL FAÇADE SIGNAGE

### Aluminium Composite Panel Signage – St. Kevin’s College, Ballygall

- **Location:** Fixed to new facade cladding, generally in the location of the existing school signage, subject to final confirmation on site by the Architect / Design Team.
- **Sign type:** External flat panel school identification sign.
- **Overall size:** Approximately **6700 mm long x 800 mm high**, or as confirmed on Architect’s drawings / setting out.
- **Panel material:** Aluminium Composite Panel, suitable for external use.
- **Panel thickness:** Minimum **3 mm ACP**, or manufacturer’s recommended thickness suitable for panel size, wind loading and fixing arrangement.
- **Finish:** Factory-finished aluminium composite panel with durable external-grade coating. Colour to be agreed with Architect / Client.
- **Graphics:** Signage to include:
  - Text: **“St. Kevin’s College, Ballygall” & “An Edmund Rice School”**
  - School crest / logo
  - Font, colours, layout and graphic arrangement to be agreed with the Architect / Client prior to manufacture.
- **Graphic application:** External-grade UV-stable digitally printed vinyl / direct printed finish with protective anti-UV laminate, suitable for long-term external exposure.
- **Edges:** Clean cut, smooth and free from burrs. Exposed edges to be sealed / finished as required by panel manufacturer.
- **Weathering:** Signage and graphics to be suitable for external exposure, resistant to fading, staining, delamination and water ingress.
- **Fixing substrate:** New facade cladding system. Contractor to confirm the proposed fixing method is compatible with the cladding system and does not compromise the cladding manufacturer’s warranty, fire performance, weathering, drainage cavity or movement requirements.
- **Fixing method:** Secret or neat exposed mechanical fixing system to be agreed with Architect prior to installation. Adhesive-only fixing will not be accepted unless specifically approved by the Design Team and cladding manufacturer.
- **Fixings:** Stainless steel fixings, grade suitable for external exposure, with nylon / EPDM washers or isolating components where required to prevent bimetallic corrosion.
- **Sub-frame / rails:** Provide aluminium or stainless steel support rails / brackets where required to ensure the ACP panel is securely fixed, flat, plumb and adequately supported across the full sign length.

### SUBMITTALS

Before manufacture, submit the following to the Architect / Design Team for approval:

- Scaled signage layout showing text, school logo, colours, font, dimensions and margins.
- ACP panel specification, including manufacturer, thickness, finish and external durability rating.
- Details of graphic finish, vinyl / print specification and protective laminate.
- Proposed fixing method, support rails / brackets and fixing centres.
- Confirmation that fixings to the facade cladding will not compromise cladding performance, warranty or weathering.
- Sample panel / colour swatch and sample graphic finish, if requested.

#### 4.0 - APPENDIX A

#### MCLA SCHEDULE OF TENDER DOCUMENT& DRAWINGS

MCLA Documents and Drawings are subject to copyright. Any variation in documents to be reported to Architect. Contractors Must Verify specifications prior to Starting Work. The following documents have been provided for tender stage:

| DRAWING & DOCUMENT ISSUE SHEET |                                             | <br>Unit 4B, Elm House, Millennium Park, Naas, Co Kildare<br>Telephone No: 00 353 45 854 900<br>Email: info@mclarchitecture.ie<br>Website: www.mclarchitecture.ie |  |  |  |  |  |  |  |  |  |
|--------------------------------|---------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|--|--|--|
| Project No.                    | 26 07                                       |                                                                                                                                                                                                                                                     |  |  |  |  |  |  |  |  |  |
| Project Title                  | St. Kevin's College<br>Ballygall, Dublin 11 |                                                                                                                                                                                                                                                     |  |  |  |  |  |  |  |  |  |
| Project Stage                  | Tender                                      |                                                                                                                                                                                                                                                     |  |  |  |  |  |  |  |  |  |
| DWG. NO.                       | DRAWING TITLE                               | REVISION                                                                                                                                                                                                                                            |  |  |  |  |  |  |  |  |  |
|                                | <b>1. Architectural Documents</b>           |                                                                                                                                                                                                                                                     |  |  |  |  |  |  |  |  |  |
| 26 07 - Spec                   | MCLA Architectural Building Specification   | •                                                                                                                                                                                                                                                   |  |  |  |  |  |  |  |  |  |
| 26 07 - WN Spec                | MCLA Specification of Windows               | •                                                                                                                                                                                                                                                   |  |  |  |  |  |  |  |  |  |
| -                              | MCLA Roof System TS Requirements            | •                                                                                                                                                                                                                                                   |  |  |  |  |  |  |  |  |  |
|                                | <b>1.1 Architectural Drawings</b>           |                                                                                                                                                                                                                                                     |  |  |  |  |  |  |  |  |  |
| 26 07 - SV001                  | Survey of Existing Site Plan                | •                                                                                                                                                                                                                                                   |  |  |  |  |  |  |  |  |  |
| 26 07 - SV100                  | Survey of Existing Floor Plan & Sections    | •                                                                                                                                                                                                                                                   |  |  |  |  |  |  |  |  |  |
| 26 07 - SV101                  | Survey of Existing Reflective Ceiling       | •                                                                                                                                                                                                                                                   |  |  |  |  |  |  |  |  |  |
| 26 07 - SV102                  | Survey of Existing Roof Plan                | •                                                                                                                                                                                                                                                   |  |  |  |  |  |  |  |  |  |
| 26 07 - SV200                  | Survey of Existing Elevations               | •                                                                                                                                                                                                                                                   |  |  |  |  |  |  |  |  |  |
| 26 07 - T001                   | Proposed Phasing Plan                       | •                                                                                                                                                                                                                                                   |  |  |  |  |  |  |  |  |  |
| 26 07 - T002                   | Proposed Site Works (Rainwater Connections) | •                                                                                                                                                                                                                                                   |  |  |  |  |  |  |  |  |  |
| 26 07 - T100                   | Proposed Floor Plan                         | •                                                                                                                                                                                                                                                   |  |  |  |  |  |  |  |  |  |
| 26 07 - T101                   | Proposed Clerestory Glazing Plan            | •                                                                                                                                                                                                                                                   |  |  |  |  |  |  |  |  |  |
| 26 07 - T102                   | Proposed Reflective Ceiling Plan            | •                                                                                                                                                                                                                                                   |  |  |  |  |  |  |  |  |  |
| 26 07 - T103                   | Proposed Roof Removals                      | •                                                                                                                                                                                                                                                   |  |  |  |  |  |  |  |  |  |
| 26 07 - T104                   | Proposed Roof Installations (Sheet 1 OF 2)  | •                                                                                                                                                                                                                                                   |  |  |  |  |  |  |  |  |  |
| 26 07 - T105                   | Proposed Roof Installations (Sheet 1 OF 2)  | •                                                                                                                                                                                                                                                   |  |  |  |  |  |  |  |  |  |
| 26 07 - T400                   | Proposed Window / Door Schedule 01          | •                                                                                                                                                                                                                                                   |  |  |  |  |  |  |  |  |  |
| 26 07 - T401                   | Proposed Window / Door Schedule 02          | •                                                                                                                                                                                                                                                   |  |  |  |  |  |  |  |  |  |
| 26 07 - T402                   | Proposed Window / Door Schedule 03          | •                                                                                                                                                                                                                                                   |  |  |  |  |  |  |  |  |  |
| 26 07 - T403                   | Proposed Window / Door Schedule 04          | •                                                                                                                                                                                                                                                   |  |  |  |  |  |  |  |  |  |
| 26 07 - T500                   | Detailed Construction Drawings              | •                                                                                                                                                                                                                                                   |  |  |  |  |  |  |  |  |  |
| 26 07 - T501                   | Detailed Construction Drawings              | •                                                                                                                                                                                                                                                   |  |  |  |  |  |  |  |  |  |
|                                | <b>2. Safety &amp; Health Documents</b>     |                                                                                                                                                                                                                                                     |  |  |  |  |  |  |  |  |  |
| -                              | Completed AF1 Form                          | •                                                                                                                                                                                                                                                   |  |  |  |  |  |  |  |  |  |
| 26 07 - DRA                    | MCLA Design Risk Assessment                 | •                                                                                                                                                                                                                                                   |  |  |  |  |  |  |  |  |  |
| 26 07 - PS&HP                  | MCLA Preliminary H&S Plan                   | •                                                                                                                                                                                                                                                   |  |  |  |  |  |  |  |  |  |
| -                              | Asbestos Reports                            | •                                                                                                                                                                                                                                                   |  |  |  |  |  |  |  |  |  |
| -                              | CoP for Safety in Roofwork                  | •                                                                                                                                                                                                                                                   |  |  |  |  |  |  |  |  |  |
| -                              | CoP for Access and Working Scaffolds        | •                                                                                                                                                                                                                                                   |  |  |  |  |  |  |  |  |  |
| -                              | CSP Welfare Facilities                      | •                                                                                                                                                                                                                                                   |  |  |  |  |  |  |  |  |  |
|                                | <b>3. Building Survey</b>                   |                                                                                                                                                                                                                                                     |  |  |  |  |  |  |  |  |  |
| -                              | Refer to Complete Tender Package            | •                                                                                                                                                                                                                                                   |  |  |  |  |  |  |  |  |  |
|                                | <b>4. M&amp;E Service Information</b>       |                                                                                                                                                                                                                                                     |  |  |  |  |  |  |  |  |  |
| -                              | Refer to Complete Tender Package            | •                                                                                                                                                                                                                                                   |  |  |  |  |  |  |  |  |  |

N.B - Any variation to the pricing of this Tender Package is to be highlighted by the tendering contractor as an appendix to their tender return.

End of Document.



MCLA