Appendix F. Timber Frame Quotations

- 1907j – Building With Frames Quotation.
- MM/NA/PMH/FH19397 – Frame UK Quotation.
- TTF-19208 – Truro Timber Frames Quotation.

Millimetres 0 10 100

DO NOT SCALE

GA SECTION LEGEND

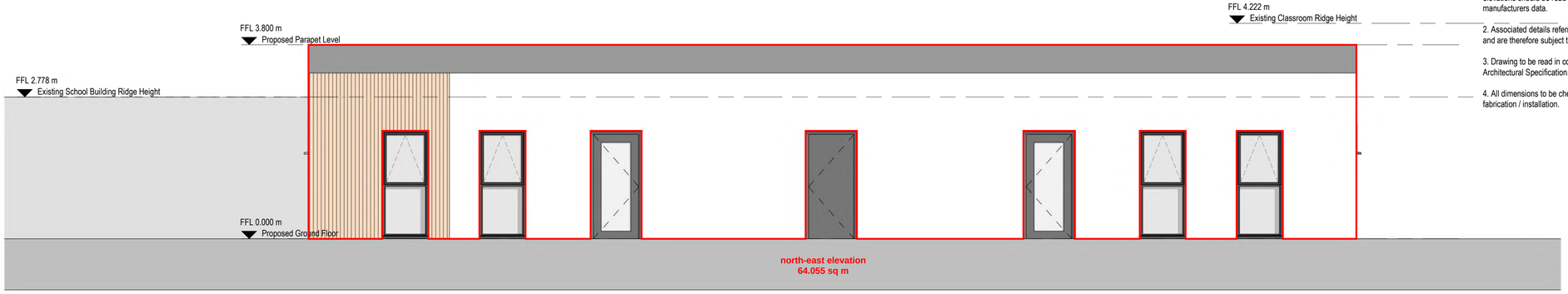
NOTES:

1. This drawing represents the Architectural Intent only. The reproduction process can distort actual colours, therefore these elevations should be read in conjunction with physical samples and manufacturers data.

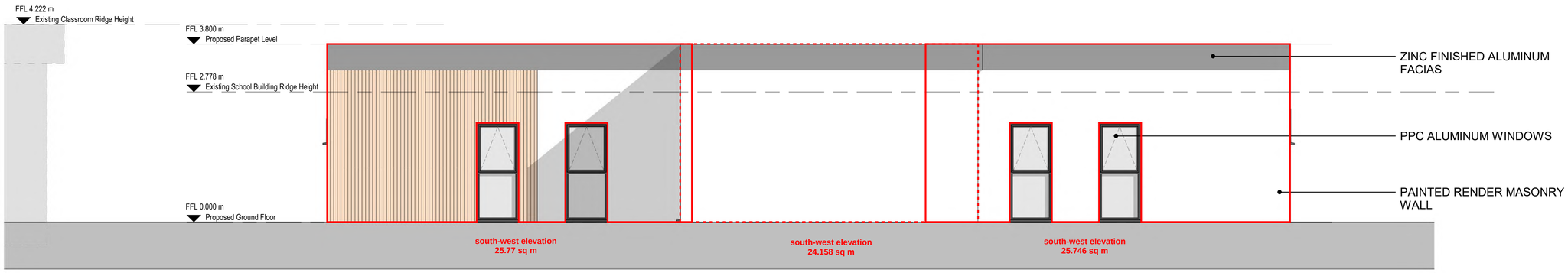
2. Associated details referred to represent the Architectural Intent only and are therefore subject to the Specialist Designers Standard Details.

3. Drawing to be read in conjunction with relevant sections of the Architectural Specification.

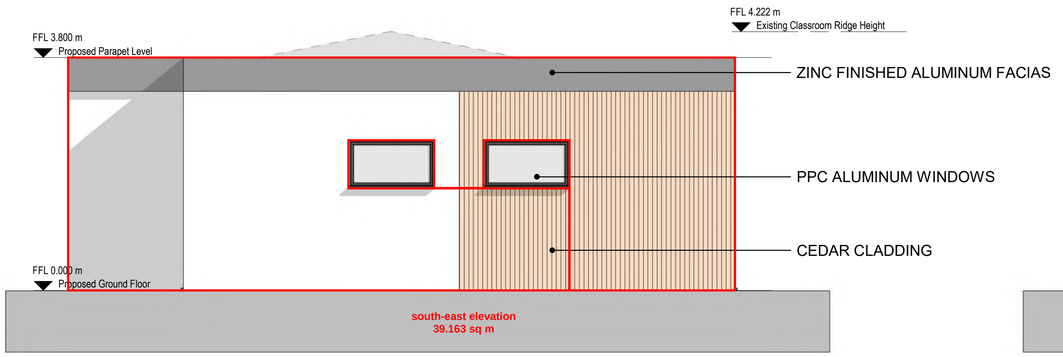
4. All dimensions to be checked on site by contractor prior to fabrication / installation.



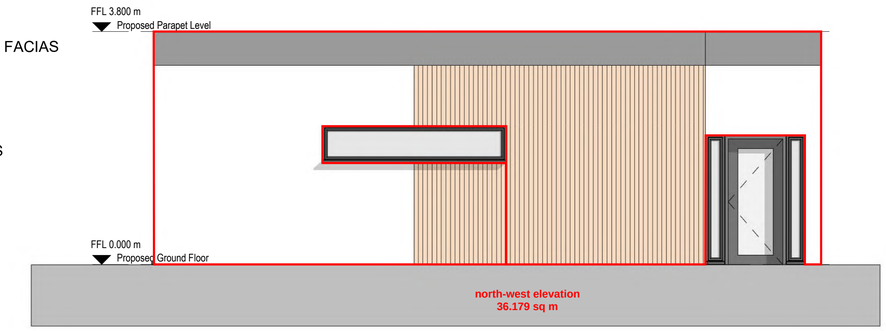
1/1400 North East Facing Elevation
SCALE 1 : 50



3/1400 South West Facing Elevation
SCALE 1 : 50



2/1400 South East Facing Elevation
SCALE 1 : 50



4/1400 North West Facing Elevation
SCALE 1 : 50

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following:

CONSTRUCTION

MAINTENANCE/CLEANING

DECOMMISSIONING/DEMOLITION

It is assumed that all works will be carried out by a competent contractor working, where appropriate, to an approved method statement

Rev.	Date	Description	By	Chk'd	App'd
P02	02/07/2019	Update to planning submission	KP	DL	TU
P01	27/06/2019	Planning Submission	KJ	DL	TU

Drawing Suitability: **PLANNING** Status: **S2**

SNC·LAVALIN ATKINS
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Atkins Ltd
Octagon Pynes Hill Court
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EX2 5AZ
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www.atkinsglobal.com

Client: Trewirgie Junior School, Falmouth Rd, Redruth, TR15 2QN

Project Title: TREWIRGIE JUNIOR SCHOOL

Drawing Title: GENERAL ARRANGEMENT ELEVATIONS

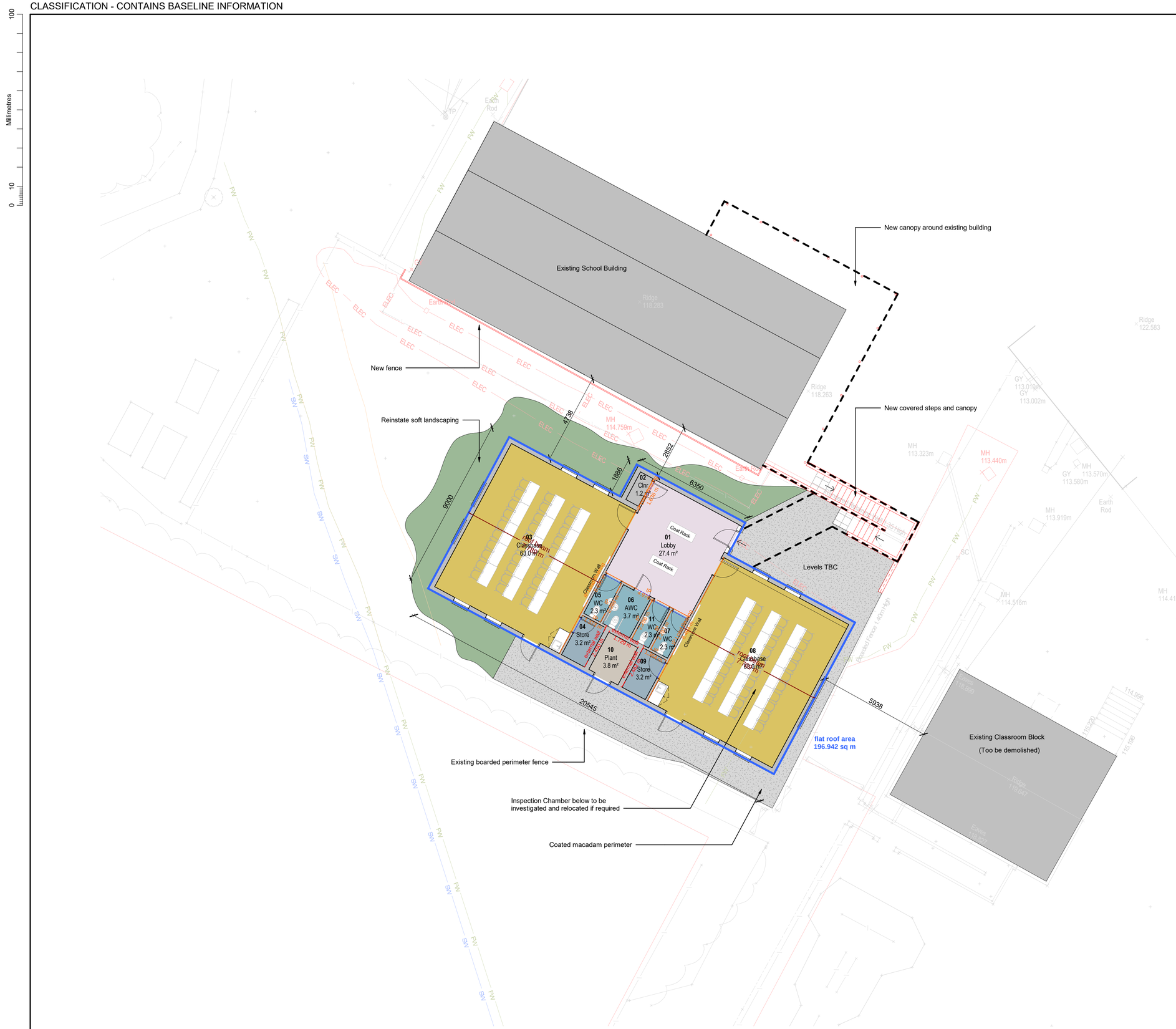
Scale	Designed	Drawn	Checked	Authorised
1 : 50	KJ	KJ	DL	TU
Original Size	Date	Date	Date	Date
A1	27/06/2019	27/06/2019	27/06/2019	27/06/2019

Drawing Number: 5188434-ATK-V1-XX-EL-A-1400 Revision: P02

Work in-Progress 02/07/2019 15:06:56

Atkins Project Number: 5188434

DO NOT SCALE



NORTH

0m 1m 5m 10m

Scale 1:100

1 / 1100 LEVEL 0 - GENERAL ARRANGEMENT PLAN

SCALE 1 : 100

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following:

CONSTRUCTION

MAINTENANCE/CLEANING

DECOMMISSIONING/DEMOLITION

It is assumed that all works will be carried out by a competent contractor working, where appropriate, to an approved method statement

Rev.	Date	Description	By	Chk'd	App'd
P02	02/07/2019	Update to planning submission	KP	DL	TU
P01	27/06/2019	Planning Submission	KJ	DL	TU

Drawing Suitability: **PLANNING** — Status: **S2**

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Client: Trewirgie Junior School, Falmouth Rd, Redruth, TR15 2QN

Project Title: TREWIRGIE JUNIOR SCHOOL

Drawing Title: LEVEL 0 - GENERAL ARRANGEMENT PLAN

Scale	Designed	Drawn	Checked	Authorised
1 : 100	KJ	KJ	DL	TU
Original Size	Date	Date	Date	Date
A1	27/06/2019	27/06/2019	27/06/2019	27/06/2019

Drawing Number: 5188434-ATK-V1-00-PL-A-1100 — Revision: P02

Atkins Project Number: 5188434 Work in-Progress 02/07/2019 14:41:09

SIPs Frame Supply & Install Quotation

OFFSITE CONSTRUCTION
BUILDING WITH FRAMES

Job Description:	Job Name	Quote ref:	Rev:
New Build - Teaching Block	Trewirgie Junior School, Falmouth Road, Redruth	1907j	19/07/2019

Internal Partitions		Measurement	No. included	Info	Price
Internal 89mm Timber studwork		100	1		£ 1,496.79
9mm OSB3 sheathing to load bearing walls		56	1		£ 364.15
Other requirements/ Upgrades					
Total for Internal Partitions					£ 1,860.94

SIPs - External Walls		Measurement	No. included	Info	Price
125mm sips walls		236	1		£ 12,921.19
Soleplates, DPC, packers and fixings	*Lineal metres*	71	1		£ 483.65
Standard breather membrane (per Roll 140m²)		420	1		£ 409.50
Other requirements/ Upgrades					
Total for SIPs external walls					£ 13,814.34

SIPs Roof		Measurement		Info	Price
SIPs Roof @ 1.2m centres *(roofs with crane/ plant access to site)*					
175mm sips roof panels		197	1		£ 13,838.88
Standard roofing breather membrane (per Roll 75m²)		300	1		£ 565.50
Other Variations & Additional Items					
Timber Firrings (1:40 or 1:80 fall)	*at 600 centres*	197	1		£ 1,308.67
18mm Plywood Deck		197	1		£ 2,210.14
Other requirements/ Upgrades					
Total for SIPs Roof					£ 17,923.19

Structural Products		Measrement			Price
PROVISIONAL SUM - please note this section of your quotation will be subject to design and engineering that will clarify the beams required					
Beams / Posts	Steel / Timber / Glulam	16.00	0.10	0.30	£ 1,104.00
Specialist Connectors	budget for fixings & plates	£ -			£ -
Other requirements/ Upgrades					
Total for post and beam					£ 1,104.00

Exclusions to the Quotation

1 NHBC Certification, U Value Calculations
2 Leadwork
3 Works to existing properties
4 Demolition/removal/stripping
5 Groundworks, drainage, concrete works
6 Scaffolding, support work, props etc
7 Site Survey, access conditions
8 Waste disposal (skips to be provided by client/main contractor)
9 Masonry/blockwork/stonework/wall ties/ext lintels
10 Structural steelwork & design
11 Roof structure insulation and membrane
12 Balcony structure
13 Balcony attachment or balustrade works, unless full detailing is provided prior to our design
14 Telehandler and/or crane for offloading and site loading of frame products assumed amounts below
15 Flat roof insulation
16 Insulation unless listed on spreadsheet
17 Roof covering, roof lights etc
18 Stairs
19 Plasterboarding/dry lining/noggins, battens
20 Firestops, VCL's and cavity barriers
21 Boxings, SVP covers etc
22 Soffits, vents, fascia and barge boards
23 Guttering
24 Doors & windows
25 Internal or external battens
26 Notching drilling
27 Duct route planning
28 Threshold detailing
29 Planning, approvals, permissions or permits
30 Applications or approvals
31 Building control
32 Inspections
33 Connections to existing structures
34 Porch or leanto unless specified
35 Garage uless specified
36 Responsibility for other trades
37 Storage facilities for products post manufacture
38 Site attendance
39 Site safety outside our own package
40 Site welfare facilities
41 Power / electric supply
42 Water supply
43 Hot water supply
44 Site storage
45 Crane instruction
46 Banksman / slinger
47 Radio communications
48 Roof membrane unless specified
49 Roof insulation unless specified
50 Fire breaks
51 Spandrel roof panels
52 Valley boards
53 First fix carpentry items
54 Ceiling noggins
55 Battens unless specified
56 Subsistence, travel & accomadation outside of Cornwall if necessary

Total for internal walls					**£**	**1,860.94**
Total for sip walls					**£**	**13,814.34**
Total for sip roof					**£**	**17,923.19**
Total for post and beam					**£**	**1,104.00**
Subtotal					**£**	**34,702.47**
Craneage/telehandler estimated days -	**2.00**	**@**	**520**	**per day**	**£**	**1,040.00**
Delivery based on trucks estimated no. -	**2.00**	**@**	**250**	**each**	**£**	**500.00**
Total for Site/ Project Management & Labour (Subject to; site survey and comfirmation of subcontractor costs)					**£**	**7,160.40**
Total for design, calculations and Professional Fees - % of Subtotal or minimun £600.00						*Cost in main quotation*
Total project price					**£**	**43,402.87**

Terms and Conditions

In this document the expression 'BWF' means 'BWF Construction Ltd.' and the expression 'the Customer' means the persons, firms or company to whom the quotation is addressed and/or any person acting on behalf of the customer.

The acceptance of this quotation includes the acceptance of the following terms and conditions. No variation of these conditions shall be valid unless agreed in writing by BWF.

Quotation

1. Unless otherwise agreed in writing, BWF's quotation and price is based on the cost of materials, labour, plant and services at the date of quotation. The quotation figure will be held for a period of 30 days. BWF have the right to review this quotation figure in the event of any fluctuation in the cost of such materials, labour, plant and services, if an order is received after the 30-day period has elapsed.

2. If any materials are required in addition to those included in the quotation they will be charged as additional items. If this additional material also needs additional labour, it will be charged for at the current day work rates paid on actual hours worked unless a fixed price basis is agreed in writing. BWF reserve the right to apply additional material and labour costs that occur because of delays in the start and/or completion date of the installation due to conditions outside of the company's control. Any items not described within the quotation are to be supplied and fixed by others or carried out by BWF as a variation.

3. All orders are accepted based on the Customer's drawings used at the quotation stage. It is the customers responsibility to ensure that BWF's quotation to comparable to the Customer's drawings or specifications. BWF will not be held responsible for any Errors or Omissions, and it is the responsibility of the customer to question these prior to placing an order. If errors and omissions are found after the placing of the order, it will be considered as a variation of order and additional costs will be charged. BWF reserves the right to make additional charges in respect of any variation in the drawings and/ or changes to layouts after the placing of an order affecting the manufacturing programme and/or delivery dates. Any items which have commenced fabrication cannot be credited if they are no longer required by the Customer.

4. All costs may increase subject to the structural engineer's design. Whilst every effort will be made to ensure that BWF's quotation is as accurate as possible, there may be situations where engineering shows that additional elements may be needed including: racking, sheathing, closer studs, truss/ joist centres, and/ or larger support beams and posts. If this is required, then an additional charge will be issued as a variation of the order.

5. All quotations assume that the site will have easy and safe access for the personnel, tools and material needed to carry out the works and presents no delays to the continuous performance of the work. If access to site is delayed or abnormal steps are required to achieve access, BWF reserves the right to charge all the additional costs it incurs. The Customer must provide suitable hard-standing for the offloading of materials and must be suitable for the vehicles required for the installation.

Payment Terms

6. Staged payments to be agreed with the customer at time of order. Any discount offered for timely payment included with the price will be forfeited if payments are not received by BWF by the due dates.

7. Payments received by credit and debit card will have a charge of 2.5% added to the total value.

8. BWF requires payments in accordance with our standard payment schemes as set out below and will not accept late payments. Late payments may incur delays to the design/ manufacturing/ construction process for which BWF will not be held responsible for.

- For offsite construction projects, BWF's payment scheme is; 20% deposit/ design fees; 60% fabrication, procurement and construction of offsite products; 20% to be made before delivery to site.

- For supply & install projects, BWF's payment scheme is; 10% deposit/ design fees; 40% fabrication & buying of materials; 40% on delivery, (for the install on site); and 10% final payment at sign off.

- For supply only projects, BWF's payment scheme is; 20% deposit/ design fees; 40% fabrication & buying of materials; 40% final payment to be made before delivery to site.

9. BWF does not accept set-offs or contra charges and does not aim to make claims against others, except in extreme cases or where storage costs are incurred.

10. Upon delivery of any goods, materials or plant supplied by BWF to the Customer, the Customer shall hold the goods, materials or plant solely as bailee for BWF and the goods, materials or plant shall remain the property of BWF until the Customer has paid in full, whether in respect of the goods, materials, plant or otherwise. If the Customer is in default in respect of payment, BWF will be entitled to enter upon the premises of the Customer for the purposes of removing the goods, materials or plant and BWF shall have no liability for any costs arising from such actions.

Intellectual Property Rights

11. All drawings, descriptive matters and other documents relating to the quotation supplied by BWF remain the property of BWF and must not be copied and/or shown to any third party except where those documents are already the property of the Customer.

12. Where work is carried out to the Customer's specifications or instructions or where the Customer uses products or goods in breach of any patent, registered design, copyright or other intellectual property, the Customer shall indemnify BWF against all damaged, penalties, costs and expenses arising out of the infringement.

Lead in Time

13. Period between acceptance of quotation and delivery to site are to be agreed by BWF and the Customer. Confirmation of the projects delivery date to site will be issued on receipt of; official order/ deposit, finalised drawings and design requirements (shown below). Installation period on site to be agreed between BWF and Main Construction Programme. The frame will be manufactured in advance of an agreed installation programme and a minimum of two weeks is required to postpone manufacture.

Delivery & Craneage

14. Unless otherwise agreed in writing, the materials will be delivered to site by road transport for installation. The costs quoted for transportation are based on a delivery by an 40ft arctic lorry with a minimum fee plus cost per mile from our fabrication factory. Any changes needed to be made based on access to site and ground conditions, split loads and delivery dates may incur additional costs.

15. Any time or date for delivery will be calculated by BWF. Any such time or date is to be treated as an estimate only and BWF will not be liable for; indirect or consequential loss; loss of profit; or loss of business alleged to have arisen from any delay or other circumstances in relation to BWF's activities.

16. If the Customer delays delivery from the agreed programme date for whatever reason then BWF reserves the right to charge storage arising from such delays and for any costs it incurs giving additional weather protection and/ or the cost for remedial works in rectifying the product due to deterioration due to water or moisture.

17. Once on site the materials will be lifted by crane and placed in position on a prepared foundation. Generally, cranage is not included in our quotation. Where it is offered a 50 tonne capacity crane will be included unless otherwise specified. If access requires a larger capacity crane to be used, then BWF reserves the right to make additional charges. In all instances BWF accepts no liability for any damage caused to unprotected surfaces or underground services that must be crossed to gain access to carry out the installation. All liability rests with the Customer.

18. Delivery will be to the closest practical point or temporary surface suitable for the vehicles stated above. There is a standard two hours turnaround time allowed for once the vehicle has arrived at site, and in the event of this allocation being exceeded then additional charges may be levied against the Customer.

19. Any access permits, public highway/ road closures or permissions to over sail neighbouring properties is the Client's responsibility. The hiring of cranes and the duties of the appointed persons and lift supervision will be carried out by BWF's site installation team. Any delays to the delivery/erection due to late or unknown road/ site closures will be charged.

Works

Design

20. The design of the structural SIPs/ timber frame is BWFs responsibility only, and includes the preparation of structural calculations, manufacturing and site installation drawings. BWF accepts no responsibility for the design of any element of the building other than the structural SIPs/ timber frame BWF are supplying. In the case of attaching to existing structures BWF will not be responsible for making sure this existing structure will comply with regulations and be structurally sound. It is the responsibility of the Client to ensure compliance with all elements of the building regulations.

21. The architectural drawings/ design, together with the specifications must be frozen before commencement of any design work. Any alterations received after the design has commenced could influence the overall programme and could result in additional costs to the Customer. If the Customer makes any alteration or adjustment to the building and/ or specifications without BWF's written permission, all BWF's liabilities in respect thereof shall immediately cease.

22. Preliminary drawings will be issued to the Client for prior approval of critical dimensions and details before the commencement of buying of materials and fabrication of the project. All dimensions are quoted in millimetres unless stated otherwise.

23. Once the designs are approved by the Customer, BWF will supply sets of structural calculations, and assembly drawings direct to the Customer for inclusion with the Customers submissions to Building Control. Further sets are sent to site for Installers use only. Additional copies of the above can be supplied for a Fee.

Structural elements

24. All structural element required to hold up the frame elements, including all fixings, are included within the provisional sum shown in the quotation, whether this be; steelwork, glulam, timber and/or other materials.

25. Where structural elements are required within the floor joists or roof area, BWF will endeavour to keep these within the structure. They may protrude below the ceiling/ roof line, at this point no additional materials will be included to create a flush surface unless otherwise stated by the Customer.

26. Thermal couplings are excluded, and will be advised once full engineering has been carried out.

27. Structural steels will be supplied as Red Oxide Coated mild steel. Regardless of location or drawing details Galvanising/Fire treatment or any other deviation from Red Oxide coated has not been allowed for and will constitute a variation of order and will be supplied at an extra cost and extend delivery time to the Customer. All omissions or additions as required either through the Structural Engineer, the Clients request, or any other reason will be considered a variation of order and will be an additional cost to the Customer.

Foundations

28. Unless otherwise stated the foundations are installed by the Customer, the Customer shall be responsible for the accuracy of the setting out, dimensions, levels and, where applicable, dolly courses. BWF is not responsible for any supporting structure or foundation work not designed and installed by BWF. BWF accepts no liability for any

consequences of the insufficiency of any such supporting structure or foundation. Any additional costs incurred by BWF due to inaccurate foundations will be charged as an extra.

29. Beam and block foundations with perimeter/ dolly blocks to be a minimum of 7N/m2. Any post/ beam support details that are separate to the slab must finish at ground and/ or slab level. BWF have not allowed for materials suitable for use below D.P.C. level unless otherwise stated.

30. The substructure should be constructed within the following tolerances;

- Level + or — 5mm from datum point
- Line/ Length + or — l2mm overall
- Diagonals + or — 5mm for diagonal up to 10m in length and + or — 10mm >l0m in length

Where foundations are outside the above tolerances BWF reserve the right to pass on additional charges for packing more than 12mm, standing time, and delays to the programme. Any resulting delays will be added to BWF's Build Programme.

31. The materials will be placed on the foundations by BWF's installation team in accordance with BWF's method statement. All site works required to complete the project in accordance with BWF's quotation will then be carried out prior to it being offered for acceptance by the Customer.

Erection Service

32. Except for those items identified as being on a supply only basis for fixing by others, all the elements referred to in the specification and scope of works will be fixed by BWF's Site installation team.

33. Unless otherwise stated the Customer is responsible for the provision and connection of all services to the building. Where services need to be connected to facilities done by BWF, then these must be provided in line with BWF's requirements and programme. In the event of failure to do so and additional visits by BWF is required, then this will be charged as an extra.

34. We have allowed for a continuous flow for the installation of the frame. Generally, where BWF incurs additional costs because of late, delayed or faulty completion of work not under BWF's control, BWF may at its discretion charge such costs as an extra to extend the programme to reflect any delay.

35. Where BWF is not appointed main or general contractor, no responsibility is accepted by BWF in respect of loss or damage arising outside normal working hours or after personnel have left the site on completion of erection.

36. BWF will provide a Site Supervisor/ Manager who will be appointed to supply technical backup and site communication to the Customer through-out the period of install. BWF's Site Supervisor/ Manager will attend site periodically, this is dependent on the complexity of the project and they are not required to be on site at all times.

37. Any problems and/ or questions that the Customer has regarding the project during the install process will be directed at the Site Supervisor/ Manager. No other member of BWF's install team will be able to make final decisions/ changes regarding the project. Similarly, any additional items and/ or costs the Customer requires will be decided by BWF's Site Supervisor/ Manager.

38. Fall prevention system will be supplied and installed by the site installation team for the duration of the timber frame installation if required. Additional scaffold to be supplied by the Customer/ Main Contractor if required. BWF make no allowance for a Trad Deck System or internal scaffold.

39. BWF will only carry out day works upon receipt of written instructions and appropriate official variation order. Day work rates will be discussed with the appropriate subcontractor

Materials

40. Materials relating to non-timber frame construction (i.e. garages, porches, utilities etc. when built in block work or similar) are excluded unless detailed in BWF's quotation.

41. All timber products BWF provides will be supplied or manufactured in accordance with standard calculations and practices from gauged treated timbers. All cut ends on timber will be treated after cutting with the solution provided. Preservative treatment is by double vacuum or similar to external wall components including soleplates. Treatment is provided by BWF to at least the requirements of the current NHBC recommendations.

42. Feature beams, trusses, and posts are supplied bare or with one coat of temporary finish only. BWF have not allowed for final finishing, on-site protection, or final decoration of any timbers (this is the responsibility of the Customer).

43. BWF will not be held responsible for any water or UV damage caused by natural means on site either before, during or after the installation process has taken place.

44. The BWF manufacturing process ensures that nearly all waste materials are recycled prior to delivery of the frame, however some materials may be generated by the installation of the frame and as such this waste, and its safe and legal removal, is the responsibility of the Client/Main Contractor.

45. Generally, BWF supply excess of ancillary materials to ensure that no delays occur through shortages. Therefore, any surplus materials on site remain the property of BWF and will be removed from site after the completion of the works done by BWF.

Handover & Completion

46. On completion of BWF's works, the building will be offered for handover to the Customer for inspection and for all defects to be noted. This is to ensure that in the unlikely event that any remedial works are necessary, they can be carried out, or recorded before BWF's installation team leaves site. Practical completion will be deemed to have taken place upon the completion of the works listed on the defects list. A certificate of Practical Completion shall be exchanged on that date.

47. Final Handing Over is deemed to have taken place when any of the following occurs:

- The Customer or his employee or agent signs the Final Handing Over Certificate
- Any work whatsoever is started by subsequent trades or the Client in or on BWF's frame
- Action or inaction by the Customer prevents completion of the building work and BWF advises him in writing
- A signature is not obtained without any clear written reasons, the Completion will be deemed to have taken place.
- In the case of supply only, the date of delivery of goods and/or materials and/or a building to site notwithstanding whether the above has or has not occurred.

48. Upon signature by Clients confirming completion of works, full responsibility for the works, inclusive of all insurances will be passed to the Client. BWF are liable for our works and will be responsible only if faults, alterations, negligence or damage to BWF works by others occur either prior to or after commencing their works, and/ or prior to handover of the building.

49. If within a period of 12 months from the date of Final Handing Over any fault either of materials or workmanship is proved to exist in any of BWF's work, BWF shall, repair, replace or make good such fault. Save as provided herein all express and implied conditions or warranties, statutory or otherwise, by BWF as to the quality or fitness for any purpose of goods, materials, labour, plant and services supplied are hereby excluded to the full extent permitted by law.

Liability

50. BWF shall not be liable for any loss costs or damage including but not limited to indirect or significant loss of profit or business sustained by the Customer arising from the provision of goods, materials, plant or services by BWF. BWF accepts liability for personal injury or death caused to any person arising from the negligence of BWF.

51. If war and/ or natural disaster, strikes, combinations of workmen, lock outs, accidents, fire, flood or other unforeseen circumstances cause BWF's work to stop, and/ or supplies of raw materials or other exceptional circumstances interfere with the means of transport of materials, delivery may be postponed and the time for completion of the works extended correspondingly.

52. BWF's Standard Liability sums are equal to the following amounts;

- £ l0,000,000 Employers Liability
- £ 5,000,000 Public & Products Liability
- Professional Indemnity Company and Engineers

Warranty

53. The provision of a Collateral Warranty will only become valid once the full contract payment has been received in full and receipted, and is subject to agreement, and acceptance of the terms by our Insurers. BWF will not enter into a contract that requires a Performance Bond or Parent Company Guarantee.

Cancellation

54. The Customer will not be entitled to cancel this order except with the written agreement of BWF. In the event of such cancellation by the Customer, the Customer shall immediately pay to BWF all costs or losses sustained in respect of design, manufacture, opportunity costs and loss of profit on such cancelled order, depending on the stage BWF is at the time of cancellation.

Termination

55. BWF shall, have the right to immediately suspend or terminate works under this order and refuse to make any further deliveries at any time upon the occurrence of any of the following events:

- If the Customer becomes bankrupt or goes into liquidation, otherwise than by voluntary liquidation for the purpose only of amalgamation or reconstruction, or if the Customer enter into arrangement with creditors.
- If the Customer commits any breach of conditions in this document.
- If the Customer refuses to pay any staged payment for a specified amount of time, that is not a delayed/ postponed period agreed with BWF.

Law

56. These Conditions and any order or contract shall be construed in accordance with and governed by the Laws of England.

Trewirgie Junior School - Frame Supply & Install

1907j - Trewirgie Junior School, Falmouth Road, Redruth **Frame Design Quotation** Total for design, calculations and Professional Fees	2,508.35

Drawing Measurements

Attached are your drawings highlighted in corresponding colours for the areas that we have allowed for. Please note the prices in the corresponding colours are the products and amounts allowed in your quotation.

- 1907j Elevations measurements
- 1907j Floor Plan measurements

☑ 1907j - Trewirgie Junior School, Falmouth Road, Redruth **Closed Panel Timber Frame Quotation** This quotation is for our standard package. Please review the attached documents for detail on what is included & excluded in your quotation. Engineering, posts and beams remain provisional until they have been calculated. 1907j Trewirgie Junior School Timber Quote	39,570.43
☐ 1907j - Trewirgie Junior School, Falmouth Road, Redruth **SIPs Frame Quotation** This quotation is for our standard package. Please review the attached documents for detail on what is included & excluded in your quotation. Engineering, posts and beams remain provisional until they have been calculated. 1907j Trewirgie Junior School SIPs Quote	43,402.87 Not selected
Options selected **Total GBP excluding VAT**	1 of 2 **£42,078.78**

Terms and Conditions for frame supply

Please see attached terms and conditions in pdf format. Please note acceptance of this quotation will qualify as having read and agreed to our terms and conditions of contract.

- BWF terms and conditions for frame supply

FROM
Lucy Saunders
BWF Construction Services Ltd
The Mill Building
Mount Wellington Mine
Fernspatt
Cornwall
TR4 8RJ
www.buildingwithframes.co.uk

PHONE
01872 862227

COMPANY NUMBER
7160726

VAT NUMBER
946 4491 90

FOR
Simon Thompson

EMAIL
Simon.Thompson@fgould.com

QUOTE NUMBER
16396

DATE
July 19, 2019

VALID UNTIL
September 17, 2019 at 4:04pm

GDPR Compliance Policy

As of 25th May 2018, the General Data Protection Regulation (GDPR) will become enforceable as a regulation in EU law in order to protect all individuals within the European Union.

As you are (or may be in the future) a customer of BWF we hold some of your personal data on our secure database. When data is stored on paper, it is kept in a secure place in our office where unauthorised people cannot see it. This data may include: your name, address, email address and contact phone numbers where supplied by yourself.

We store this data relating to your business to facilitate working with you and for general correspondence only. Access to this information is held securely and is password protected. This personal data is not shared any third parties.

We are legally required to inform you that we store this information provided by yourself and request that if you no longer wish for us to securely store this data that you contact us, and we will delete our records.

If you have any queries, please do not hesitate to contact us on sales@buildingwithframes.co.uk or 01872 273757.

Quotation MM/NA/PMH/FH19397

30 July 2019

Faithful & Gould
The Octagon
2nd Floor, Pines Hill Court
Rydon Lane
Exeter
Devon
EX2 5AZ

F.A.O. Mr Simon Thompson

Dear Sirs,

Re: **Proposed Classroom Block: – Trewirgie Junior School, Falmouth Road, Redruth, TR15 2QN**

We thank you for your recent enquiry and have pleasure in submitting our Quotation for the design, manufacture, and supply only of our Timber Frame Package for the above-proposed development.

Our prices are based upon the accompanying Specification and Scope of Works, are strictly net, and exclude VAT. These prices are open for acceptance for a period of 40 Days, and will remain fixed for Works valued up to 90 Days from the date of this Quotation. Our prices are also subject to Structural Engineer's design, and our acceptance of your Order Terms.

We trust our Quotation is of interest to you and that we have correctly interpreted your requirements and ask that you check the attached Specification. We look forward to your favourable response and should you require any further assistance with this Specification or Quotation, then please do not hesitate to contact the undersigned.

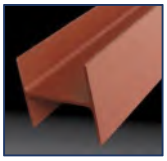
Yours faithfully
Frame UK

Nick Adams
Development Manager
Email: nick.adams@frameuk.com
Tel: 07773 806128

Encl: Specification & Scope of Works
E&OE

Product	Description	ref	Value
FRAME CLASSIC 	Supply Only Open Panel wall system, including floors and/or roofs	1	£19,623.00
	Basic Supply Only Total		**£19,623.00**

Optional Extra Overs

Product	Description	ref	Value
	On Site Erection Package including Crane (**Optional**)	2	£9,099.00
	Provisional Sum for Structural supports (subject to engineering)	3	£2,681.00
FRAME THERMO 	Factory fitted closed panel components, including insulation, VCL and service battens (**Optional**)	4	£3,881.00
SITE SAFE	C2 Fire Mitigation (**Optional**)	5	£9,423.00

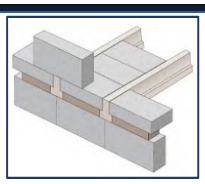
Estimating Notes

Temporary Working Platforms (TRAD Deck or similar) supplied and erected by Frame UK.
All Floors & Roofs designed to Eurocode 5 + 10% Improvement
Unless stated otherwise, all External Wall U-Values (W/m2K) are based on external masonry cladding being used with a standard 50mm clear cavity.
NOTE: This quotation does not include costs for any steel Wind Frame or Portal Frames as we don't envisage any on this project. Should our Structural Engineer deem that Wind Frames and/or Portal Frames are necessary in order to provide racking resistance to the timber frame, then these will be subject to an Extra Over cost.

Timber Frame Specification and Scope of Works

The following Timber Frame Specification and Scope of Works has been identified and our price has been calculated based upon the following Drawings: 5188434-ATK-V1-00-PL-A-1100/P02, 5188434-ATK-V1-XX-EL-A-1400/P02
Prices quoted have been based on the drawings listed above. Any subsequent design changes may incur additional costs, which will be presented as a revised Quotation or Variation Order.
Any items not described within this Specification are to be supplied and fixed by Others.

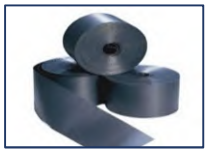
Foundations (by others)



Substructure	Foundations to client's groundwork engineer's design.
Base	Beam & Block/Concrete Slab
Dolly Course/Perimeter Upstand	Concrete Block (width to match soleplate, height to match floor finishes) – 7n compressive strength

Pad-stones
Frame UK will require that any Pad stone positions and depths to be within +/- 5mm tolerance to drawings supplied. Any Post/Beam support details that are separate to the slab must be at Ground level or slab level. Frame UK will not fix to pad stones below Ground Level, and have not allowed for materials suitable for use below Ground Level. Any non-shrink grouting below posts is the responsibility of the Client

Soleplates



DPC	225mm Visqueen Polythene below soleplates. Any alternative product / radon barrier / cavity tray requirements to be supplied and fitted by Client.
Soleplate	Single Ex 50mm x panel width.
Soleplate fixings	This project has been priced using shot fired ballistic nails, if for any reason this is altered due to engineering/Spec change this will be subject to a VO.

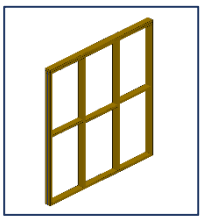
External Walls & Gable Panels — Open Panel - 140mm

Timber Framing	38mm x 140mm C16 treated CLS Softwood at max 600mm centres (38mm x 89mm to gables)
Stud Notification	Nylon tape fixed over stud locations for wall tie positions
Window & Door Apertures	Lintel sizes to our Structural Engineers Specification. Treated 38x50mm Cavity Battens
Breather Membrane	Reflective TF200 Thermo or similar (Plain Green to Spandrels)
External Sheathing	1 Layer only of 9.5mm OSB or similar
Insulation	Excluded
Vapour Control Layer	Excluded
Service Battens	Excluded

External Walls - Closed Panel	**140mm Thermo 'D' – U-Value 0.19 W/m²K**

Timber Framing	38mm x 140mm C16 treated CLS Softwood at max 600mm centres (38mm x 89mm to gables)
Stud Notification	Nylon tape fixed over stud locations for wall tie positions
Window & Door Apertures	Lintel sizes to our Structural Engineers Specification. Treated 38x50mm Cavity Battens
Breather Membrane	Reflective TF200 Thermo or similar (standard TF200 to Spandrels)
External Sheathing	1 Layer only of 9.5mm OSB or similar
Insulation	140mm 032 Mineral Wool or similar
Vapour Control Layer	Reflective VCL
Service Battens	38mm x 38mm C16 Vertical battens fixed to studs

Internal Walls (Loadbearing)

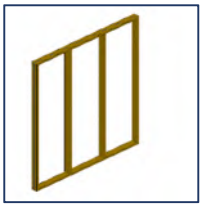


Timber Framing	38mm x 90mm C16 Treated CLS Softwood at max 600mm centres
Apertures	Lintels - Only to our Structural Engineers Specification
Intermediate noggins	38mm x 90mm C16 CLS Softwood only to our Structural Engineers Specification and at approximately 1200mm centres (only if required by Structural engineer).

Internal Walls (Racking)

Timber Framing	38mm x 90mm C16 Treated CLS Softwood at max 600mm centres
Sheathing	1 layer of 9.5mm OSB sheathing to one side only for racking purposes

Internal Walls (Non -Loadbearing)

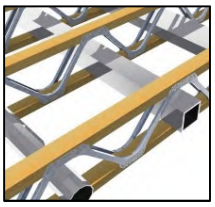


Timber Framing	38mm x 90mm C16 Treated CLS Softwood at max 600mm centres
Bulkhead / Stair Cupboards	Supplied loose for framing by others
Intermediate noggins	Not included

General Notes – Timber Frame Element

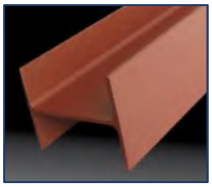
Stud centres	Maximum 600mm only. Double/cripple studs at point loads through building - Only to our Structural Engineers Specification. Closer centres will be subject to a Variation Order.
Standard wall heights	2.4m maximum (panels which are higher than this will be charged as an extra)
Steel supports	All steelwork required to hold up timber frame element, including all fixings are included within the Provisional Sum shown above if applicable. Where steel beams are required within the first floor joist or roof zone, although we will endeavour to keep these within the floor zone, they may protrude below the ceiling line. We have not allowed for any battens which may be needed in order to create a flush ceiling. All masonry supports are excluded. Only steels noted in "Specialist Steelwork" section have been allowed for.

Roof Construction (Untreated) **254mm Metal Web Joists at (Std) 600mm Centres**

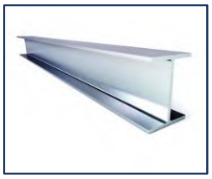


Trimmers	All openings required within floor platform to have beams installed. No allowance for Apron Linings.
Sub-Deck (Flats)	18mm T&G OSB3
Ring Beams	Softwood to perimeter and load-bearing walls (dependent on Design)
Wall Supports	Noggins between joists to support non-load-bearing walls (Only)
Floor Band	Sheathing supplied loose for site fixing by Frame UK.
Firings	Excluded.
Top Deck	Excluded.

Structural Supports



Timber Frame Supports Steel/Engineered Timber Support Beams, posts & columns to support the timber frame and roof structure inclusive of all connections & holding down bolts to columns/posts. Thermal couplings are excluded, and will be advised once full Engineering has been carried out.



Beams Steel Beams supplied Red Oxide Coated mild steel. Galvanised components can be supplied at extra cost. This option will extend the delivery time. Regardless of location or drawing details Galvanising/Fire treatment or any other deviation from Red Oxide coated has not been allowed for and will constitute a Variation of Order and will be for the Buyer's Account. It should be noted that this option will further extend the delivery /site erection schedule). Glulam Beams supplied unsanded & unprimed.

Engineered Timber Beams Beams for Structural use only. Supplied unprimed and unsanded.

Beams/Posts/Supports All specialist Beams/Posts/Supports identified as required at Quotation stage have been listed below. Any and all omissions or additions as required either through Structural Engineer, Clients request, or any other reason will be considered a Variation of Order and will be for Clients account.

Locations of Supports Roof Zone.

Supply Only Components

Service Noggins Loose timber used to brace the Timber Frame Structure during Construction will be left on Site for use by Others as service support noggins.

Fire Socks Supply only for fixing by Others as required (65mm Fire Socks - Masonry External skin only). Any variation to this will constitute a Variation of Order and be for the Buyers account).

Exclusions (NOT Exhaustive)	
• **DPC to Openings**	Excluded
• **Under Stair Walls**	Excluded
• **Decking Adhesive**	Removal of excess adhesive is excluded as this needs to cure before being removed.
• **Plasterboard Bearers**	Excluded
• **Non-shrink grouting**	Excluded to Soleplates and posts (**must** be carried out by Others)
• **Under Floor Heating**	We have not made any provision for under floor heating within our quotation.
• **Masonry Supports**	Excluded
• **Wall Ties**	Excluded
• **Line & Point Loads**	Excluded (Unless Specifically Requested)
• **HB353b Certificates**	Excluded
• **Expansion Joints**	Additional timbers are excluded
• **Service Holes of any description**	Excluded Prices to drill holes in our Factory can be provided on request prior to Timber Frame design works being completed
• **Roof Firings**	Excluded
• **Full time Crane Supervisor**	Excluded
• **Parapet Walls**	Insulation, Internal sheathing, and capping – Excluded
• **Supports for External Components**	Excluded. Items supported from our Timber Frame such as Brise Soleil, Juliet balconies, balustrades, street lamps etc. We have made no allowance for Engineering or supports for these items within our price. Please note that this list is not exhaustive. If required the support materials, Engineering, supply, and delivery will be extra to the contract and will be considered a Variation of Order and be for the Buyers account.
• **External Claddings**	Excluded
• **Insulation to Internal Load Bearing and Non-Loadbearing walls, floors, and roof**	Excluded
• **Plasterboard noggins to walls & ceilings**	Excluded

- **All external claddings, tile hanging, lead work (including lead valleys), flashing, finishes etc. are excluded unless detailed within our Quotation.**

Fire Mitigation	Category C2
Timber Frame	-Untreated C16 studwork
Sheathing	-12.5mm Fermacell in lieu of 9mm OSB
Joists	-FR Metal web joist treatment
Deck	-FR treatment
Roof Structure	-No Treatment
External Apertures	-Factory over-boarded

Erection Package (Shown as Extra Over)

- **Scope of Works** With the exception of those items identified as being on a supply only basis for fixing by others, all the elements referred to in the Specification and Scope of works will be fixed by the Site Installation team.
- **Contract Supervision** A Working Site Supervisor will be appointed from the installation team. The Frame UK Contracts Manager, who will be appointed to supply technical backup and site communication through-out Frame UK's Contract Works, will attend site periodically. This is dependent on the complexity of the project.
- **Site Attendance** Appointed Frame UK Contracts Manager to attend all reasonable sub-contractors meetings, trade co-ordination meetings, programme meetings & Health Safety Meetings as deemed necessary by the Main Contractor.
- **Crane** Client will be responsible for providing suitable hard standing and that can take the imposed loads on the crane's outriggers. Any access permits, public highway closures or permissions to over sail neighbouring properties is the Client's responsibility. The hiring of cranes and the duties of the Appointed Persons will be carried out by our Site Installation team. Any specific requirement for a Lift Supervisor will be charged as an extra over. We have allowed for up to a 40 Tonne Crane. Cranes of a larger size will be subject to additional charge to the Main Contractor. Non-standard Crane Mats required due to adverse site conditions will be charged as an extra. No allowance has been made for a full-time Crane Supervisor.
- **Fall Prevention System** Safety Deck System will be supplied and installed by the Site Installation Team for the duration of the Timber Frame installation if required. Internal Tower Scaffold to be supplied by Main Contractor / Client if required.
- **Road Closures** Road closures will be the responsibility of the Main Contractor/Client, and this should not delay erection progress on site, any delays to the delivery/erection due to late or unknown Road/site closures will be charged.
- **Bearers** Frame Homes UK supply bearers for transport purposes only, and these bearers must be returned with the vehicle, The Client/Main Contractor must make provision for sitting Timber frame materials on ground prior to erection, if Frame UK bearers are retained by the Client these will be charged out automatically at £10.00 per bearer.
- **Lifting Slings** Lifting slings are supplied with all Frame Homes panels, Floors, trusses, after these are single use straps and once the timber component has been put in place, the strap must be removed and rendered unusable, disposal of these straps is the responsibility of the client/main contractor.
- **Waste** Frame UK's manufacturing process ensures that nearly all waste materials are recycled prior to delivery of the Frame, however some materials generated by the erection of the Timber Frame structure, may include (But are not limited to), Timber, Plastic, Plasterboard, paper. This waste and its safe and legal removal is the responsibility of the Client/Main Contractor.
- **Erection Flow** We have allowed for a continuous flow of work in one visit. Charges will be levied for smaller numbers of units, or for breaks in erection.

Design and Engineering

The design of the structural timber frame is our responsibility only, and includes the preparation of structural calculations, manufacturing and site installation drawings.
We accept no responsibility for the design of any element of the building other than the structural timber frame. It is the responsibility of the Architect / Designer to ensure compliance with all elements of the Building Regulations.
Preliminary drawings will be issued to yourselves or your designated design team for prior approval of critical dimensions and details.
The following list is required for our designer to allow commencement of the design work. ***This information is required before the timber frame design can commence,*** and is required to be complete, and received by Frame UK at least 6 weeks prior to the first intended delivery date.

1. 1:100-Site Plan for crane/Transport positions/access
2. 1:50 - Fully dimensioned setting out drawings for each floor
3. 1:50 - Building sections showing heights and roof pitches
4. Window & Door Schedule providing us with Structural openings
5. 1:50 - Eaves and verge details
6. 1:50 - Details of floor constructions at upper and ground floor levels
7. 1:50 - Stair Details
8. Lift Details (where applicable)
9. Site layout drawings with annotated plot numbers
10. Elevation drawings clearly showing claddings
11. Any specific specialist details i.e. bay window setting out
12. Details of roof and coverings
13. Chimney and flue details (where applicable)
14. Detail of any particular service requirements which require structural modifications.
15. Soil and vent pipe positions

If any of the above criteria is unavailable then Frame UK Design Office can produce the details and requirements based on original information received. However, charges will be incurred and applied to your Account for this service, and will affect delivery dates.
The architectural drawings / design, together with the contract specifications must be frozen before commencement of the timber frame design work. Any alterations received after the Timber Frame design has commenced will have an effect on overall programme and could result in abortive costs.
Frame UK will supply 2 sets of Structural Calculations, and 2 sets of Assembly Drawings direct to the Main Contractor. A further 2 sets are sent to Site for Erectors use only. Additional copies of the above can be supplied for a Fee.

Structural Calculations

Structural Calculations (BS5268), Standard Construction Details and drawings for the timber frame will be issued to yourselves for inclusion with your submissions to Building Control.
Our Quotation is based on Structural Design Codes in BS5268. Should this Project require that design complies with Eurocode 5, then our price will need to be amended.
For Housing projects to be registered with NHBC, our Engineer will issue at an additional cost the HB353b form to the NHBC registered house builder.

Supply & Installation

Our Quotation is based on Supplying and Erecting (E.O.) a minimum of Two Units simultaneously and is based on a continuous Site Build programme unless noted otherwise. In circumstances out of Frame UK's control any interruptions to the Programme, or failure to achieve the minimum number of Units as stated above will incur a charge and may delay the Build Programme. We will not accept changes to Programme without 14 Days prior notice.

VAT: - Quotation figure is net, and exclusive of VAT which will be added at the rate of ruling at the time of invoice if applicable.

Main Contractors Discount: - Nil

Performance Bond: - No allowance

Retention: - Nil on this Contract

Liquidated Damages: -Claims for Liquidated Damages will not be accepted on this Contract.

Design Order Indemnity Fees: - Generally, 10% of the agreed Contract Sum.

Payment Terms

Staged Payments to be agreed at time of Order. For Limited Companies Terms will be subject to completion of Frame UK's Account Application Form and approval of Terms from our appointed Credit Rating Company. Credit Limits will be reviewed on a regular basis by Frame UK and the Credit Rating Company, and we reserve the right to amend the total limit at any time (including during the course of the Contract) at our absolute discretion.
Payments received by Credit Card will have a charge of 2½% added to the total value. There are no charges for Debit Card payments
Frame UK's expects to be paid for our work on time and will not be subject to performance of others and we will not accept set-offs.

Lead in Time

To be agreed by Frame UK and Main Contractor/ Client. Erection Period on Site to be agreed between Frame UK and Main Construction Programme. Confirmation of your delivery date will be issued on receipt of Official Order / Deposit, finalised drawings, Design Requirements (shown below), and a Design Freeze by the Architect / Building Designer.

Quotation Terms

- Quotation figure will be held for a period of 40 Days
- Frame UK have the right to review this Quotation figure if an Order is received after the 40 Day period has elapsed.
- Price is subject to Structural Engineers Design
- Price is subject to Frame UK's acceptance of Order Terms from the Main Contractor
- It is the Main Contractor's responsibility to ensure that the attached Specification is acceptable as we have priced the most cost-effective method of manufacture, and not necessarily what has been drawn or specified, or most efficient design for plaster-boarding.
- Frame UK have quoted in accordance with our understanding of the drawings submitted (and our interpretation of the most economical way of producing the Structure), it should be noted however that Frame UK will not be held responsible for any Errors or Omissions, and it is the responsibility of the Buyer /Main Contractor to question these prior to placing an order. Errors and omissions found after the placing of the order will be considered as a Variation of Order and costs will be added to the Buyer's account.
- Frame UK reserve the right to apply material and labour increases that occur as a result of delays in the start or delays in the contract duration or delays in the completion of the timber frame erection.
- Whilst every effort is made to ensure that our Quotation is as accurate as possible, there may be situations where Engineering shows that additional Racking Sheathing, closer Stud / Truss / Joist centres, or larger support beams are required, then a Variation of Order will be raised and charged to the Buyer's account.

Delivery

Unless otherwise stated we have not visited the site and are unable to comment on access at present so delivery will be in full consignments on 40ft articulated trailer loads. The provision of suitable access, temporary roads, hard standings adjacent to the works, traffic management and road closures are the responsibility of the Buyer. Transport access should be no more than Twenty Metres from the Building Foundation.

Delivery will be to the closest practical point or temporary surface suitable for these road vehicles and within workable reach of the crane.

There is a Two hours turnaround time allowed for once the vehicle has arrived at site, and in the event of this allocation being exceeded then a demurrage charge of £45 per Hour may be levied against the Buyer.

Arrangements for alternative sized vehicles can be made upon request and may incur additional costs.

Staircases

Frame UK advise that the ordering of Staircases should only be done following the taking of Site Dimensions. This is due to possible variations in floor finishes. Our price is based on the Architectural Drawings, and it is the responsibility of the Client / Architect that there is suitable clearance for the stairs to comply with Regulations

Miscellaneous

Manufacture

The Timber Frame will be manufactured in advance of an agreed installation programme and a **minimum of 14 Days' notice** is required to postpone manufacture. Any goods manufactured to meet a deferred delivery date will be loaded onto trailers, invoiced as materials off-site and held for stock under a vesting agreement. Trailers will be charged at £175.00 per Day.

Day Works

We will only carry out day works upon receipt of written instructions and appropriate official variation order.

Day Work Rates	**Materials & Plant**	Cost + 20%
	Labour	£35.00 per hour

General

Frame Homes (SW) Ltd T/as Frame UK reserve the right to substitute any of the following for equally suitable material according to availability.
All external claddings, tile hanging, lead work including lead valleys, flashing, finishes etc. are excluded unless detailed on this quotation.

Non-Timber Frame Construction

Materials relating to Non-Timber Frame Construction (i.e. garages, porches, utilities etc. when built in block work or similar) are excluded unless detailed on our Quotation.
With regards to the fixing of garage/porch/utility roof materials, when specified our price assumes that the walls will have been built for our workmen while on site, and no additional travelling will be involved. If supports are not in place, prior to Main Erection completion this will be done by the Buyer. Any special journey made after the Units have been completed by us will be charged as an extra.

Handover and Completion

On completion of our works Frame UK Contracts Department will invite the Client / Main Contractor to inspect the works and sign the Erection Checklist. This is to ensure that in the unlikely event that works have not been carried out as Contracted, rectification works can be carried out, or recorded before our erection team leaves site. Any work started by subsequent trades on our frames will be deemed to signify acceptance of the structure as erected in accordance with Clients/ Main Contractors specification.
Upon signature by Clients / Main Contractors representative confirming completion of works, full responsibility for the works, inclusive of all insurances will be passed to the Client / Main Contractor. If for any reason a signature is not obtained at handover of works Completion will be deemed to have taken place.
Under all circumstances full completion will be deemed to have taken place and therefore responsibility for works including all insurances will pass to client / Main Contractor if follow-on trades are allowed to commence work.
Frame UK are liable for our works only, however faults, alterations, negligence etc, by others to our works either prior to or after commencing their works, or prior to or after handover of building (s) will not be deemed to be our responsibility.

Material Sizes

All dimensions are quoted in millimetres unless stated otherwise.
Timber shown as sawn sizes before gauging (e.g. Ex 50mm x 150mm) are regularised from BS EN:336 basic sawn sizes in accordance with the requirements and tolerances of TRADA. Framing is to standard CLS stock sections (nominal sizes stated).

Timber Treatment

All Timber Frame Panels, Structural Timbers, Sole Plates, etc. supplied or manufactured in accordance with Frame UK Standard Calculations and Practices from Gauged Treated Timbers.
All cut ends on timber supplied in random lengths should be liberally treated after cutting with the solution provided.
Preservative treatment is by Wykamal KD-20 Double Vacuum or similar, to external wall components including soleplates. Treatment is provided to at least the requirements of the current NHBC recommendations.
Feature Beams, Feature Trusses, and Feature Posts are supplied with 1 coat of temporary finish only. We have not allowed for final finishing, On-site protection, or Final decoration of any Timbers (this is the responsibility of the Buyer). We will not be held responsible for Water or UV damage however caused.

Excess Materials

Generally, we supply excess of ancillary materials to ensure that no delays occur through shortages. Therefore, any surplus materials on site at completion of the construction remain the property of this Company and may be collected by us.

Substructure

Substructure should be constructed within the following tolerances:
Level + or – 5mm from datum point
Line/Length + or – 10mm overall
Diagonals + or – 5mm for diagonal up to 10m in length and + or – 10mm >10m in length
Where slabs/dolly blocks are outside the above tolerances additional charges will apply for packing, standing time, and delays to our programme. Any resulting delays will be added to our Build Programme. Grouting or dry packing between our Timber Frame Packers (if used) is excluded, but must be carried out by the Main Contractor.
Should the slab/dolly blocks be outside of the tolerances above Frame UK recommend that a structural grade, non-shrink mortar bed is laid in the soleplate positions to bring the levels within tolerance.
Slabs should be provided to enable us to carry out a "Pre-site start substructure check" a minimum of 5 working days prior to the soleplate delivery. Check lists are required to be signed by the client's site personnel. Failure of the client's site personnel to provide a signature or discrepancies between the soleplate Layout & Substructure or the Substructure exceeding the stated tolerances may lead to deliveries being delayed.

Insurance

£ 10,000,000	Employers Liability
£ 5,000,000	Public & Products Liability
£ 5,000,000	Professional Indemnity

Collateral Warranty

The provision of a Collateral Warranty will only become valid once the full Contract Payment has been received in full and receipted, and is subject to agreement, and acceptance of the Terms by our Insurers. Frame UK will not enter into any contract that requires a performance Bond or Parent Company Guarantee.

Construction Design Management 2015

CDM with HSE requires the Main Contractor to produce a Fire Risk Assessment for the Site. This should include the impact that a fire would have on surrounding properties. If additional Fire-Proofing components are required, then they will be priced as an Extra upon request. As of 1st April 2015 it is the Client's responsibility to ensure that a Construction Phase Health & Safety Plan is in place. Further details are available on the HSE Website

Integrated Management System

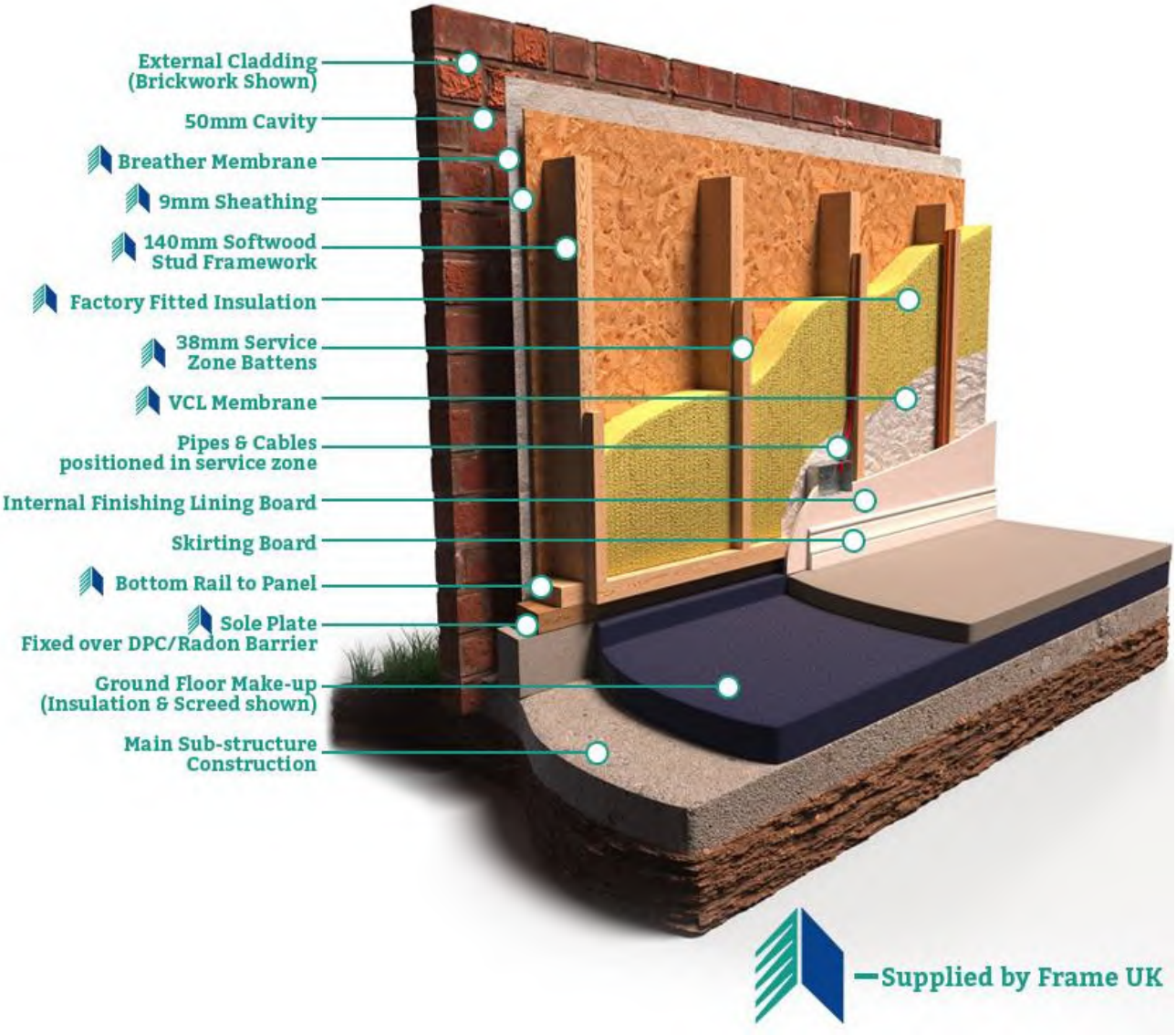
Frame UK have implemented an Integrated Management System, based on the requirements of BS EN ISO 9001:2008, BS EN ISO 14001:2004 and OHSAS 18001:2007.
Certification numbers 441278, 441278/E & 441278/H EAC Number 6/28. Authorised by Independent European Certification Ltd UKAS 054.
It also incorporates the requirements of the BM TRADA Chain of Custody Scheme for FSC® and PEFC; certificate numbers TT-COC-002034 and BMT-PEFC-0156

Attendances & Facilities to be supplied by the Principal Contractor / Client

The following attendances will be required to be provided and maintained by the Principal Contractor at all times for the duration of the Site Installation, free of charge and in a manner so as not to disrupt or restrict the regular progress of the work, and in compliance with Construction Design and Management (CDM) 2015 Regulations.

- **Access** – The provision of suitable access, traffic management, road closures and temporary roads to suit delivery vehicles.
- **Hard Standing** – Suitable hard standing and clear access to all sides of the structure to permit access for cranes etc to operate and free from obstruction such as overhead cables, power lines, trees and other similar obstructions.
- **Obstructions** – Area should be free of obstructions, and be available for the exclusive use of our Erection Team, during delivery and erection.
- **Site Security** – Provision of security (including security personnel) to safeguard the plant, equipment and goods and provide Secure, Lock fast container for tools and sundry materials.
- **Welfare** – First Aid and welfare facilities including drying facilities
- **Temporary Lighting** – All Temporary Lighting.
- **Scaffolding** – All Scaffolding, working platforms and any other items necessary for access, edge protection, emergency evacuation etc., which is required to meet with HSE statutory requirements including any alterations which may be required during the progress of the works. The external scaffolding must be erected prior to the delivery of the Goods. Before commencement of the erection service requirement to see a hand-over certificate for the element of the erected scaffold.
- **Skips** – Skips or the like placed immediately adjacent to and at the same level as the working area for the removal of rubbish and debris off site including tipping charges.
- **Protection** – Protection of the works where taken over by other trades or contractors or where Frame UK has left the site.
- **Temporary Power** - Generators and leads for temporary power on site for tools during the installation of the timber frame if required.

140mm THERMO PANEL - EXTERNAL WALL U-VALUES



	MASONRY CLADDING	LIGHTWEIGHT CLADDING		
Ref	**U Value W/m²K**	**U Value W/m²K**	**External Breather Membrane**	**Insulation**
A	**0.25**	**0.26**	Standard	140mm 040 MINERAL WOOL
B	**0.22**	**0.25**	TF200 Thermo	140mm 040 MINERAL WOOL
C	**0.20**	**0.23**	TF200 Thermo	140mm 035 MINERAL WOOL
D	**0.19**	**0.22**	TF200 Thermo	140mm 032 MINERAL WOOL
E	**0.18**	**0.20**	TF200 Thermo	100mm 022 RIGID PIR
F	**0.16**	**0.18**	TF200 Thermo	120mm 022 RIGID PIR

Truro Timber Frames
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E: info@trurotimberframe.com

16/07/2019

Dear Simon Thompson

RE: **TTF-19208** **Trewirgie Junior School**

Thank you for your recent enquiry and invitation to tender. It is with pleasure that we present a quotation for the design, manufacture, supply and erection of the timber frame for the above project.

The price below is based on the accompanying Scope of Works and Specifications. We can offer the sums of:	
Supply Only Timber Frame	**£21,447.34**
Timber Frame Erection of above	**£5,879.51**
Insulation to Perimeter Walls / Closed Panel	**£2,264.56**
Total	**£29,591.41**

This is a net figure and excludes VAT. This price is valid for 30 days from the date on the quotation and can be accepted at any time within this period.

In the pages following you will find our project Scope of Works/Specification document which provides details of what Truro Timber Frame are offering. We would also ask you to read and ensure that our interpretation of the job corresponds with your requirements. The above price is subject to Structural Engineers Design and our Standard Terms and Conditions.

We trust that you will find our quotation of interest and should you have any questions or require any further information please don't hesitate to get in touch.

Yours Sincerely,

Estimating, Truro Timber Frames Ltd.

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The quotation sums above are based on standard timber frame design. If the timber frame is not to be constructed in this way following receipt of full working drawings an amended quotation will be provided.

Specification

Design for Timber Frame

Sign off drawings for client/contractor approval
Sole Plate Layout Provided (foundations to be built to this layout). For an additional fee of £200.00/plot plus mileage, TTF can measure the foundations to ensure accuracy. This may have an impact on delivery time.
Erection Pack Provided if order comprises supply only package
Structural calculations (BS5268) and drawings for the timber frame provided for inclusion with your Building Control Submission. Line and Point Loads to be provided as required.
NHBC HB353B:Part D or equivalent to be charged as an extra. To be requested by client at design stage.

Connections to Foundations

Foundations (by others)	Beam and block or slab with block up stand a min 7N/m2 as base for timber soleplates.
DPC	600mm Polythene below soleplates.
Soleplate	Single Ex 50mm x panel width.
Soleplate Fixing	Shot fired nails or alternative specified by Structural Engineer.

Connections to Existing (if applicable)

DPC	600mm Polythene below soleplates.
Poleplate	Single Ex 50mm x panel width.
Poleplate Fixing	M12x100mm Thunderbolt @ 300mm centres or alternative to Structural Engineer spec.

External Walls (Open Panel) & Gable Panels

External Wall Frame	Ex 50mmx150mm CLS Softwood C16 HVA1 treated at max 600mm c/c
Gable Panel Frame	Ex 50mmx150mm CLS Softwood C16 HVA1 treated at max 600mm c/c
Structural Openings	Lintel sizes to Structural Engineers Specification.
Struc. Opening Surrounds	50mmx38mm CLS Softwood C16 HVA1 treated
Sheathing	9mm OSB3
Breather membrane	Reflective Breather Membrane
Stud identification	Nylon tape over stud locations

Party Walls

Party Wall Frame	Ex 50mmx100mm CLS Softwood C16 HVA1 treated at max 600mm c/c
Noggins	Structural Engineers Specification only
Sheeting	9.5mm OSB only as per Structural Engineers requirements.
Fire barrier	Rockfil Fire & Smoke barrier at Rafter level, Fire socks (supplied only)
Party Wall Straps	Party wall straps max 50mm cavity.
Cavity Insulation	50mm Mineral Wool

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Internal Walls - Partitions, Load Bearing, Racking

Internal Wall Frame	Ex 50mmx100mm CLS Softwood C16 HVA1 treated at max 600mm c/c
Lintels	Lintels only to Structural Engineers Specification
Intermediate noggins	Ex 50mmx100mm CLS Softwood C16 HVA1 treated to Structural Spec Only
Sheathing	9mm OSB for racking only to Structural Engineers Specification Only

Intermediate Floors (if applicable)		
Joist system	Solid Timber	x
	Metal Web Joists	✓
	I-Beam	x
Joist centres (Std)	600mm c/c	✓
	400mm c/c	x
Trimmers	All openings required within floor platform to have beams.	x
	Apron Linings	x
Decking	T&G Ply Deck	✓
	Chipboard Peel Clean	x
Ring Beams	CLS Softwood C16 HVA1 to perimeter and load-bearing walls	x
Floor Cassettes	Prefabricated for crane installation	x
Wall Supports	Noggins between joists to support non-load-bearing walls (Only)	x
Half landings	Noggins between joists to support non-load-bearing walls (Only)	x
VCL	500 gague Polythene to wrap joist ends	✓

Roof Construction		
Standard Trusses		x
Attic Trusses		x
Raised Tie Truss (max rise 600mm up to 6m span / 450mm up to 8m)		x
Cut Roof		x
Steel Ridge		x
Glulam Ridge		x
Flat / Mono Pitched Roof with ply deck		✓
Solid Timber		x
Metal Web joists		✓
600mm c/c		✓
400mm c/c		x
Firring Strips/Deck to fall		x
Parapets	Max 300mm Ex 50mmx100mm CLS, OSB and breather membrane	x
Valley Boards	Plywood Decking	x
Roof Seperation	Roof Separation will be continued within the roof space Ex 50mmx100mm CLS Softwood C16 HVA1 treated studs fully sheathed.	x

Note; Porch to be supplied by others if applicable

Note; Balcony to be supplied by others if applicable

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General Notes – Timber Frame Element

Stud centres	600mm only. Closer stud centres will be subject to a Variation Order. Double/cripple studs at point loads to Structural Engineers Specification.
Steel supports	All Steelwork required to hold up timber frame element including all fixings are provisionally specified. Where Steel beams are required within the First Floor Joist or Roof Zone, although we will endeavour to keep these within the floor zone they may protrude below the ceiling line, we have not allowed for any battens which may be needed to create a flush ceiling. All Masonry supports are excluded.
Services entry/exit	Prices excludes any protrusions for service entry/exit.
Supports or External Components	Items supported from our Timber Frame such as juliet balconies, bay windows, porches, ballustrades, brise soleil, street lamps etc. We have made no allowance for these items nor the Engineering or supports for these items within our price. Please note that this list is not exhaustive, if required the support materials, engineering, supply, and delivery will be extra to the contract and will be considered a Variation Order.
Stairwell Openings	Temporary working platforms are installed by Truro Timber Frame if required and left for later removal and disposal by others.

Roof General	TR26 Grade Timber sized to Structural Engineers Specification. Noggins between trusses to support heads of internal walls only. Eaves & Verge Overhang maximum of 400mm from outside face of timber frame. Truss Tails left over length for trimming to suit fascia by others Felt/Roof Membrane Not Included. Roof Batten Not Included.

Exclusions (not exhaustive)

Service Battens	Abutment Panels	Porch
Service Noggins	Chimney supports	Balcony
External Finishes Batten	Chimney trimming	Pergola
Plasterboard Bearers	Chimney Stack	Bay Windows
Balustrading	Feature Timbers (unless stated)	Fall Arrest
DPC to Openings	Suspended ceilings	Fall Prevention
Masonry Supports	External Claddings	Under Stairs Walls
Wall Ties	Loft Hatch trimming	Service Holes
Eaves Ventilation	Plasterboard noggins to walls & ceilings	

External Finishes

All external claddings, lead work (including lead valleys, tile hanging, flashing, finishes etc.

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Specialist Steelwork (Provisional Cost Sum - included if applicable)

Timber Frame Supports	Steel Support Beams, Posts & Columns inclusive of all connections and holding down bolts to Structural Engineers Specification.
Beams	Beams supplied Red Oxide Coated Mild Steel. Galvanising/Fire treatment or any alternative can be supplied at extra cost. This option may extend the delivery time and have an impact on delivery and site erection time and cost.
Beams/Posts/Supports	All specialist Beams/Posts/Supports identified as required at Quotation stage have been included. Any and all omissions, additions or changes as required either through Structural Engineer, Clients request, or any other reason will be considered a Variation Order.
Rates	Steel prices are based upon todays prices, orders are accepted on the understanding that steel rates may be different at point of order and a variation to reflect this may be necessary.
Locations of Steels	Masonry supports to be by the main contractor.

Fascia and Soffit		
Fascia	White uPVC 250mm max	**x**
Barge	White uPVC 250mm max (if applicable	**x**
Soffit	White uPVC 300mm max (if applicable	**x**
Insulated External Wall Closed Panel to 0.20w/m2k u Value (0.21w/m2k without Blockwork)		
Masonry Outer Skin	100mm Blockwork with 50mm cavity (by others)	**x**
Insulation	140mm Mineral Wool	✓
VCL	Reflective VCL	✓
Joints	Reflective VCL Tape	✓
Service Zone	38mm x 50mm Batten	✓
Insulated Party Wall Closed Panel to 0.20w/m2k u Value (if applicable)		
Insulation	90mm Mineral Wool Batt to studzone, 50mm Mineral Wool to Cavity	✓
VCL	500g Polythene	✓
Joints	VCL Tape	✓
Service Zone	38mm x 50mm Batten	**x**

Note. Roof seperation panels fully insulated in vaulted areas, to above insulation level in cold roof spaces only. Insulation allowed in habitable spaces only.

ERECTION

Scope of Works

All the elements referred to in the Specification and Scope of Works will be fixed by the Site Installation Team, with the exception of those items identified as being on a supply only basis for fixing by others.

Contract Supervision

A Working Site Supervisor will be appointed from the installation team. Truro Timber Frame will appoint a Contracts Manager to supply technical backup and site communication and visits where necessary throughout the contract.

Erection Programme

We have allowed for a continuous flow of work in one visit. Charges will be levied for breaks in erection caused by the Client/Main Contractor.

Crane

It is the responsibly of the Client/Main Contractor to provide suitable hard standing that can take the imposed loads on the crane's outriggers. Any access permits, public highway closures or permissions to over sail neighbouring properties is also the Client/Main Contractor responsibility. The hiring of cranes and the duties of the Appointed Persons and Lift Supervision will be carried out by our Site Installation Team. Within our erection price we have allowed for a Crane up to 40 Tonnes where necessary and if site limitations allow. Cranes any larger will be subject to additional charges. Non-standard Crane Mats required due to adverse site conditions will be charged as an extra.

Scaffolding

No scaffold or access towers are allowed for and remains the responsibility of the main contractor/ customer to provide as appropriate.

Waste

Truro Timber Frame will gererate some waste during the erection period. It is the responsibility of the client to dispose of appropriately.

Fall Prevention

A crash deck will be supplied and installed to stairwell openings by the Site Installation Team for the duration of the Timber Frame installation. Any other fall prevention system to be supplied by Main Contractor / Client if required.

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General

The quotation sum overleaf and Timber Frame Scope of Works/Specification to follow have been produced based upon the drawings provided at the time of quoting. Any changes to the design may incur price adjustments. Any such changes will be presented to the client as either a revised Quotation or Variation Order depending on the point in the contract when the change is formalised.

Any changes to design may also have an impact on delivery dates.

It is our responsibility to design the structural timber frame only, and includes the preparation of structural calculations, manufacturing and site installation drawings. It is the responsibility of your Architect / Designer to ensure compliance with all elements of Building Regulations, Planning etc.

We reserve the right to change our specifications with like for like materials should this prove necessary.

Fire Prevention

No allowance has currently been made for incorporating any measures relative to the issue of fire spread inside or outside the site boundary during construction.

Delivery Supply only contracts include delivery for offloading by others.

Insurance Truro Timber Frame will satisfy reasonable sub-contract requirements with respect to employers and public liability insurance. All other risks including contractors 'all-risk' policy must be provided by Client/Main Contractor.

Payment Terms for Supply Only:	Payable on order	70%
	Payable on first delivery	30%
Payment Terms for Supply and Erect:	Payable on order	50%
	Payable on first delivery	40%
	Payable on signed off completion	10%
Payment Terms for Insulation / Closed Panel:	As above	
Payment Terms for Variations/Extras:	Payable on Acceptance	100%

* The above terms may be adaptable by separate negotiation.

Invoicing: Invoices are sent via email. Payment strictly by BACS.

Lead Time: Approx. 15 Weeks from Order Payment Cleared Funds

Appendix G. Roof Specification

- Alumasc Specmaster – Euroroof Mono.
- Alumasc approved contractor list.

ALUMASC
ROOFING SYSTEMS

Proposed Roofing Specification

Project:
New Classroom Block - Trewirgie Junior School

Project ID: SP103041-S1
Date: 24/09/2019

Tel: 03335 771 500
email: technical@alumascroofing.com
web: www.alumascroofing.co.uk




Contents

This specification is based on the use of Euroroof Mono, a polyester reinforced, SBS modified bitumen membrane which offers all the benefits of high performance membrane combined with single-layer application.

Euroroof Mono is the subject of BBA Certificate 16/5361, and its manufacture is registered to ISO 14001.

The Euroroof range is only supplied to registered contractors, whose contracts managers and operatives must undergo a stringent training programme at Alumasc's head office, prior to obtaining registered status. The quality of workmanship is monitored on-site on an ongoing basis to ensure compliance with the warranty and current codes of practice.

Alumasc Exterior Building Products Ltd is registered as a Firm of Assessed Capability, in accordance with BSI Quality Assurance Standard BS EN ISO 9001 – Registration Numbers Q06401 and FM35898.

System Warranty

The above specification/s shall be installed in accordance with the appropriate sections of all current relevant codes of practice, Building Regulations, and manufacturer's installation instructions for product supplied by the company. The works shall be installed by an Alumasc Registered Contractor, and, as agreed in the contract, the Alumasc Certificate of a 20 Year System Warranty shall be issued to the Building Owner from the date of final completion.

This warranty assures the building owner that, in the event that the roof fails to remain watertight as a consequence of latent defect in products supplied by Alumasc, details designed by Alumasc or faulty workmanship of the Alumasc Registered Contractor, Alumasc undertakes to reinstate the waterproof integrity of the roof.

This warranty is conditional upon the full system being purchased from Alumasc and installed in accordance with the above specification. Substitution of any products, or installation by means other than those described, will invalidate the warranty offered.

The warranty offered is subject to the prevailing terms and conditions, available upon request.

Project Information

Project:	New Classroom Block - Trewirgie Junior School
Location:	Newquay
Area 1:	Main Roof
Project ID:	SP103041-S1
Prepared for:	Faithful & Gould
Contact:	Simon Thompson
E-mail:	simon.thompson@fgould.com
Issue Date:	24/09/2019

Project Contacts

Author:	Greg Bourne
Telephone:	07720 883 632
E-Mail:	bourneg@alumasc-exteriors.co.uk

Technical Design Department

Address:	Head Office Alumasc Exterior Building Products Ltd White House Works, Bold Road Sutton, St Helens Merseyside WA9 4JG
Telephone:	01744 648 400
E-Mail:	technical@alumascroofing.com

Customer Services Advisor

Contact:	Pam Palmer
Telephone:	01744 648 419
E-Mail:	sales@alumasc-exteriors.co.uk

Project Summary

AREA 1

Project Information	
Building Type:	EDUCATIONAL
Roof Name	Main Roof
Roof Size (m2)	200
Slope	MIN. 1:80
Height (Metres)	3
Exposure	LOW
Core Sample	No Core Taken

Schedule of Products

EUROROOF SA PRIMER
EUROROOF SELF-ADHESIVE VAPOUR CONTROL LAYER
130mm ALUMASC GTF POLYISOCYANURATE
EUROROOF PU INSULATION ADHESIVE
EUROROOF MONO CAP SHEET
EUROROOF PU MEMBRANE ADHESIVE
EUROROOF MASTERGOLD UNDERLAY
EUROROOF MASTERGOLD CAP SHEET
ALUMASC BITUMEN PRIMER
Safe2Torch FF Underlay: EUROROOF SELF-ADHESIVE UNDERLAY
Safe2Torch FF Cap Sheet: EUROROOF SELF-ADHESIVE CAP SHEET
ALUMASC ANGLE FILLETS
ALUMASC GRP TOPTRIM
DERBITECH HD POLYMER SEALANT
ALUMASC GUTTERS & DOWNPIPES
ROOF-PRO - PIPE & DUCT SUPPORTS
FREESTANDING GUARDRAIL SYSTEM
ROOF-PRO - CONDENSER UNIT SUPPORTS

Preliminaries

The details contained within this proposal are based on information available at the time of writing and/or the condition of the roof when the Alumasc Site Survey Report was undertaken. It covers the correct installation of Alumasc products and the preparation work necessary to provide a suitable substrate to receive the proposed works.

These proposals relate to the roof waterproofing area only. They do not include associated work to be carried out by other trades, which may be required to complete a satisfactory refurbishment.

A detailed method of work statement, design risk evaluation (Incl. RAMS), and programme of works should be agreed with the Alumasc registered contractor prior to commencement of the works.

Item	Description	Rate	Total
1.01	SAFETY - WORKING AT HEIGHT Employers and those in control of any work at height activity must assess the risk and put appropriate control measures in place by following a hierarchy of control measures such as making sure work is properly planned, supervised and carried out by competent people. This includes using the right type of equipment for working at height.		
1.02	FALL PROTECTION It is imperative that safe access, egress and fall protection is in place for the duration of the works and for the inspection and maintenance of the warranted Alumasc Roofing system throughout its life cycle.		
1.03	STORAGE Materials must be stored carefully undercover and raised clear of the ground, on a clean level surface, away from excessive heat. Bituminous rolls must be stored on end. Where applicable, insulation should be stored inside wherever possible. If outside storage is unavoidable, the shrink wrap packaging alone is not under any circumstances sufficient to provide adequate protection. Store all adhesives and liquid products in a temperature controlled space > 5°C. Self-Adhesive products are stored between 10°C and 20°C for 24h prior to use.		
1.04	LIFTING OF MATERIALS Safe and effective transport of materials to working level is to be determined by the registered contractor subject to on-site conditions and accessibility. Care must be taken when storing materials and equipment not to overload the deck or structure.		
1.05	PROTECTION As soon as an area of waterproofing has been completed it should be inspected upon notification of completion by the contractor. Completed areas should not be used as a building platform or as an access route by other trades. If unavoidable, appropriate protection must be provided for the duration of the construction period. Care should be taken not to mark or dent the works while laying any additional protection. Inspection and/or leak testing must take place following removal.		
1.06	FUTURE ACCESS Roofs accessed for regular maintenance of plant, or parts of the building, should be given consideration in providing a predetermined route to and from the entry point to minimise potential hazards.		

Item	Description	Rate	Total
1.07	SAFETY - FLAME-FREE In accordance with Alumasc policy and the NFRC Safe2Torch initiative, when a gas torch is to be used for drying, it is strictly the responsibility of the appointed contractor to assess the potential fire risks and identify flame-free zones. If torch-on products are specified, provision must be made for the use of flame-free products to encapsulate any combustible materials that may be present (whether visible or not). Alumasc will accept no liability for any loss, damage, or injury attributable to non-flame-free applications on or adjacent to combustible materials. Where potential risks are identified, the contractor must enforce a torch-free zone as dictated by their own insurers, however it is recommended that this should be no less than 900mm. Further information can be found on the NFRC Safe2Torch initiative via the following link: https://www.nfrc.co.uk/safe2torch		
1.08	SAFETY - FLAME-FREE SITES Where the site to be completely flame-free the use of a gas torch is not permitted at any stage of works. The specification materials and their installation method will reflect this requirement. Drying out of the roof surface where applicable must be completed using an E-dryer, or other suitable alternative flame-free method.		
1.09	SAFETY - USE OF TORCH Wherever a gas torch is employed, the contractor must observe the greater of a minimum one-hour fire watch, or the period dictated by their own insurers, after cessation of torching. Fire extinguishing equipment must be readily available, in accordance with Health and Safety legislation.		

Main Roof

Specification					
2.0	**Preparatory Works**				
Item	**Description**	**Qty**	**Unit**	**Rate**	**Total**
2.01	EXTENT OF WORKS Where the entire surface area is not being treated, precautions should be taken where possible to eliminate the possibility of water migration from adjacent areas. Install new timber separation kerb between the proposed refurbishment works and those areas which are not included. This should provide a minimum 150mm upstand above finished roof level. The new waterproofing is to be taken up and over the timber kerb, terminating a minimum 300mm onto the adjacent area and providing a 150mm overlap to the underlay, and a further 150mm overlap to the cap sheet.				
2.02	TIMBER DECK TO FALLS Install exterior grade plywood to BS EN 636-2, or Oriented strand board (OSB 3) to BS EN 300-OSB/3 in accordance with structural engineer's/principal designer's specification. Firrings are to be securely fixed to the joists to achieve a minimum finished fall of 1:80 in accordance with current codes of practice. The deck must be supported by joists/studs or noggins at all edges and at maximum 600mm centres with a minimum bearing for panel edges of 18mm. Fix using countersunk corrosion-resistant screws, or galvanised annular ring shanked nails, to provide a flush finish along all edges and intermediate supports and noggins, set back a minimum 8mm from the board edge. Panels should be laid to break joint i.e. with staggered short edge joints. Allowance should be made for expansion gaps in accordance with current codes of practice. After construction the deck should be sound, rigid, dry, level, and not allow rotation or flex at board edges. Tape all board joints where a bituminous vapour control layer is specified in accordance with current codes of practice.				
	Sub-total				

3.0	Substrate Preparation				
Item	**Description**	**Qty**	**Unit**	**Rate**	**Total**
3.01	PRIME SUBSTRATE All surfaces must be dry and clean of all contaminants. Do not apply if rainfall is imminent. Brush all loose dirt or debris and blow clear using dry air or industrial vacuum machine. Ensure all surfaces are dry. Prime the substrate with EUROROOF SA PRIMER by roller or brush at the specified coverage rate ensuring an even and full coat across the substrate, allow to touch dry. Only prime an area that can be subsequently covered in the same day. Typical coverage rate: 0.1-0.25kg/m² (250-100m² per 25kg unit) Coverage rates will vary according to the porosity of the surface.				
	Sub-total				

4.0	Vapour Control				
Item	**Description**	**Qty**	**Unit**	**Rate**	**Total**
4.01	VAPOUR BARRIER Install the EUROROOF SELF-ADHESIVE VAPOUR CONTROL LAYER to the primed substrate with 75mm side and 100mm end laps. Remove the release film and firmly pressure roll the surface and overlaps to achieve a continuous bond across the full width of the membrane. Ensure that the membrane is accurately aligned, including overlaps, before removing the release film, and that it does not move as the film is removed. Dress to form edge protection at all abutments, openings, parapets etc. to provide a minimum 50mm seal above the surface of the insulation. Where insulation is also to be installed to detail work, the vapour control layer is to be taken the full height of the upstand. All surfaces must be even and free from any irregularities that may compromise the bond. It is the responsibility of the appointed contractor to undertake adhesion tests to establish a full bond can be obtained to the primed substrate. Method statement available on request. Please contact Alumasc technical services for further guidance if the bond strength is unsatisfactory. Side laps are self-adhesive when subject to temperatures of >15º under normal conditions. However, in cold weather or if the lap has become contaminated, hot air equipment should be used to ensure the laps are fully sealed. End laps should be heat welded using hot-air equipment. If left exposed overnight both side and end laps must be heat welded to ensure they are fully sealed.				
	Sub-total				

5.0	Thermal Insulation				
Item	**Description**	**Qty**	**Unit**	**Rate**	**Total**
5.01	THERMAL INSULATION Ensure the surface to be bonded is dry, clean and free from all contaminants. Do not apply if rainfall is imminent. U-value target 0.18W/m²K Install 130mm ALUMASC GTF POLYISOCYANURATE thermal insulation, bonded in 10mm continuous parallel beads of EUROROOF PU INSULATION ADHESIVE at a rate of 4 beads per metre at 250mm centres for central areas (40m²/6kg can), and increasing to 6 beads per metre at 175mm centres for roof perimeters (28m²/6kg can). Coverage rates will vary depending on substrate conditions. All joints are to be close butted and staggered ensuring no gaps at abutments. Where multiple layers are required, the joints of the second layer are to be staggered with respect to the first layer, and all layers bonded as described above. Eliminate uneven surfaces to ensure positive contact between the insulation board and surface area. Firmly press the insulation into place to ensure full contact and adhesion. Timber edge protection is to be provided to the insulation at the eaves, verge, and changes in level etc. Timber should be of a reduced thickness to the adjacent insulation to avoid creating a step in the waterproofing. Minimum application temperature of PU adhesive 5°C.				
	Sub-total				

6.0	Cap Sheet				
Item	**Description**	**Qty**	**Unit**	**Rate**	**Total**
6.01	CAP SHEET Install the EUROROOF MONO CAP SHEET with 100mm side and 150mm end laps, bonded in 10mm continuous parallel beads of EUROROOF PU MEMBRANE ADHESIVE at a rate of 4 beads per metre at 250mm centres for central areas (30-35m²/6kg can), and 6 beads per metre at 175mm centres for roof perimeters/detail and exposed areas (25m²/6kg can). Coverage rates may vary depending on substrate conditions. All laps are to be torched using the Alumasc shoe burner torch, and pressure rolled simultaneously with a long handled 15kg lap roller. A minimum 5mm to 10mm continuous bead of bitumen must extrude from all laps. Excess compound at laps leave as continuous bead, do not spread or remove. Note: Where the site is completely flame-free the laps are to be hot air welded and pressure rolled. It is recommended that automatic welders are used for all field joints. Manual hand held welders should be ideally used for detailing and inaccessible areas only. - Always position the membrane starting from the lowest point. - Position the membrane sheets staggered, avoiding any overlaps against the fall. - Pre-cut the lower corner of the end of each roll at 45° where it will be overlapped by the end lap of the next roll. - Apply the second layer of membrane astride and over the first one (always in the same direction and approximately 1/4 of its length from the previous sheet). Flame-free installation techniques and/or materials must be used for at least 900mm from any combustible materials. NIGHT JOINTS Progress of the works will be such as to maintain the waterproof integrity of the roof/s. At the end of each working day, or earlier in the event of adverse weather, a night joint must be formed to seal off the completed (or part-completed) areas and prevent water ingress. All open laps and joints to be sealed in accordance with current codes of practice. PROTECTION Completed areas should not be used as a building platform or as an access route by other trades. If unavoidable, appropriate protection must be provided for the duration of the works. Care should be taken not to mark or dent the works while laying any additional protection. Inspection and/or leak testing must always take place after removal of such protection.				
	Sub-total				

7.0	BUR Detailing				
Item	**Description**	**Qty**	**Unit**	**Rate**	**Total**
7.01	DETAILING MEMBRANES All details are to be completed in accordance with Alumasc recommendations, prevailing standards, regulations and codes of practice. Execute all details in two layers to the primed substrate - the EUROROOF MASTERGOLD UNDERLAY and EUROROOF MASTERGOLD CAP SHEET, each to be fully bonded by torch application. Where overlaps or flashing pieces lap onto a mineral surfaced finish, warm and dress the granules into the pre-heated bitumen prior to sealing the overlap. All surfaces are to be primed with ALUMASC BITUMEN PRIMER. It is the responsibility of the appointed contractor to undertake their own site inspection to ensure that any potential fire hazards have been identified and that flame-free installation techniques and/or materials are used where applicable.				
7.02	FLAME-FREE DETAILING TO FLAMMABLE SUBSTRATES Execute all applicable details in two layers to the primed substrate - the EUROROOF SELF-ADHESIVE UNDERLAY fully bonded to the primed substrate, and EUROROOF SELF-ADHESIVE CAP SHEET fully bonded to the primed underlay. All laps are to be hot air welded and firmly pressure rolled. All surfaces must be even and free from any irregularities that may compromise the bond. It is the responsibility of the appointed contractor to undertake adhesion tests to establish a full bond is achieved to the primed substrate with S/A products. Please consult Alumasc technical services for further guidance if the bond strength is unsatisfactory. All surfaces are to be primed with EUROROOF SA PRIMER. It is the responsibility of the appointed contractor to undertake their own site inspection to ensure that any potential fire hazards have been identified and that flame-free installation techniques and/or materials are used where applicable.				
	Sub-total				

Item	Description	Qty	Unit	Rate	Total
7.03	VERTICAL DETAILING To all detail work install a 100x100mm reinforcing strip of DERBIGUM BLACK into the angle at all upstands. Overlap the main field cap sheet onto the reinforcing strip by the full 100mm. Install a final flashing piece of the cap sheet, fully bonded to the upstand and overlapping onto the main horizontal sheet area by a minimum of 100mm. Alternatively, install ALUMASC ANGLE FILLETS, 50x50mm, bedded in Alumasc PU Insulation Adhesive. In accordance with BS6229 Code of Practice for Flat Roofs, continuity of the waterproofing is to be maintained for a vertical height of 150mm above the finished roof level at all abutments. Alumasc cannot take responsibility in the event of water ingress over and above the termination of our waterproofing.				
7.04	CHECK KERB WITH GRP TRIM Install perimeter check kerb using treated timber to provide a minimum height of 50mm above the finished level of the waterproofing system. Splayed timber and/or angle fillets are required to provide a 45° chamfer to the inner face. Where applicable, raise the existing kerb height to achieve the above design requirement. Dress the specified waterproofing up and across the check kerb to the external edge. Install new ALUMASC GRP TOPTRIM to outer edge, fixed at 300mm centres over the first layer of waterproofing. All lengths should be close butt jointed. Apply a secondary layer of waterproofing to the primed trim, overlapping onto the underlying membrane by a minimum of 100mm. Seal between top edge of trim and waterproofing with DERBITECH HD POLYMER SEALANT. Depth of trim is to be confirmed by the appointed principal designer and/or contractor.				
7.05	WELTED DRIP TO EXTERNAL GUTTER Roof perimeter is to be completed by forming a welted drip. Where applicable, ensure treated timber edge protection is provided to the insulation. The thickness should be reduced compared with the adjacent insulation to avoid creating a step in the waterproofing. Install minimum 50mm x 25mm treated timber batten. Form a welted drip to the outer edge and fold neatly around a 6mm timber drip former, mechanically fastened to the drip batten. Use the tail of the membrane to provide a minimum 100mm overlap onto the underlying membrane.				
	Sub-total				

Item	Description	Qty	Unit	Rate	Total
7.06	PIPE PENETRATIONS Ensure the surface to be bonded is dry, clean and free from all contaminants. Prime all surfaces with the appropriate Alumasc primer. Dress the specified waterproofing up all pipe penetrations, ensuring separate flashings are formed. Stainless steel jubilee clip is to be placed around the waterproofing to the top edge of the flashing detail. Ensure that the continuity of the waterproof covering is maintained for a vertical height of 150mm above the finished roof level; extend the pipe/s where applicable. Protect the waterproofing with a proprietary metal apron and seal with DERBITECH HD POLYMER SEALANT.				
7.07	NEW GUTTERS/DOWNPIPES Install new Alumasc Gutters & Downpipes to all appropriate edges as directed by the client or principal designer. Specification of goods is to be provided under separate cover. Rainwater goods must be tested by the appointed contractor upon completion of the works prior to handover.				
	Sub-total				

8.0	**Accessories**				
Item	**Description**	**Qty**	**Unit**	**Rate**	**Total**
8.01	NON-PENETRATIVE SUPPORT SOLUTION Roof-Pro offers a range of pre-fabricated systems tailored to meet all project requirements to support Pipework Runs, Ductwork Runs, Cable Runs and Combined Services Runs. Standard and bespoke solutions are available to provide the most cost-effective and co-ordinated solution. Each support solution is designed to ensure maximum wind stability and effective load management. The requirements are to be finalised with the client and/or principal designer and confirmed under separate cover. Further details can be found via the following link: http://www.roof-pro.co.uk				
	Sub-total				

Item	Description	Qty	Unit	Rate	Total
8.02	GUARDRAIL The FREESTANDING GUARDRAIL SYSTEM by Roof-Pro is a non-penetrative edge protection solution that relies upon a proven counterbalance weight rather than a mechanical fastener to provide the requisite stability. Manufactured from galvanized steel tube, galvanised malleable cast iron fittings and recycled PVC counterweights. Components that are in contact with the roof finish are to be covered with a protective pad. Guardrail height set to 1100mm, with vertical supports at maximum 2.50m centres. Corners Form 90 degree corners using 2 No. purpose made swept bends cutting mid and top rails where necessary to form corners. End terminations Form end terminations using purpose made 'D' end section secured into weighted upright. Form end terminations using 2 No. wall flange securely fixed into masonry cutting mid and top rails where necessary to form end termination. Angles Form acute or obtuse angles using 2 No. variable angle corners cutting mid and top rails where necessary to form corner. Change in height Form changes in height using 4 No. 90 deg elbows cutting mid and top rails where necessary to form height change. Miscellaneous Coat all free cut ends of tubes using proprietary cold galvanising paint prior to fitting. All grub screws to be checked once installation is complete to ensure all fittings are secure.				
	Sub-total				

Item	Description	Qty	Unit	Rate	Total
8.03	NON-PENETRATIVE SUPPORT SOLUTION Roof-Pro offers a wide range of pre-fabricated condenser unit support frames to meet all project requirements. Product range is readily available in a number of standard sizes and designs. The PF range is complemented by smaller DX Units, as well as larger VRV and VRF systems. Standard and bespoke solutions are available to provide the most cost-effective and co-ordinated solution. Each support solution is designed to ensure maximum wind stability and effective load management. The requirements are to be finalised with the client and/or principal designer and confirmed under separate cover. Further details can be found via the following link: http://www.roof-pro.co.uk				
	Sub-total				

General Information

Health & Safety

It is strictly the contractor's responsibility to ensure that all works are executed in accordance with current health and safety legislation. Work at Height Regulations 2005. Guidance may be taken from HSE publication reference: HSG33 - Health and Safety in Roof Work; INDG284 - Working on roofs & INDG401 - Working at Height.

It is imperative that safe access, egress and fall protection is in place for the duration of the works, inspection and maintenance of the warranted Alumasc Roofing system throughout its life cycle.

Safety scaffolding, the location of rubbish skips, access ladders etc. should be agreed with the client and/or principal contractor and be in accordance with current Health and Safety regulations.

A COSHH assessment should be carried out for all materials used to adequately control exposure to substances hazardous to health. Keeping a copy of the safety data sheet is not a COSHH assessment.

Product and Material Safety Data Sheets are available for all relevant products supplied by Alumasc; available for downloaded from http://www.alumascroofing.co.uk.

Inspection

Site inspections will be made by Alumasc during the works to ensure that the installation is executed in accordance with the Alumasc warranty requirements and current codes of practice.

The contractor must contact Alumasc to arrange a final inspection upon completion of each stage of the works. It is strictly the responsibility of the contractor to notify Alumasc that a final inspection is required, and also to ensure that the inspection takes place prior to the application of any surfacing above the waterproof covering. Failure on either or both counts will jeopardise approval and/or warranty release.

Once the final inspection has been carried out, the warranty will be issued via the roofing contractor upon acceptable rectification of any snags as identified by Alumasc, or without undue delay should all be satisfactory.

All inspections and/or maintenance actions carried out at roof level must be in full compliance with the Work at Height Regulations 2005 Hierarchy of controls; Employers and those in control of any work at height activity must assess the risk and put appropriate control measures in place such as making sure work is properly planned, supervised and carried out by competent people. This includes using the right type of equipment for working at height.

Maintenance

It is recommended that all flat roofs be inspected at a minimum frequency of twice a year. Ideally, inspections should be carried out in spring and autumn accounting for the effects of annual extremes of weather. Inspection should also be carried out following works on the roof by other trades, or following installation of new roof equipment.

- ✓ Check exposed membrane for any signs of mechanical or chemical damage.
- ✓ Remove any unnecessary debris from the roof area (especially objects which could cause damage).
- ✓ Remove any blockages to outlet gratings/drainage points/gutters (e.g. leaves, litter, and sediment).
- ✓ Check soundness of pointing and any mastic sealants at terminations.
- ✓ Remove or repair disused or redundant roof mounted equipment.
- ✓ Inspect rooflights and other penetrations for any damage (e.g. cracks to glazing, missing vent tops), which could result in leakage and/or condensation.
- ✓ Check for any other building components for soundness (e.g. patent glazing, parapet walls etc.)
- ✓ Keep records of your inspections for future reference.

Further guidance can be taken from BS6229 Flat Roofs With Continuously Supported Coverings - Code of Practice.

General Information

- Prior to installation, the Alumasc project specification, associated drawings, and manufacturer's installation instructions for all materials should have been studied and understood, and must be followed. These proposals relate to the roof waterproofing area only. They do not include associated work to be carried out by other trades, which may be required to complete a satisfactory refurbishment.
- Installation may only be carried out by Alumasc registered operatives, who have sufficient training for each specialist system and awareness to work safely, under the direction of qualified supervisors. The contractor must ensure they have "trained & carded" operatives for the relevant Alumasc Waterproofing System prior it's commencement. Additionally, at least one carded and trained operative must be on site at all times during the installation.
- A physical inspection is required by the contractor to verify the condition of the roof prior to commencement of works. It is the contractor's sole responsibility to fully acquaint themselves with the extent of the works and the conditions under which they are to be executed. Any discrepancies found between the specification and/or site report provided are to be highlighted by the contractor to the contract administrator prior to installation.
- The contractor shall carry out the works in accordance with all statutory requirements. Should any detail arise where it is not clear how this can be achieved, the contractor is to seek advice and approval for all proposals from Alumasc before completing the works.
- The contractor must ensure that satisfactory aesthetic appearance of the completed works is achieved.
- The design must take account of all structural factors to ensure that the waterproof covering is able to accommodate the effect of movement to avoid stress or deformation under these conditions. It is the responsibility of the client and/or their appointed design professional to notify Alumasc accordingly if applicable so that appropriate measures can be considered.
- Where applicable, in accordance with current legislation provision is to be made for insulation to minimise the effects of thermal bridging e.g. roof/wall abutment etc. to be determined by the appointed design professional and/or Building Control.
- Unless otherwise calculated and/or notified the specification proposal will assume a wind load figure of no greater than 3.6 kN/m² for a fully bonded application and 2.4 kN/m² for a partially bonded application. Alumasc must to be notified where the wind load is known to exceed these parameters to confirm suitability.
- Where applicable, all roof services and plant, access walkways, platforms, pipes etc. are to be mounted on suitable support systems e.g. as supplied by Roof-Pro, providing at least 500mm clearance above the roof membrane, in order to facilitate access for future inspection/maintenance or repair.
- The waterproofing components' resistance to dead and imposed loading must be assessed to avoid failure of the component/and or reduction in performance. Where resistance is deemed inadequate, suitable measures to mitigate load intensity will need to be considered.
- The building owner or their appointed design professional must have satisfied themselves that the roof structure and deck are suitable to receive the dead load of the proposed specification.
- Where applicable, all work on fragile roofs must be carried out in accordance with current Health and Safety legislation, with specific reference to the Working at Height Regulations 2005, HSG33 Health & Safety in Roof Work and HSE Document INDG284: Working on Roofs. A risk assessment must be carried out by the relevant parties prior to any works being undertaken. The Health & Safety Executive should be contacted for further information if guidance on this matter is required.
- It is strictly the responsibility of the client and/or their appointed design professional to ensure compliance of the proposed specification with all relevant Building Regulations by consultation with Building Control. In the event of any doubt about the interpretation or application of the Building Regulations in relation to any particular new build or refurbishment works, clarification must be sought directly from Building Control.
- The substitution of any products (or installation by means other than those described) is strictly prohibited, unless agreed in writing, in advance, with Alumasc Exterior Building Products Ltd.
- Alumasc Exterior Building Products Ltd will not accept any liability arising from unauthorised variations or un-notified changes in circumstances relating to the application or performance of Alumasc products or systems. We reserve the right to make alterations in keeping with technical developments or improvements.

Project: Trewirgie Junior School, Redruth
Project ID: SP103041
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Appendix H. Rainwater Goods and Fascia

- Rainclear aluminium rainwater goods and fascia specification.
- Harmer flat roof outlet calculation.

Trewirgie Junior School, Redruth

H72 ALUMINIUM STRIP/SHEET COVERINGS/FLASHINGS

To be read with Preliminaries/General conditions.

TYPE(S) OF ALUMINIUM WORK

350 **FASCIA SYSTEM:**

- Drawing reference(s): 5188434-ATK-V1-XX-EL-A-1400
Manufacturer: Alumasc Roofing, White House Works, Bold Road, Sutton St Helens, Merseyside WA9 4JG
Distributor: Rainclear Systems
Email: Sales@rainclear.co.uk
Telephone: 01793 435393

Material/grade: 2mm thick aluminium
Shape: SF1 - 1 x Bent Fascia
Size: SF1/600 500mm - 600mm
Gauge: 2mm.
Finish/Colour: Polyester powder coated to BS 6496 as per Architects requirements
Accessories: Angles, closer pieces,
Other requirements: Main structure by others, contractor to site cut/trim as required and level and line through. Use low profile 5.5mm diameter stainless steel self-tapping screw fixings as recommended by **Alumasc Exterior Building Products Ltd.** insulation tape to be used between aluminium and steel. **(All insulation material to be supplied by others).**
Method of jointing: Union clip, Contractor to site slot all holes on site to allow for thermal expansion leave 4mm gap within joint for this purpose, use fixing screws/self-tappers as required at 600mm centres, seal all joints with silicone sealant e.g. Dow Corning 791 Low Modulus (Type A). Use touch up paint on all exposed screw heads.
Method of support/fixing: All fixings as listed above.

GENERAL REQUIREMENTS/PREPARATORY WORK

510 WORKMANSHIP GENERALLY:

- Comply generally with CP 143: Part 15 unless specified or agreed otherwise.
- Fabricate and fix aluminium coverings/flashings to provide a secure, free draining and completely weatherproof installation.
- Operatives must be trained in the application of aluminium coverings/flashings. Submit records of their experience to the CA on request.
- Measure, mark, cut and form aluminium prior to assembly wherever possible.
- Mark out aluminium with pencil, chalk or crayon. Do not use scribers or other sharp instruments without approval.
- Fold coverings/flashings with mechanical or manual presses to give straight, regular and tight bends, leaving panels free from ripples, kinks, buckling and cracks. Use hand tools only for folding details that cannot be pressed.
- Use in situ welding only with approval and subject to completion of a 'hot work permit' and compliance with its conditions.
- Aluminium surfaces to be embedded in concrete or mortar must be fully coated with high build bitumen-based paint, after folding.
- Fold under or remove any sharp metal edges as work proceeds.
- Do not use sealant in joints to attain waterproofing.
- Ensure that finished aluminium work is fully supported, adequately fixed to resist wind uplift but also

able to accommodate thermal movement without distortion or stress.
- Ensure that finished aluminium work is protected against staining, discolouration and damage by subsequent works.

535 INTEGRITY OF ALUMINIUM:

- Design aluminium coverings/flashings and methods of attachment to prevent loss of weatherproofing and permanent deformation due to wind pressure or suction.
- Calculate wind loads in accordance with BS 6399: Part 2.

555 LAYOUTS: Agree setting out of longitudinal and cross-joints with the CA before beginning work.

565 MOCK-UPS: At an agreed stage in detailed design work construct a mock-up as follows:
[One 1.25m length of Alumasc fascia and soffit as Alumasc`s detailed drawings.
Purpose(s) of mock-up:
To satisfy that factory manufactured components can accommodate site tolerances as accounted for at design stage.
Arrange for inspection to be carried out jointly with the CA. Obtain approval of appearance before proceeding. Retain mock-up in undisturbed condition until completion of aluminium installation.

R10 Rainwater Drainage Systems

2 To be read with Preliminaries/General conditions.

GENERAL

110 GRAVITY RAINWATER DRAINAGE SYSTEM.
Rainwater outlets: As per detail sections below
Gutters: As per detail sections below
Pipework: As per detail sections below
Accessories outlets: As per detail sections below

SYSTEM PERFORMANCE

210 DESIGN
Design:Complete the design of the rainwater drainage system
Standard:To BSEN12056-3:2000,clauses 3-7 and National Annexes
Proposals: Submit Drawings, technical information, calculations and manufacture's literature.

221 COLLECTION AND DISTRIBUTION OF RAINWATER
General: Complete, and without leakage or noise nuisance

230 DESIGN PARAMETERS - GENERAL
Roof and gutter construction and finish: As per detail sections below
Design Rate of rainfall: As per BSEN12056-3:2000, National Annex
NB.2 - Category 1
Available capacity of existing below ground drainage (maximum):
TBC

PRODUCTS

315 RAINCLEAR SYSTEMS EXTRUDED ALUMINIUM GUTTERS BS 8530

Gutters and fittings to: ISO 9001: 2008
Manufacturer: Alumasc Roofing, White House Works, Bold Road, Sutton St Helens, Merseyside WA9 4JG
Distributor: Rainclear Systems/Alumasc Roofing
Email: Sales@rainclear.co.uk
Telephone: 01793435393

Reference: AX Extruded Aluminium
Profile: Half Round
Size: 125mm AX BHR
Outlet Size: 76 mm
Type / grade: Made from LM2 and LM6 grades of Aluminium alloy to BSEN1559:1997, BSEN 1676:1997 and BSEN 1706:1998
Finish: Polyester powder coated to BS EN 12206-1:2004
Colour: RAL 9017M Black
Jointing: Gutter lengths, or fittings are overlapped at the joint with a spigot and socket. Slots are provided for fixing using M6 mushroom head aluminium screws with nuts and washers. Seal evenly across the joints with Dow Corning 791.
Fixing: Fascia bracket fixed at 915mm centres and at each fitting using number 12x38mm round head twin thread screws and washers bright zinc plated. Moulded may be direct fixed using countersunk number 12x38mm twin thread screws and washers bright zinc plated gutter screws at 600mm centres.
Finish: Polyester powder coated to BS EN 12206-1:2004
Colour: RAL 9017M Black

380 RAINCLEAR SYSTEMS EXTRUDED ALUMINIUM PIPEWORK FOR EXTERNAL USE:

Pipes, fittings and accessories: To ISO 9001: 2008
Manufacturer: Rainclear Systems
Tel: 01793435393 Fax: 01793522471
Email: sales@rainclear.co.uk
Reference: SW30 Swaged Aluminium Downpipe
Accessories: Bends, Branches, Access Pipes, 2 Piece Offset, Shoes, Rainwater Head, Pipe Clips.
Size: 76mm diameter
Type / grade: 6063 TF alloy
Fixing: Pipe clip fixed at maximum 2.0m centres. Plug and screw to wall with number 12 x 50mm round head twin thread screws and washers bright zinc plated to BS 1706:1960 Class ZN3. Seal internal spigot joints with Dow corning 791 silicone sealant allowing for a 3-4 mm vertical thermal movement gap.

EXECUTION

600 **PREPARATION specified in this section, ensure that:**

- 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 **INSTALLATION 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 Aluminium 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, sherardized, galvanized 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 50 mm 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

900 **TESTING GENERALLY:**
- Inform CA 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 CA.

905 **INTERNAL PIPEWORK TEST - ENGLAND, WALES AND NORTHERN IRELAND:**
- 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 38 mm.

- Allow a period for temperature stabilization, after which the pressure of 38 mm is to be maintained without loss for not less than 3 minutes.

906 **INTERNAL PIPEWORK TEST- SCOTLAND**

- Standard – To BSEN12056-3:2000, National Annex NG

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.

Harmer Flat Roof Outlet Calculator - BS EN 12056-3: 2000

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Project:	Trewirgie Junior School, Falmouth Rd,
Ref:	Redruth, TR15 2QN
Designer:	RC\LouiseMcComb
Company:	
Tel:	
e-mail:	

Outlet	CALC 1
Rainfall - BS EN 12056	
Town	Truro
Category	Cat 3
Rainfall Intensity (l/s/m²)	0.049
Catchment Area	
Roof Length (m)	0
Roof Width(m)	0
Roof Area(m²)	193
Roof Slope	> 1 in 80
Outlet	
Outlet Range	AV300
Outlet Dia. (mm)	75mm Dia
Number of outlets)	2
Sump Depth (mm)	none
Results	
Outlet Achieved Flow(l/s)	5
Required Flow (l/s)	4.7
	Pass

Notes:

1) All results are based upon a water depth of 35mm.
2) Ensure that outlets are positioned to keep water depths reasonable.
3) Harmer outlets may perform better than the figures suggest; these are limited by the 33% downpipe filling rule.
4) Aluminium Roof Outlets are not suitable for use in conjunction with copper roofs.

Appendix I. K-Rend TC-15 Specification

K Rend
Silicone Coloured Renders

The following boards are the most popular boards which are approved as carriers for our render.

Board Name	Supplier
Aquapanel Exterior	Knauf
Baseboard 10	Resistant
Magply	IPP
Multi-rend	Resistant
SQ Renderboard	Screwfix

Other boards are also approved; please contact K Rend for further details.

System Requirements

1 – The background should be stable.
2 – The overall system is designed to accommodate building movement
3 – The board should be fixed according to the manufacturer's instructions.

Board Requirements

The basic requirements for a board to be considered as a suitable carrier for K Rend render systems are good dimensional stability and good adhesive strength.
The onus is on the board supplier to determine if their board is a suitable carrier for a K Rend render system.

Rendering Requirements

The applicator must seek a job specific specification for using the render system prior to application of render.

Issue date - May 2018
(When using this list it is recommended that K Rend are contacted to ensure that this is the most up to date version.)

Specification

Ref: KR50 - 60

Summary: Silicone TC15 onto Cement Particle Board – HP12

JOB DESCRIPTION

SPECIFICATION CLAUSE: M20 - PLASTERED / RENDERED / ROUGHCAST COATINGS

To be read with Preliminaries/General Conditions.

160 Proprietary Cement Gauged Render

- **Substrate:** High Quality Cement Particle Board

- **Manufacturer:** Kilwaughter Minerals Ltd.
  9 Starbog Rd, Larne, Co. Antrim, N. Ireland, BT40 2TJ
  Tel: 028 2826 0766
  Fax: 028 2826 0136
  www.K-Rend.co.uk

- **Undercoat:** K Rend HP12 Base

  Thickness: 6mm
  Whilst the basecoat is still wet K Rend alkali resistant reinforcing mesh is embedded into the top third of the basecoat.

  Rule to line and level. Leave with a float finish. Allow to cure for a minimum of 14 days.

- **Primer:** K Rend Primer TC
  Applied by brush or roller. Allow to cure for a minimum of 24 hours prior to application of final finish coat.

- **Final Coat:** K Rend Silicone TC15 applied by hand.

  Thickness: 1.5mm

  Colour: Selected by Specifier

  Finish: Fine textured

- **Total Thickness:** 8mm

K Rend HP12 Base and K Rend Silicone TC15 should be applied strictly in accordance with the manufacturer's instructions and specifications and the relevant sections of BS EN 13914-1:2016. Further guidance is available in the British Board of Agrément, Certificate No. 97/3428 and the National Standards Authority of Ireland (NSAI), Agrément, Certificate No. 06/0248.

IF THESE INSTRUCTIONS ARE NOT FOLLOWED CLOSELY, A SATISFACTORY FINISH MAY NOT BE ACHIEVED AND KILWAUGHTER MINERALS LTD WILL ACCEPT NO RESPONSIBILITY.

This specification is valid for 6 months from date of issue. Thereafter details should be re-checked with Kilwaughter Minerals Ltd.

DESIGN CONSIDERATIONS

New construction to be rendered should be designed and constructed in accordance with the relevant recommendations of BS EN 13914-1:2016.

Render should only be applied to mature, stable surfaces. New walls to be rendered should be left as long as possible to minimise substrate movement (typically 28 days).

Increased thicknesses may be required in exposed or coastal locations – full details are available from Kilwaughter Minerals Ltd. Window saches should open freely & be finished with good aesthetic margins to all frames. Where existing return reveal areas are evaluated tight with additional coats of render to follow. Existing render should be removed at isolated return reveals only.

In order to achieve the best finish K Bead PVC Angle, Stop, Bellcast, Drip and Expansion beads should be used. The K Bead range is available with all K Rend products from Kilwaughter Minerals Ltd. Movement beads should be installed at a maximum of every 7 x 7 Metre perimeters – advice about movement joints to be detailed by the site engineer.

Render must not be applied to horizontal or sloping surfaces. Rendering should not be continued over movement joints, damp-proof courses, weep holes or air vents.

An adequate flashing must always be provided to prevent water penetrating behind the render.

Suitably designed overhangs and flashings should be provided to prevent water washing onto the façade. A generous overhang or eave should be designed, and all sills and copings should have sufficient drips, including mortar joints at coping. Gutters and down-pipes must also be designed to keep water off the façade; temporary guttering and down-pipes may be required to help keep the surface as dry as possible.

In order to minimise damage to the rendering, consideration should be given to installing fixings for rainwater, soil and vent pipes before rendering commences. The pipes themselves should be fitted after rendering is completed. Fixings should be made of stainless steel to minimise the risk of corrosion.

Independent scaffolding should be used to minimise scaffold ties and avoid the need to repair plug holes. Sufficient height and clearance should be allowed to enable satisfactory completion of the rendered finish.

Some construction materials may be susceptible to alkali attack. Fittings and adjacent surfaces that are likely to be damaged during rendering should be protected.

A plinth is recommended at Dpc level to provide a splashback and minimise colour issues at ground level.

It is advised that a project visit is carried out at least one week in advance of render application start date, evaluating any preparation issues.

BACKGROUND AND PREPARATION

High quality K Rend approved cement particle board only. The boards should be fitted in accordance with manufacturer's instructions.

The background should be assessed to ensure that it is suitable to receive the K Rend render system. It should also be checked for line and level to decide if the render can be applied in a uniform thickness or if dubbing out is required.

Any structural cracking in the background should be brought to the attention of a structural engineer and stabilised prior to rendering.

All necessary repairs must be carried out before application. All damage to substrate from salt attack, corrosion or salts must be carefully prepared. Damaged blocks must be replaced and any holes or insufficiently filled joints repaired. Additional Rend alkali resistant reinforcing mesh to be used at these areas.

It is recommended that K Rend alkali resistant reinforcing mesh is used in areas likely to suffer from stress cracking. This can be done by applying K Rend HP12 Base, bedding mesh into it whilst it is still wet and leaving the HP12 Base with a light scratch prior to setting. K Rend alkali resistant reinforcing mesh is available with all K Rend products from Kilwaughter Minerals Ltd.

The surface must be clean and free from any loose or friable material including paint, oil, soot, lichens and dust. If there is any algae present it should be treated with a proprietary fungicidal wash or surface biocide (i.e. Algae Clean) and then pressure washed to remove any residue. Biocide supplier's instructions to be followed.

The product should not be applied to frost bound walls.

Apply suction control as necessary; it may be necessary to damp down walls prior to applying the product to control suction. Rendering should not be applied to walls which have been subject to rain over several hours.

Areas with poor key, such as smooth concrete lintels, should be given a preparatory stipple coat of HPX Base or HP12 Base.

PRODUCT

K Rend HP12 Base (a high polymer, cost effective, enhanced performance basecoat).

K Rend Primer TC (synthetic resin primer for K Rend thin coat finishes).

Colour as selected by the Specifier (colour co-ordinated with finish coat).

K Rend Silicone TC15 (thin coat synthetic resin plaster).

Colour as selected by the Specifier.

Samples are provided on request for colour indication only; it is always recommended that a physical sample of the colour & product is checked before the product is used.

It is recommended that a test panel (ideally $2m^2$) be produced for inspection by the customer (client, architect etc.). Work should not commence until the customer is satisfied with the appearance of the product. Applicators should be familiar with product water requirement, handling characteristics, setting and hardening times. These may vary according to background temperature and humidity. The test panel should be prepared well in advance of work commencing.

K Rend products are manufactured from natural products and slight shade variations may occur.

K Rend bagged products are delivered in sealed 25kg bags on pallets. Each pallet contains 40 bags and weighs 1.0 tonne.

K Rend paste products are delivered in 25kg tubs on pallets. Each complete pallet contains 30 tubs and weighs 0.75 tonne.

Storage

Product sacks, even when protected by hoods, are only shower proof, and should be further protected to prevent damp causing caking of the product.

Product tubs should be protected from frost and direct sunlight.

The shelf life is 1 year from date of manufacture if stored off the ground in dry conditions, protected from frost and sunlight, in original unopened packaging.

It is important to note that all K Rend products are non-returnable.

Health and Safety

A Material Safety Data Sheet is available from the manufacturer and should be read prior to commencement of any rendering.

SUPPLIER: Kilwaughter Minerals Ltd
9 Starbog Rd, Larne, Co. Antrim, N. Ireland, BT40 2TJ
Tel: 028 2826 0766
Fax: 028 2826 0136
www.K-Rend.co.uk

APPLICATION METHOD

K Rend HP12 Base and K Rend Silicone TC15 should be applied strictly in accordance with the manufacturer's instructions and specifications and the relevant sections of BS EN 13914-1:2016. Further guidance is available in the British Board of Agrément Certificate No. 97/3428 and the National Standards Authority of Ireland (NSAI) Agrément Certificate No. 06/0248.

Dubbing Out

All dubbing out coats necessary to correct any surface alignment should be carried out as a first step, prior to beading.

Beading

All beading should be fixed to the substrate & aligned correctly, prior to the application of render basecoats.

Beads should be adhesively pasted, encapsulating the bead web using HP12 for stability.

Beads required
- K Bead 4mm Angle beads, elevated & set to minimum depth 8mm.
- K Bead 4mm Movements beads, elevated & set to minimum depth 8mm.
- K Bead 11mm Bellcast Beads located Dpc, elevated & set 14-16mm to front edge.

K Rend HP12 Base requires approximately 5-6 litres of clean water per 25kg sack. Consistency in proportions is essential to ensure an even finish. Mix thoroughly; it takes at least 10 minutes to dissolve the powder additives. Once the products have been mixed to the desired consistency additional water should not be added. The products should not be remixed once the material has started to set.

K Rend Primer TC and K Rend Silicone TC15; stir the contents of the tub thoroughly before use. (At this stage, a small amount of water can be added to Silicone TC15 to achieve the best working consistency).

Application

K Rend HP12 Base, apply either by machine or by hawk and trowel. Whilst the HP12 Base is still wet K Rend alkali resistant reinforcing mesh is embedded into the basecoat. The sheets of mesh should be overlapped by a minimum of 100mm and diagonal patches (300mm x 200mm) should be installed at the corners of all openings such as windows and doors. Rule to line and level. Leave with a float finish. Allow to cure for a minimum 14 days. It is important to ensure that the background is fully dry and protected from rain prior to priming.

Thickness: 6mm

All scaffold planks should be brushed, free of all cement dust, debris etc, prior to Primer & TC application.

K Rend Primer TC apply by brush or roller. Allow to cure for a minimum 24 hours prior to application of thin coat finish.

K Rend Silicone TC15, apply by hand in a continuous application, always working to a wet edge. Apply to the thickness of the largest aggregate. If possible, entire sections or elevations should be coated in a single operation using the same batch to avoid joint marks in the finish.

Finishing

Allow Silicone TC15 to take up slightly prior to rubbing up in a circular motion (using a plastic float or steel trowel) to create the final texture.

Finish: Fine textured
Total finished thickness: 8mm

OTHER CONSIDERATIONS

Site Conditions

K Rend products have a working temperature range of 5ºC to 35ºC. The product should not be applied in the rain or mist, at temperatures above 35ºC or below 5ºC or if exposure to frost is likely to occur during curing.

In sunny weather work should commence on the shady side of the building and be continued round following the sun to prevent the render drying out too quickly. In cold weather, if frost is forecast, work should stop in time to allow the material to set sufficiently to prevent frost damage. Curing times will vary accordingly to wind, temperature and humidity.

Cleaning of Tools

Clean tools and equipment with water immediately after use. Residue from cementitious products must not enter the drainage system.

Curing

All areas should be protected from rain, mist and cold for at least 48 hours after the application of the product. Care should be taken to protect the completed render from drying out too rapidly due to direct sun or drying wind.

Repairs

Damage to the products should be repaired immediately and carried out in accordance with the relevant section of BS EN 13914:2016. Advice from the manufacturer should be sought. K Rend Silicone TC15, in common with all finishes, should be protected from all potential site damage.

Algae

The product contains an algae resistant additive which gives enhanced resistance to algae growth however local conditions may still allow algae growth on the render surface. An annual coat of fungicidal wash can prevent algae from growing on facades which can be prone to algae by remaining wet over prolonged periods.

Water Runs

The product may be subject to water runs, however this may be reduced by proper protection during curing and avoiding application in adverse weather conditions. To avoid the appearance of water runs do not render in cold, damp weather.
Do not permit down–pipes, sills, copings and scaffold boards to throw water on the setting render. Do not allow washings from quoins, sills etc. to run on to the setting render.

Maintenance

Regular maintenance checks should be carried out. Where general staining occurs a warm power wash with suitable detergent can be used to clean up the finish. Care must be taken to adjust the pressure of the power washer to ensure that the render surface is not damaged during the procedure.

Additional Recommendation

For additional surface protection K Pro sealer is recommended as added protection to the façade and to reduce maintenance cycles.

This specification is valid for 6 months from date of issue. Thereafter details should be verified with Kilwaughter Minerals Ltd.

(Version 25/02/19)

All Specifications are developed and owned by Kilwaughter Minerals Ltd. for use as internal / external wall coverings. Kilwaughter Minerals Ltd. Uses the Specifications in conjunction with its other standard form documents and technical data sheets and in compliance with professional bodies such as RIBA. Kilwaughter Minerals. does not use the Specifications for any other purpose and does not consider them suitable for use for any other purpose. Electronic copies of specifications in MS Word format are not to be supplied outside the company. Kilwaughter Minerals. Ltd. does not permit the possession or use of electronic copies of specifications or guides to specifications by non Kilwaughter Minerals Ltd. organization's or persons other than as stated above.

In line with our policy of continuous improvement, we reserve the right to change technical data without notice.

BSEN998-1 & BSEN998-2 Licence No. 514639

FM 85394 EMS 611117 OHS 611118

BSEN15824 Licence No. 580349

Certificate No: 06/0248

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APPLICATION INSTRUCTIONS & HEALTH AND SAFETY INFORMATION

K REND SILICONE TC

Synthetic resin plaster.

First Coat:	K Rend Basecoat
Preparation Coat:	K Rend Primer TC
Final Coat:	K Rend Silicone TC

Backgrounds should be clean, level and dry and free from efflorescence.

Allow freshly applied render basecoats a minimum of 14 days before work commences.

Mask all adjacent surfaces including windows, sills, doors, timber, glass, brick & flooring.

Protect weather exposed surfaces.

APPLICATION

Apply K Rend Primer TC (colour co-ordinated to topcoat) by brush, roller or spray. Allow 24 hours drying time for primer before applying topcoat.

Apply K Rend Silicone TC topcoat to the thickness of the largest grain size using a stainless steel float and allow to take up slightly.
The surface is then rubbed up in a circular motion using a plastic float to create the texture.
Complete continuous surfaces without interruption, working to a wet edge at all times.
Protect the fresh render from rain and from drying too fast; drying times may be prolonged by lower temperatures and/or high humidity.

Kilwaughter Minerals Ltd are a ISO9001 & ISO14001 registered company. The BS EN 13914-1. design, preparation and application of external renderings and internal plastering must be followed at all times. A technical advisory service is available on request.

IF THESE INSTRUCTIONS ARE NOT FOLLOWED CLOSELY, A SATISFACTORY FINISH MAY NOT BE ACHIEVED AND KILWAUGHTER MINERALS LTD WILL ACCEPT NO RESPONSIBILITY.

APPLICATION INSTRUCTIONS

IF THESE INSTRUCTIONS ARE NOT FOLLOWED CLOSELY, A SATISFACTORY FINISH MAY NOT BE ACHIEVED AND KILWAUGHTER MINERALS LTD WILL ACCEPT NO RESPONSIBILITY.

STORAGE

Product tubs should be further protected to prevent damp causing caking of the product. Shelf life is approximately one year if stored off ground in original, sealed containers and protected against frost and away from direct sunlight. It is important to note that all K Rend products are non-returnable.

50mm samples are provided on request for colour indication only. A site sample panel is recommended to ensure that the specifer is satisfied with the product colour and texture. K Rend materials are manufactured from natural products, and slight shade variations may occur. A uniform approach is essential to achieve a good finish.

PLASTERING TEST PANEL

It is recommended that a test panel (ideally $2m^2$) be produced for inspection by the customer (client, architect, etc.). Work should not commence until the customer is satisfied with the texture and general appearance of the product. The test panel should be prepared well in advance of work commencing. Applicators should be familiar with product, handling characteristics, setting and hardening times. These may vary according to background, temperature and humidity.

DESIGN CONSIDERATIONS

For rendering, suitably designed overhangs and flashings should be provided to prevent water washing onto the render and causing staining. At ground level it is recommended that the rendering should not bridge the DPC to form a capillary path for rising damp. Sills and copings should project from the face of the wall with an ample drip groove to ensure that water is kept clear of the render. Gutters and down-pipes must also be designed to keep water off the facade. Angles may be formed using PVC angle and stop beads, or by using chamfered battens. Some construction materials may be susceptible to attack; fittings and surfaces adjacent that are likely to be damaged should be protected. Plan ahead to avoid discontinuity in any one area or walling which could lead to unsightly joints in the rendering. For further information about resistance to cracking see BS EN 13914-1, Para. 6.13 and BS 5262, Para. 27.3.

MIXING

Stir the tub contents throughly before use using a slow speed mixer. At this stage a small amount of water can be mixed with the product to achieve the best working consistency.

APPLICATION CONSIDERATIONS

Before any rendering or plastering begins, it is essential to ensure that the scaffolding provides suitable access to the whole of the working face. Note that it may be necessary to damp down walls prior to applying the product to control suction.
K Rend products have a working temperature range of 5^oC - 35^oC. Do not apply in conditions of strong sunshine or wind; do not apply onto frozen surfaces. Drying conditions will vary accordingly to wind, temperature and humidity. Protection from rain and frost should be provided for a minimum of 48 hours after application. Fresh render should be protected until it is fully cured.

MAINTENANCE

Where general staining occurs, a warm power wash with a suitable detergent can be used to clean up the K Rend finish. Care must be taken to adjust the pressure of the power washer to ensure that the render surface is not damaged during the procedure. An annual coat of fungicidal wash can prevent algae from growing on weather prevailing facades, which can be prone to algae by remaining wet over long periods.

If a change of colour is required at a later date, K Rend is a suitable substrate for masonry paint.

MATERIAL SAFETY DATA

1. IDENTIFICATION OF SUBSTANCE / MANUFACTURER
Kilwaughter Minerals Ltd, 9 Starbog Rd, Larne, N.I, BT40 2TJ.

2. COMPOSITION / INFORMATION ON INGREDIENTS
Synthetic resin plaster for application onto external substrates; available in a wide range of colours.

3. HAZARDOUS IDENTIFICATION
Not classified as hazardous according to EC classification

4. FIRST AID MEASURES
EYE CONTACT: Wash thoroughly with clean water, get specialist medical advice if irritation persists.
SKIN CONTACT: Wash exposed area with soap and water, get medical advice if irritation occurs.
INHALATION: Remove from source to fresh air. In case of sickness seek medical advice.

5. FIRE FIGHTING MEASURES The wet paste will not burn; the dry film is flammable.

Suitable extinguishing media Water, spray jet, extinguishing powder, CO_2, foam

Special exposure hazards arising from the substance, combustion products, resulting gases: In case of fire toxic incineration products may be released such as Carbon Monoxide (CO) and Nitrogen Oxides (NOx)

Special protective equipment for fire fighters Wear self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES. PERSONAL PROTECTION See below.
Personal precautions Wear protective clothing to avoid contact with skin.

Environmental precautions: Prevent from spreading; do not allow product to reach surface water.

Methods for cleaning up Spillages should be mixed with absorbent material and collected mechanically. Dispose of according to local regulations.

7. STORAGE AND HANDLING
Keep in a dry, safe place. Wear protective clothing as outlined.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING MEASURES Ensure adequate ventilation.

PERSONAL PROTECTIVE EQUIPMENT
Wear suitable protective clothing to avoid contact with skin. Suitable eye protection should be worn when handling the products.

9. PHYSICAL / CHEMICAL PROPERTIES

Physical State:	Paste
Odour:	Faint
PH:	8-10
Flash Point:	N/A (Not tested)
Explosives Properties:	N/A (the product is not self igniting)
Density:	1,800kg/m3
Solubility:	Partially soluble in water

10. STABILITY AND REACTIVITY
Stability: Stable under normal conditions of use and storage.
Decomposition: When heated in excess of 580^oC calcium oxide fumes and carbon dioxide are liberated.

11. TOXICOLOGICAL INFORMATION (SHORT TERM EFFECTS)
EYE CONTACT
No information recorded; the product is classified as non hazardous.

SKIN CONTACT
Hydraulic lime and wet paste can cause irritation, contact dermatitis, allergic dermatitis and / or cause burns.

12. ECOLOGICAL INFORMATION

No recorded information; the product is not classified as hazardous to the environment. Prevent contamination of soil, drains and surface water.

13. DISPOSAL CONSIDERATIONS
Dispose of in accordance with local regulations.

14. TRANSPORT INFORMATION: Not hazardous for air, sea or road freight.

15. REGULATORY INFORMATION **CLASSIFICATION** Non hazardous

Safety Phrases
Avoid contact with skin.
Keep out of reach of children.

OTHER INFORMATION

The information contained herein is based on our current experience and knowledge, and does not act as a guarantee. A full Material Safety Data Sheet is available. This information is based on current data correct at the time of publication. It is given as guidance in assessing safe handling, storage and use. Recipients of the product must take responsibility for use and disposal of product observing existing laws and regulations. K Rend contains naturally occurring products and as such, minor batch-to-batch variations are inevitable.

BSEN998-1 & BSEN998-2 Licence No. 514639

FM 85394 EMS 611117 OHS 611118

BSEN15824 Licence No. 580049

NSAI Agrément Certificate No: 06/0248

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