

Spectrum Building, 22 Freshwater Road, RM8 1EH

Status: Active Approval Requested

Project summary report

Project ID: P23735

Last Approved 09/11/2023

Building Safety Fund

Building Safety Fund



Show approved versions only

[Collapse all blocks](#)

Application summary

Version 1 Approved on 01/02/2023

Project title

Spectrum Building, 22 Freshwater Road, RM8 1EH

Bidding arrangement

Arinium Ltd

Organisation name

Arinium Ltd

Programme selected

Building Safety Fund

Project type selected

Building Safety Fund

Description

-

Email address

[REDACTED]

Applicant Details

Unapproved changes on 21/08/2024 by

[REDACTED]

Name of Applicant (i.e. the company or individual that is the Responsible Entity for the building)

Arinium Ltd

Contact details for Applicant

c/o Block Management UK Ltd Unit 5 Stour Valley Business Centre Sudbury Suffolk CO10 7GB [REDACTED]

Confirm if the Applicant will be appointing an Applicant's Representative with regards to the fund application - see [BSF OPS User Guide](#)

yes

Applicant's Representative – Organisation name (if different to name of Applicant)

HartDixon LLP

Applicant's Representative - Contact name

[REDACTED]

Applicant's Representative – Contact telephone number

[REDACTED]

Applicant's Representative – Contact email address

[REDACTED]

Applicant's Representative – Address

14 Devonshire Square, London EC2M 4YT

Confirm if the Applicant will be appointing a second Applicant's Representative with regards to the fund application

yes

Second Applicant's Representative – Organisation name (if different to name of Applicant)

Block Management UK Ltd

Second Applicant's Representative - Contact name

[REDACTED]

Second Applicant's Representative – Contact telephone number

[REDACTED]

Second Applicant's Representative – Contact email address

[REDACTED]

Second Applicant's Representative – Address

Unit 5, Stour Valley Business Centre, Sudbury, Suffolk, CO10 7GB

Upload [template declaration](#) confirming appointment as Applicant's Representative by Applicant. This should be for each representative

[Spectrum notification of appointment BMUK.pdf](#)

Spectrum notification of appointment HD.pdf

notification of revised representative STO.pdf

Confirm that the Applicant has formally appointed the Applicant's Representative(s) to act on behalf of the Applicant and that evidence of this appointment is available on request

yes

Confirm which of the following positions the Applicant holds in connection with the Property

Freeholder

Are you able to provide the Management Organisation details

yes

Management Organisation Name

Block Management UK Ltd

Management Organisation Address

Unit 5, Stour Valley Business Centre, Sudbury, Suffolk, CO10 7GB

Management Organisation Contact name

[REDACTED]

Management Organisation Contact email


Is the Applicant a Right to Manage (RTM) company?

no

Confirm that the Leaseholders and any of the residents at the Building (where different) have been informed and notified as to the proposed financial treatment of the Project, the scope of the Works and the timeframe for completion of the Works

yes

Building Details

Version 1 Approved on 01/02/2023

Registration Reference Number

Dagenham_18

Building name(s)

Spectrum Building

Building number

22

Development name, if applicable

-

Street

Freshwater Road

Post code

RM8 1EH

Local Authority area in which the block is located

Barking & Dagenham

Upload a plan showing the footprint of the building for which you are seeking funding

[title plan 22 Freshwater Rd.pdf](#)

Identify four residential properties within the Building held on open market lease terms which would be consistent with the leases which have been generally issued in the Building

Apartment 110, Apartment 204, Apartment 105, Apartment 302

Building Level Details

Version 1 Approved on 09/11/2023

Repeating Entity Block (allowing 10 repeats) (1)

Name of Building

Spectrum Building

Address of Building

22 Freshwater Road, Dagenham RM8 1EH

Building ID

Dagenham_18_1

Start on Site date

2023-12-11

Date removal of unsafe cladding started

2024-01-19

Date removal of unsafe cladding completed

2024-05-17

Date of practical completion

2024-06-09

Pre-tender Support

Version 1 Approved on 01/02/2023

Do you require any advance funding in order to undertake the design, specification and tendering required to start the remediation Works?

yes

Bank Details

Version 1 Approved on 01/02/2023

Are you able to provide information about the building's bank account into which we can make grant payments?

yes

Is the Applicant a registered provider of social housing? (i.e. a housing association or a local authority)

no

Does the Applicant have a Client Money Account, registered with an accredited Client Money Protection Scheme provider, into which we can make grant payments?

no

Provide details of an equivalent trust deed which nominates your chosen account and legally requires that any funds provided to that account are held for the benefit of leaseholders ('a Trust Fund')

Please see "Declaration of Bare Trust over Barclays Bank Account 83939359 in relation to Spectrum Building 22 Freshwater Road Dagenham Essex RM8 1EH

Account number for Trust Fund account

[REDACTED]

Sort code for Trust Fund account

[REDACTED]

Email address for individual that manages bank account

[REDACTED] [REDACTED] [REDACTED]bmuk.ltd

Telephone number for individual that manages bank account

[REDACTED]

Applicant's company house address details (Name/number, street, post code, city)

Arinium Ltd, 310 Harrow Road, Wembley, United Kingdom, HA9 6LL

Applicant's Companies House number

11784090

Applicant's VAT Registration number

331 9944 84

Confirm that this trust arrangement complies with the requirements of Section 42 of the Landlord and Tenant (LTA) Act 1987

yes

Upload a copy of the proposed deed so that this can be verified [Template deed available here](#)

Cladding bank account letters from bank-pages-1-2.pdf

Trust Deed Document.pdf

State Aid

Version 1 Approved on 01/02/2023

Are you ready to enter information about leaseholders that are Undertakings and/or properties in the building that are used for social housing?

no

Milestones & Payments

Unapproved changes on 25/09/2024 by [REDACTED] [REDACTED]

MILESTONE	N/A	DATE	VALUE £
Payment - Pre-Tender Support		24 / 01 / 2023	247,532
Project team appointed		03 / 02 / 2023	N/A
Tender period commenced		20 / 03 / 2023	N/A
Tenders returned		26 / 04 / 2023	N/A
Planning application submitted		10 / 05 / 2023	N/A

MILESTONE	N/A	DATE	VALUE £
Planning approval determined		03 / 07 / 2023	N/A
Works Contract executed		04 / 10 / 2023	N/A
Building Control application submitted		13 / 10 / 2023	N/A
Building control approval obtained		13 / 10 / 2023	N/A
Payment - Signed Works Contract		03 / 11 / 2023	4,776,226
Start on site achieved		11 / 12 / 2023	N/A
Payment - project 50% complete		24 / 06 / 2024	941,955
Second Funding Date Certificate Issue (i.e. the 50% completion certificate)		24 / 06 / 2024	N/A
Practical completion achieved		19 / 09 / 2024	N/A
Date of Practical Completion Certificate		19 / 09 / 2024	N/A
Payment - Practical Completion		14 / 10 / 2024	
All required statutory approvals obtained (excluding building control and planning permission)	N/A	N/A	N/A

Full Works and Costs

Unapproved changes on 21/08/2024 by [REDACTED] [REDACTED]

Are you able to provide details at this stage of the full works and costs?

yes

Confirm that a 'competent professional' has certified that the planned remediation design and Works comply with the Building Safety Fund's requirements, and that you have on file formal written evidence of this, that is available on request

yes

Confirm sign off of the Specification or Employer's Requirements detailing the full project Works has been provided by a 'competent professional' and that evidence of specification sign-off and records in accordance with the above are available on request

yes

Applicants are required to hold and maintain a Project Directory of existing and proposed professional team appointments. Confirm you have such a directory and that it is available on request

yes

Confirm you have appointment documentation for all appointments made to date, and that these are available on request

yes

Confirm a 'competent professional' has agreed the existing and proposed scoping documentation covers the full scope of Works and there are no scope or coordination gaps, and that you have on file formal written evidence of this (available on request)

yes

Confirm that you have on file formal written evidence of competence for all professional project team appointments, signed off by the Applicant or appointed 'competent professional', and that this is available on request

yes

Confirm that appropriate levels of Professional Indemnity Insurance and limits of liability, for the risk associated and in accordance with industry best practice, are in place for all current appointments and evidence of this is available on request

yes

Confirm that appropriate levels of Professional Indemnity Insurance and limits of liability are contractually required for all future appointments and that you have on file formal written evidence of such cover so it is available on request

yes

Confirm that residents and leaseholders will be informed of the proposed Start on Site Date at least two weeks prior to such date

yes

Add any additional information you need to make us aware of or queries about Project team appointments

Compliance Inspector and Clerk of Works appointments are ready for instruction when site start is confirmed

Do the Works require Planning approval?

yes

Confirm that planning approval will be in place prior to start on site

yes

Confirm that you have Full Plans Approval or a Plans Certificate (available on request)

yes

Confirm that Full Plans Approval or a Plans Certificate will be in place prior to start on site, or (where a Design and Build contract will be used) that Full

Plans Approval or a Plans Certificate will be in place at completion of RIBA Stage 4

yes

Confirm all remaining Statutory Approvals will be in place within the timescales required by the authorities providing the approvals

yes

Add any additional information you need to make us aware of, or queries about statutory approvals

None

Confirm the Fund's [standard contract requirements](#) have been included within the Works Contract

yes

Confirm your procurement strategy

Design & Build

Confirm your tender strategy

Negotiated

Add any additional information you need to make us aware of, or queries about Procurement

Contractor selected competitively for PCSA appointment

Upload your completed pricing document [Full Works and Costs spreadsheet \(Annex B\)](#)

[Spectrum Dagenham - VFM Report 20230503 exc apps.pdf](#)

[Spectrum Dagenham full works and costs rev 4.xlsx](#)

Enter the total project cost from your Full Works and Costs spreadsheet (£)

7654304

Enter the value of total eligible costs from your Full Works and Costs spreadsheet (£)

7654304

Confirm that costs are based on a tender price

yes

Confirm that a ‘competent professional’ agrees that the contract sum represents a reasonable sum for the Works cost given current market conditions, taking into account any qualifications or exclusions, and that evidence of this is available on request

yes

Confirm that a ‘competent professional’ agrees and has signed off that the split of costs between eligible and ineligible costs are accurate and that the breakdown is accurate and the totals are correct, and evidence of this is available on request

yes

Confirm that a 'competent professional' agrees and has signed off that the Works programme has been reviewed and is considered a reasonable estimate of time for the Works, and that evidence of this is available on request

yes

Confirm if the Works Contract will require any design to be carried out by the contractor (Contractor's Design Portion)

yes

Confirm that the lead designer agrees that any Contractor's Design Portion elements are suitable and sufficient in order to complete the design development in accordance with the Fund requirements, and that evidence of this is available on request

yes

Add any additional information you need to make us aware of, or queries about contract execution

Contract form has been agreed with Contractor

Key Project Team Appointments

Version 2 Approved on 09/11/2023

Are you able to enter information about key project team appointments?

yes

Upload the [Key Project Team Appointments Spreadsheet](#)

Has the Applicant appointed a Design Team?

yes

Enter names of Design Team companies

Fleetwood Architectural Aluminium appointed as PCSA Contractor who has appointed designers , fire engineer and approved inspector

Has the Applicant appointed a Project Manager?

yes

Enter company name of Project Manager

HartDixon LLP

Has the Applicant appointed a Contractor?

yes

Enter company name of Contractor

Fleetwood Architectural Aluminium

Company registration number of Contractor

3321897

Has the Applicant appointed a Cost Consultant?

yes

Enter company name of Cost Consultant

HartDixon LLP

Has the Applicant appointed a Clerk of Works?

yes

Enter company name of Clerk of Works

MDA Consulting

Company registration number of Clerk of Works

4511261

Has the Applicant appointed an Independent Inspector?

yes

Enter company name of Independent Inspector

Woldon Architects

Company registration number of Independent Inspector

12735069

Project Documents

Unapproved changes on 06/12/2024 by [REDACTED] [REDACTED]

Has the GLA requested that you provide specific project documents?

yes

Scope of Works, Project Team Appointments and Resident / Leaseholder Notifications

20644_PCSA_Spectrum_Building_Dagenham_cladding_remedial_works executed.pdf

Spectrum_Balcony Decking_Divider Screens _ Floors 1 to 4 Eligibility RPT rev 01.pdf

Statutory Approvals

spectrum cladding planning consent.pdf

B23045923_Plans Certificate (Spectrum Building).pdf

B23045923_Spectrum Building_Approved Inspector Tracker (04).pdf

Procurement

20644 Spectrum Dagenham procurement strategy rev 1.pdf

20644 PCSA brief.pdf

Spectrum Building - Fee Proposal 21-1215.pdf

Spectrum Dagenham - VFM Report 20230503 appendices.pdf

Contract Execution

A107880001 29.9.23 FINAL JCT DB SoA (Including Annexures).pdf

20644 EAI 1.pdf

20644 EAI 2.pdf

20644 faa contract termination.pdf

280824 Specturm Building Formal Notice of Work Suspension HD.pdf

C712 Spectrum - Notice 27082024.pdf

Other

bmuk app declaration.pdf

hartdixon app declaration.pdf

2307_240612_Monitoring Report_02.pdf

2307_240725_Monitoring Report_03.pdf

spectrum 18 updated certificate of compliance.pdf

Approved Grant

Version 2 Approved on 09/11/2023

Grant

£6,279,697

You can request any amount up to

£6,279,697

Cost Recovery

Version 2 Approved on 09/11/2023

Have you completed a [cost recovery questionnaire](#)?

yes

Upload your completed cost recovery questionnaire

[20230714_cost_recovery_questionnaire_spectrum dagenham.docx](#)

Enter the total amount (£) of costs, if any, recovered in relation to the installation of the unsafe non-ACM cladding system. Enter “0” if no costs have been recovered (£)

-

Of the above amount, how much should be repaid to the Government or deducted from your grant allocation? Enter “0” if no costs have been recovered (£)

-

Do you have evidence of cost recovery in relation to the installation of the unsafe non-ACM cladding system?

yes

Upload evidence of cost recovery in relation to the installation of the unsafe non-ACM cladding system

[LETTER TO CLARKE WILLMOTT dated 3 November 2022\(14838789.1\).PDF](#)

[Letter to Chadwell Properties - 15.09.2022.PDF](#)

[cost recovery advice email.pdf](#)

[6. NHBC Confirmation of Warranty Registration.PDF](#)

[Buildmark Policy Certificate AO016095.pdf](#)

Declaration

Unapproved changes on 06/12/2024 by



The application for funding is complete and accurate, and in line with all requirements of the guidance and prospectus and I/we accept that any incorrect information supplied may entitle DLUHC to recover the whole or part of any funding amount provided

yes

Name of person making declaration



Designation of person making declaration

Applicant Representative

Organisation of person making declaration

HartDixon

Date of declaration

2024-12-06

Project Progress and Variations

Unapproved changes on 06/12/2024 by



Has this project received an allocation of grant to fund the full works and costs?

yes

Has the removal of all eligible unsafe cladding systems started?

yes

Enter date removal of all eligible unsafe cladding systems started

2024-04-10

Have all eligible unsafe cladding systems been removed?

yes

Enter date that all eligible unsafe cladding systems were finally removed

2024-12-01

What is the cumulative spend against Total Eligible Costs to date? (£)

5895316.98

What is the Forecast Outturn of Total Eligible Costs for this project? (£)

6261718

Does the Forecast Outturn of Total Eligible Cost include variations to the Works Contract?

Yes

Add commentary to explain any changes to forecast Practical Completion date in the 'Milestones & Payments' section (or state 'N/a' if no changes)

See revised contractor's programme in variation 2. Please note that variation works were under way when the fire occurred which has led to the termination of the contract. The contractor's costs relating to the termination are awaited but are likely to be significantly less than the amount claimed for variations, so the Forecast Outturn of Total Eligible Costs will be less than indicated above.

Confirm that estimates or firm costs for any known variations have been uploaded to the portal

Yes

Have there been any Variations to the scope of the Works (see definitions in the funding agreement)?

yes

Confirm that the Applicant's Contract Administrator (or equivalent i.e. Employer's Agent, NEC Project Manager) has confirmed that the cost variation in question is an allowable claim under the "Works Contract"

yes

Briefly explain how the additional costs have arisen, the extent of necessary work and why it relates to the cladding remediation

1. Major fire leading to termination of the contract and omission of incomplete works. 2. Delay due to instruction to pause some works while investigations were undertaken. 3. Change to fixing of spandrel panels. 4. Delay due to change to scaffold design. 5. Adjustment of fees due to delays and termination of works

Confirm if the cost and time impact of the variation are firm and agreed with the contractor

yes

Provide final time and cost agreements if estimates are used to support any variation requests

[Spectrum building variation_reconciliation of final costs rev 1.xlsx](#)

[Spectrum Dagenham assessment of variations.pdf](#)

[Spectrum Dagenham FA assessment 20241031.pdf](#)

[Spectrum Dagenham full works and costs rev 5.xlsx](#)

Provide the impact on the planned completion date in number of weeks

Project History

05/12/2024 at 13:54 Returned to organisation by [REDACTED]

Hi [REDACTED] returning the application for you to add the amended variation doc and Certificate of Compliance. Thanks, [REDACTED]

HM Land Registry

Official copy of title plan

Title number **TGL448901**

Ordnance Survey map reference **TQ4787SE**

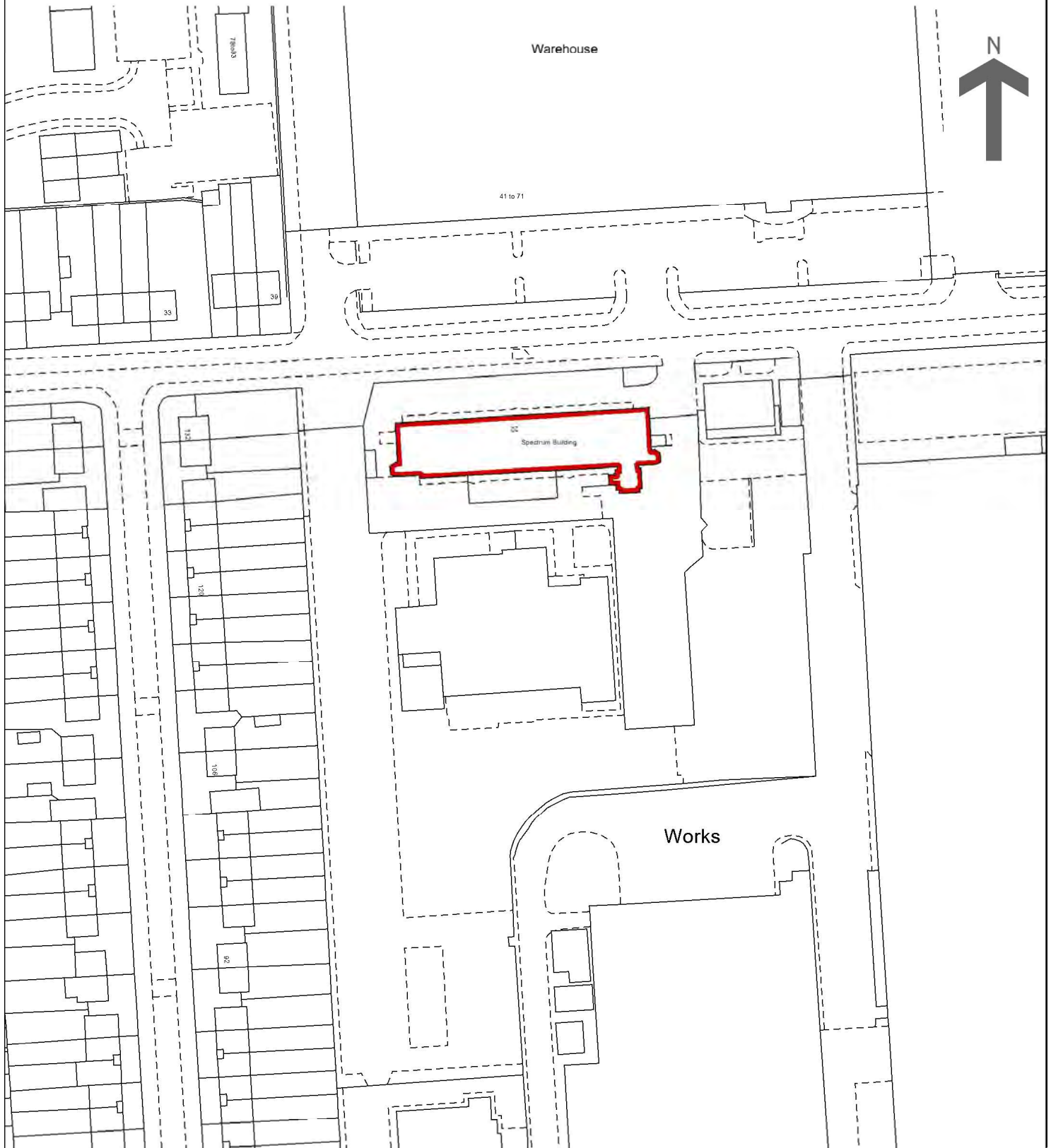
Scale **1:1250 enlarged from 1:2500**

Administrative area **Barking and Dagenham**

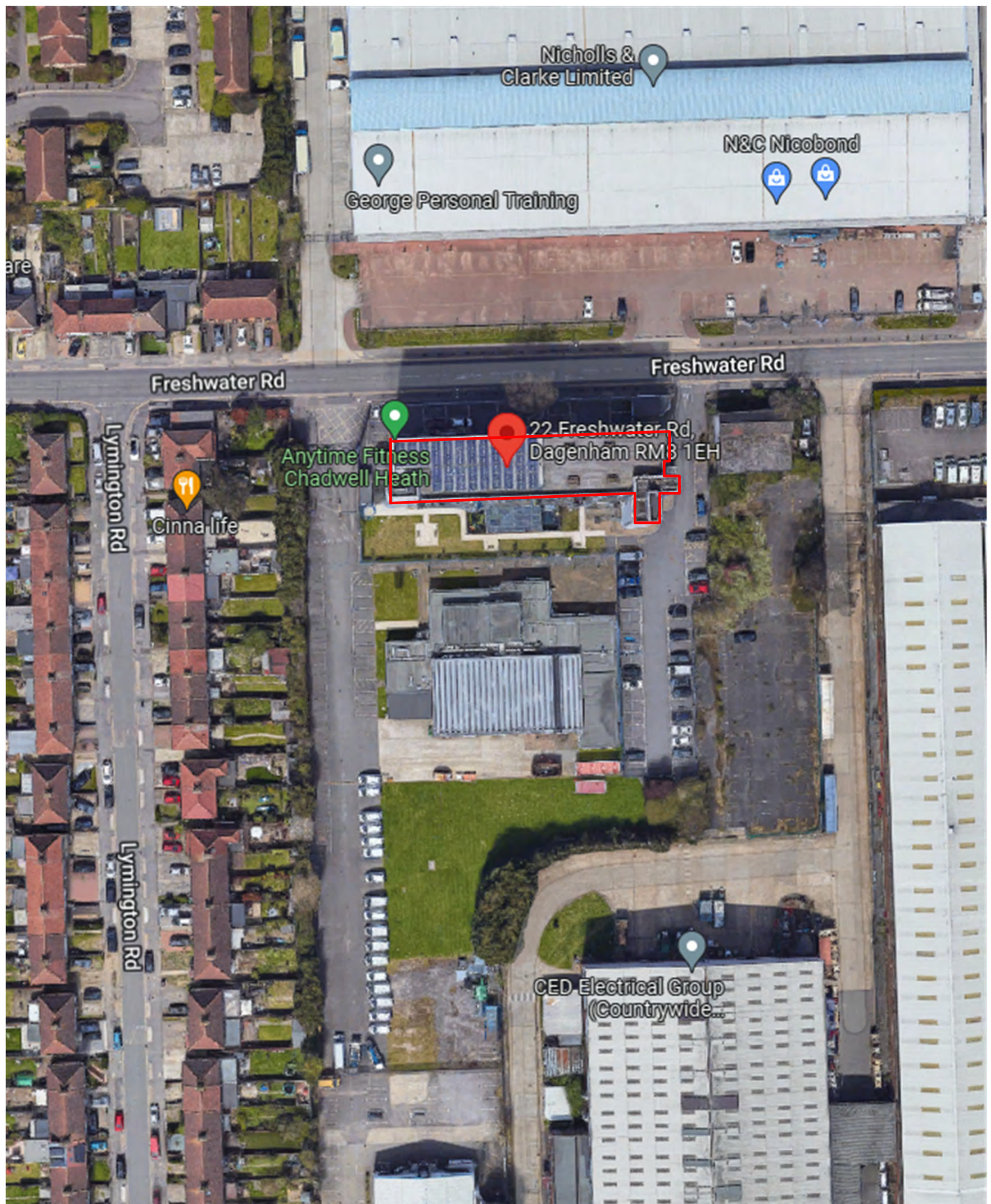


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The land in this title lies within the area edged red hereon and is more particularly described in the lease or leases referred to in the property register.



Satellite image of area shown on title plan TGL448901



Arinium Limited

5 Grange Road, Orpington. Kent BR6 8ED
Phone: 07956 937171 e-mail: brij@live.co.uk

GLA and DLUHC

28 October 2022

Dear Sir/Madam,

**RE:- NOTIFICATION OF APPOINTMENT OF AN APPLICANT'S
REPRESENTATIVE**

We confirm that we have formally appointed [REDACTED] of Block Management UK as our agent to act on our behalf in connection with all matters relating to our application to the Building Safety Fund for funding in respect of The Spectrum Building, 22 Freshwater Road, RM8 1EH, and you may accept this declaration as our authority to deal with them and accept any information and documentation supplied by them as if this had been supplied by us

Signed

[REDACTED]

Date

28 October 2022

Arinium Limited

5 Grange Road, Orpington. Kent BR6 8ED
Phone: 07956 937171 e-mail: brij@live.co.uk

GLA and DLUHC

28 October 2022

Dear Sir/Madam,

**RE:- NOTIFICATION OF APPOINTMENT OF AN APPLICANT'S
REPRESENTATIVE**

██████████ ██████████
We confirm that we have formally appointed Barry ██████████ of HartDixon LLP as our agent to act on our behalf in connection with all matters relating to our application to the Building Safety Fund for funding in respect of The Spectrum Building, 22 Freshwater Road, RM8 1EH, and you may accept this declaration as our authority to deal with them and accept any information and documentation supplied by them as if this had been supplied by us

Signed

Date

28 October 2022

J31B2O002NCUAA0000000020200100199600000



The Directors
BLOCKMANAGEMENT U.K. LIMITED T/AS
Blockmanagement UK Ltd
5 Stour Valley Business Centre
Brundon Lane
Sudbury
CO10 7GB

Barclays
Leicester
LE87 2BB

0345 605 2345*

23 February 2021



Dear The Directors

We are pleased to advise that your Clients Premium Account has been opened. Your new account details are:

Account Name: Clients Premium Account



You can pay in and withdraw funds from your Clients Premium Account account over the phone** or via Online Banking**.

If you have any queries regarding your new savings account, you can contact us on 0345 605 2345*. This number will give you access to your Business Banking Team, who will be happy to assist with any queries you may have.

Yours sincerely

Your Barclays Business Team

** You will need to register for these services.

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*Call charges may apply. Please check with your service provider. To maintain a quality service we may monitor or record phone calls.

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Barclays
Leicester
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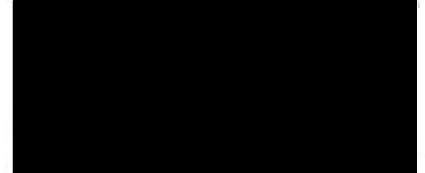
J31B3C02JJ2MBA000000118900100136300000



The Directors
Blockmanagement U.k. Limited
5 Stour Valley Business Centre
Brundon Lane
Sudbury
United Kingdom
CO10 7GB

0345 7 345 345*

12 March 2021



Dear The Directors



Blockmgmt U.k. Ltd Dsgntd, Gov Fund Spectrum Bdng - Client Account Number

Client Money Acknowledgement - The account listed in this letter (the "Account")

We confirm receipt of your letter dated 10/03/2021.

In accordance with your instructions, the Account has been opened with the title as shown above.

We refer to the above Account and confirm, further to your request, the following:

- a) you have advised us that all the money standing to the credit of the Account is held by you as trustee (or, if relevant, as agent);
- b) Barclays Bank UK PLC (the "**Bank**") is not entitled to combine the Account with any other account or to exercise any right of set-off or counterclaim against money in the Account, in respect of any sum owed to the Bank on any other of your accounts; and
- c) the title of the Account sufficiently distinguishes each Account from any other account containing money belonging to you and is in the form requested by you.

In agreeing to maintain the Account as designated, it must be understood that the Bank, whilst acknowledging the effect of the designation, accepts no responsibility for its correctness, its efficacy as regards other persons, nor for the propriety of withdrawals from the Account which comply with your instructions. It is your responsibility to ensure compliance with the relevant rules of any applicable regulators, as well as with all applicable legal, fiduciary and regulatory obligations. We shall have no obligation to assure or monitor compliance with those obligations in any respect. This confirmation is given for your benefit only and may not be relied upon by any third parties.

Any charges and/or fees payable in connection with the Account shall be charged in accordance with arrangements agreed separately with you.

Yours sincerely

Your Barclays Business Team

You can get this in Braille, large print or audio by contacting any Barclays branch to advise us of your requirements.

*Calls to 0800 numbers are free from UK land lines and personal mobiles, otherwise call charges may apply. Please check with your service provider. To maintain a quality service we may monitor or record phone calls.

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HPSL0579 08/15

Project Managers Briefing Note

Project: Spectrum Building Dagenham Cladding Remediation
Project No. 20644
Subject: Design and Procurement Strategy
Revision: 1 – updated to latest situation



Introduction

An EWS1 and Façade Survey Assessment Report was carried out on the above building in December 2020. This indicated that there are some high and medium risk issues that need to be remediated. HartDixon have been appointed as project managers to lead the remediation process.

The building in question is known as the Spectrum Building, 22 Freshwater Road, RM8 1EH as pictured above. The building was originally an office block and was converted to residential, including a two storey extension to create floors 5 and 6, around 2013. It is understood that the building freehold was purchased by the present owner in 2019.

EWS1 report summary

The report identifies four areas of concern and recommends remediation in the medium term:

- The high pressure laminate on timber frame cladding system that has been used for the extension of the building to create floors 5 and 6.

- The “spandrel” window infill panels to floors G-4

- High pressure laminate privacy screens between balconies

- Timber decking to balconies

The report provides some caveated options to the replacement of the cladding to floors 5 and 6, but these do not appear to be feasible so this strategy assumes that they will need to be replaced.

Funding Arrangements and Cash Flow

An initial application has been made to the Building Safety Fund related to this building and eligibility confirmed for the cladding of floors 5 and 6 and spandrel panels, but not the other items. It is possible that design development will provide a case for an appeal for one or both of these to be included, but if not separate funding will be required to cover this cost.

The attached programme assumes that the PCSA and other expenditure on fees can be made in advance of receipt of Pre-tender Support (PTS) from the BSF. ***The initial estimate of this expenditure is in the region of £100,000 and, as shown, PTS funds may not be received until May 2022.***

Design and Scope Development Required

The EWS 1 report only considers compliance of the building with regulations and the MHCLG advice note. It does not consider the extent or how the remedial work will be carried out. There is therefore some design and scope definition to be developed before a cost can reasonably be determined by tender or negotiation with appropriate specialist contractors. These are, in no particular order:

- Selection of replacement materials from those available that meet the requirements of the building regulations and MHCLG advice note on cladding.

- Further intrusive site investigations required to confirm existing fabric and design details

- Consideration of thermal properties of the alternative materials and if additional measures are required to maintain the overall insulation value.

- Evidence to support appeal for funding of items that are currently non-eligible.

- Effect on appearance of the building resulting from the replacement materials and consideration of the need for planning consent. Note that it is a requirement of the BSF that consent is obtained or confirmation from the planning authority that an application is not required.

- Design required for the incorporation of replacement materials into the overall fabric such as junctions and service penetrations.

- Confirmation that the new design system is compliant with the requirements of the Building Regulations and MHCLG advice note so that a EWS 1 Determination of A can be issued on completion of the work.

- Means of access to the areas requiring remediation and temporary protection to the building while works are carried out.

Recommended Procurement Route

It is recommended that the design and scope development are carried out by a suitable specialist contractor under a Pre-Construction Service Agreement (PCSA). The PCSA Contractor will be expected to employ an Architect and other professionals to provide the design, cost and timescale required to satisfy the requirements of the BSF stage 2 application. The advantages of this approach over a more traditional approach where designers are engaged separately by the Client are:

- Incorporation from the start of “buildability” into the remedial works proposals

- Resource availability for further intrusive investigations

- Single responsibility to achieve the required EWS 1 determination

- Guarantee of cost estimate, initial enquiries to the Contractors listed below for competitive tender were declined.

It is recommended that the following professionals are engaged direct by the Client to ensure objectivity:

Project management, Employers Agent as required for the JCT Contract and quality control – ourselves

Independent Quantity Surveyor to provide value for money (VfM) report required for the BSF application if the costs are negotiated, together with ongoing cost control.

Clerk of Works as required by latest Homes England BSF guidance

Independent design reviewer required by latest Homes England BSF guidance

Procurement of PSCA Contractor

Five firms were initially identified as suitable specialist Contractors to carry the works and provide a competitive tender for the PCSA. All of these had previously expressed an interest in providing proposals for this type of. The following table sets out the pre-qualification, enquiries and selection.

<i>Company</i>	<i>Pre-qualification</i>	<i>Enquiry issued</i>	<i>Reminder</i>	<i>Proposal received</i>
Guildmore	Passed checks	13/01/2022	27/01/2022	
Fleetwood Aluminium	Passed checks	13/01/2022		19/01/2022
RFL Facades	Failed financial check and PII requirements			
GPS Projects	Passed checks	13/01/2022	27/01/2022	
Starfish Construction	Declined initial request due to workload			

As can be seen above it was only possible to obtain a single tender for the PCSA, and no companies were willing to provide competitive tenders for the works.

Date 13 January 2022

Ref: 20644 pcsa brief

Brief for Delivery of PCSA (Pre-Construction Services Agreement) role for: Cladding Remediation Works at the Spectrum Building, 22 Freshwater Road, RM8 1EH



Introduction

An EWS1 and Façade Survey Assessment Report was carried out on the above building in December 2020. This indicated that there are some high and medium risk issues that need to be remediated. HartDixon have been appointed as project managers to lead the remediation process.

The building in question is known as the Spectrum Building, 22 Freshwater Road, RM8 1EH as pictured above. The building was originally an office block and was converted to residential, including a two storey extension to create floors 5 and 6, around 2013. It is understood that the building freehold was purchased by the present owner in 2019. The report identifies four areas of concern and recommends remediation in the medium term:

- The high pressure laminate on timber frame cladding system that has been used for the extension of the building to create floors 5 and 6.

- The “spandrel” window infill panels to floors G-4

- High pressure laminate privacy screens between balconies

- Timber decking to balconies

The report provides some caveated options to the replacement of the cladding to floors 5 and 6, but these do not appear to be feasible so this strategy assumes that they will need to be replaced.

It has been determined that the above project will benefit from the appointment of a suitable Specialist Contracting Company to deliver the requirements listed below within a PCSA. The PCSA provider shall employ all required professionals and designers to provide the deliverables listed below with the exception of the following who will be engaged directly by the Client:

- Project manager, CDM Principle Designer and Employers Agent (HartDixon)

- Independent Quantity Surveyor to provide value for money (VfM) report required for the BSF application if

the costs are negotiated, together with ongoing cost control.

Fire Engineer to check proposals and issue EWS 1 determination on completion.

Building Control Approved Inspector.

The contractor appointed to provide PCSA services is not guaranteed the contract to carry out the remedial cladding works, and all information delivered in relation to the PCSA shall become the property of the Client.

Specific PCSA Deliverables

Review of EWS1 and Façade Survey Assessment Report dated December 2020 and any as built information available

Selection of replacement materials from those available that meet the requirements of the building regulations and MHCLG advice note on cladding.

Further intrusive site investigations required to confirm existing fabric and design details

Consideration of thermal properties of the alternative materials and if additional measures are required to maintain the overall insulation value.

Evidence to support appeal for funding of items that are currently non-eligible.

Effect on appearance of the building resulting from the replacement materials and consideration of the need for planning consent. Note that it is a requirement of the BSF that consent is obtained or confirmation from the planning authority that an application is not required.

Design for the cladding remediation to RIBA stage 3

Design required for the incorporation of replacement materials into the overall fabric such as junctions and service penetrations.

Confirmation that the new design system is compliant with the requirements of the Building Regulations and MHCLG advice note so that a EWS 1 Determination of A can be issued on completion of the work.

Means of access to the areas requiring remediation and temporary protection to the building while works are carried out.

Detailed cost breakdown for review by the Quantity Surveyor, together with costs in format required for the Building Safety Fund Stage 2 application.

Detailed programme for remedial works, including any remaining design, other pre-construction activities and procurement periods

Other PCSA Requirements

Review in conjunction with the Professional Team the objectives and requirements of the Employer and develop them in a manner approved by the Employer.

Use best efforts to achieve economies in time, cost and design and suggest any design changes which could be made to reduce the incidence of conflict or duplication between trades.

Identify areas of potential cost savings and recommend appropriate action by the Professional Team.

Participate in value engineering costing studies with the Professional Team and/or Specialist Contractors.

Provide buildability advice. Review and advise on the practical implications of the proposed drawings and specifications and formulate and agree construction methods with the Professional Team and any Specialist Contractors and advise on safety requirements and good industry practice.

Advise the Employer's Agent, Architect and Cost Consultant on procurement and programme by reference to the Programme, including preparing and agreeing with the Employer's Agent, Architect and Cost Consultant a procurement and construction programme.

Investigate and advise upon programming and construction methodology and sequencing to improve or shorten the Programme and to ensure the earliest or most efficient schedule of handover.

Provide early warning of any likely overspend as against the relevant estimate in its Cost Plan and, in conjunction with the Professional Team, identify how costs can be brought within budget.

At all times liaise and co-operate with the Cost Consultant and provide the Cost Consultant with such financial and other information relating to the Project as it may request from time to time.

Plan and prepare a detailed methodology for construction works, especially with regard to sequencing, temporary support, existing services relocation or protections, existing means of escape, protection, maintaining the structural integrity of the existing structures or facilities which adjoin, abut or run through the site and the safety of users and occupiers of the surrounding properties, structures or facilities. Prepare a detailed methodology which addresses the measures that the Contractor proposes to undertake to ensure both protection and security of the site and any continuing access for vehicles around and to the site. Monitor and advise on materials, component and labour plans of the proposed works. Monitor and advise on the availability and price of materials, method of working, labour plans, building systems, feasibility of construction and manufacture of components and installation of construction. Prepare material, labour and component flow schedules and identify those which require advance ordering and processing, including a time based procurement schedule and a related trade personnel or operative resources histogram; identify all pre-fabrication items. Notify the Employer and the Cost Consultant if any proposed subcontractor or supplier is affiliated directly or indirectly to the Contractor (or its parent or other group companies). Liaise with the Principal Designer regarding production of the health and safety file and provide to the Principal Designer all information requested for inclusion in the health and safety file. Assist in developing and updating the Construction Phase plan according to the CDM Regulations in conjunction with the Principal Designer and the professional Team. Recommend, in conjunction with the Professional Team, appropriate site investigation works to be carried out and monitor their execution and report to the Employer thereon. Assist the Employer and the Professional Team in liaising with public authorities, public and fire officers and the like, by providing information to and assisting the professional Team in making and negotiating all applications, approvals, waivers or agreements necessary for the Project. Procure measurements of the building to facilitate the works under the Main Contract. Work in conjunction with the Approved Building Inspector to develop and implement a strategy to satisfy and discharge Building Regulations. Provide expenditure justification alongside Fee submissions relating to any third party design fees. Provide the Employer with a schedule of pre-construction Surveys & Due Diligence activities required on site in line with the Pre-Construction programme.

Appended Information

EWS1 and Façade Survey Assessment Report dated December 2020

Draft programme

Prepared on behalf of HartDixon

Partner

hartdixon.com



Regulated by | RICS

HartDixon is a trading name of GIA Building Consultancy LLP

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Facade Survey Assessment Report (Incl. EWS1 Determination)



Building: Spectrum Building, 22 Freshwater Road, Dagenham,
RM8 1EH

Report Author: [REDACTED]

Project Reference: J000034 / ASLPR200228B

Date: 21.12.2020

Instructing Client: Chadwell Properties LLP

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V1.0	02.12.2020		Draft Report
V2.0	21.12.2020		Amendments following issue of Chartered Fire Engineers report

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REPORT AUTHORS

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Name / Role	Professional Memberships and Qualifications	Signature
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EXECUTIVE SUMMARY

- 0.1 This report provides an analysis of the type and nature of any cladding systems utilised within the construction of Spectrum Building, 22 Freshwater Road, Dagenham, RM8 1EH with the specific objective of providing informed advice and guidance as to whether the external façade and any attachments meets (or not) the advice and guidance issued by the Ministry of Housing, Communities and Local Government (MHCLG)
- 0.2 This report was commissioned to provide an analysis and evaluation of the current cladding systems employed at the property and determine compliance with the MHCLG guidance as well as provide an EWS1 form for the client to use in respect of any financing arrangements for the property
- 0.3 The scope of this report covers the external façade and any attachments to Spectrum Building, 22 Freshwater Road, Dagenham, RM8 1EH only; all other areas including tenants demised areas are excluded from this report and investigation.
- 0.4 It was noted that the following types of cladding systems have been utilised on site:

Cladding / Wall Type 1

Solid concrete, DPM (assumed), Timber Batten (assumed), Laminated Polyisocyanurate (PIR) and Plasterboard (assumed).

Cladding / Wall Type 2

Render, Hollow Concrete Masonry Blockwork (assumed), Timber Batten (assumed), Fireline Plasterboard (assumed).

Cladding / Wall Type 3

High Pressure Laminate Panel, Clear Cavity, Breathable Membrane, Timber Oriented Strand Board, Soda-lime-silicate (Glass Wool), Timber Framing (assumed), Vapour Control Layer (assumed), Timber Batten (assumed), Fireline Plasterboard (assumed).

Cladding / Wall Type 4

Polyvinyl Chloride PVC, Fibreboard, Polystyrene Insulation Foam, Fibreboard (assumed), Polyvinyl Chloride PVC (assumed).

In addition to the various wall types, the following attachments to the façade were noted:

Attachment Type 1 – Balconies

Steel structure and balustrading, timber decking.

Attachment Type 2 – Privacy Screens

High Pressure Laminate Panel.

0.5 Overview of findings

- 0.5.1 The physical survey of the building, representative sampling and testing of materials at a UKAS accredited laboratory has enabled a determination of **B2** for the EWS1 Form.
- 0.5.2 The physical survey of the building highlighted a number of areas of concern due to unconfirmed fire classification / type of high pressure laminate panel and its associated timber framed wall construction (wall type 3), the spandrel / window insulated panels (wall type 4) and the timber decking and high pressure laminate privacy screens used within the facade.
- 0.5.3 Testing of the materials obtained by representative sampling at a UKAS accredited laboratory has indicated that the composition of the facade and the materials used within was consistent across sample locations. Seven of the materials tested were found not to be of limited combustibility.
- 0.5.4 This has impacted upon the determination for the EWS1 Form which has been peer reviewed by a Chartered Fire Engineer. Following this determination, we have highlighted our observations regarding compliance with the Building Regulations and performance standards. Finally, this document provides a brief summary of the recommendation for remediation in respect of the facade.
- 0.5.5 A full Fire Safety Risk Assessment of the fire risk posed by the high pressure laminate panel and its associated timber framed wall construction (wall type 3), the spandrel / window insulated panels (wall type 4) and the timber decking and high pressure laminate privacy screens will be necessary.
- 0.5.6 The determination of **B2** has been established based on investigative works which have confirmed:

The primary materials of the external walls are considered not to be of limited combustibility as defined within BS 9991:2015 as:

- It is currently unclear whether the high pressure laminate panels installed to the upper additions of floor levels 5 and 6 (wall type 3) meets with the guidance of the MHCLG advice note (January 2020).
- The construction arrangements / components utilised for the upper additions of floor levels 5 and 6 (wall type 3 - timber frame construction) are considered not to meet the requirements of the MHCLG advice note (January 2020) as they would appear not to achieve a minimum rating of 'Class A2-s3,d2 or better'.
- The construction arrangements / components utilised for the upper additions of floor levels 5 and 6 (wall type 3 - timber frame construction)

are considered not to meet the requirements of the Building Regulations 2010 (Regulation 7(4)) as they would appear not to achieve a minimum rating of Class A2-s1, d0 or A1.

- The composite panels utilised within the spandrel / window insulated panels are considered to be both combustible and flammable (Plastic Coating (Polyvinyl Chloride PVC), Fibreboard (Cellulose / wood fibres) and White Foam Insulation (Polystyrene)) with the Polystyrene core also producing droplets of flaming molten polymer. As it is assumed that the composite panels feature the same composition both externally and internally (to be verified), the risks associated with accidental ignition and fire spread across the facade are increased.
- The timber decking (attachment type 1) and high pressure laminate privacy panels (attachment type 2) installed across the facades are considered to be both combustible and flammable, representing an increased risk of fire spread across the building.

Due to the potentially combustible and flammable materials across the buildings facades, the fire risk cannot be considered as 'low'.

0.6 Remediation Recommendations

The following remediation measures are recommended to assist in mitigating the fire risks to an acceptable level:

0.6.1 Short Term

Clear dialogue should be established between the responsible person and the relevant fire and rescue service to ensure all parties are aware of the current building arrangements including any risks associated with the combustible High Pressure Laminate system, the timber frame constructed fifth and sixth floor levels, spandrel panels and timber decking to balconies.

Clear dialogue should be established between the responsible person and the current occupants of all apartments to assist in minimising the risks associated with external fires, including:

- All external ignition sources (smoking / BBQ's) should be removed from balcony areas.

The current fire risk assessment should be reviewed and updated where necessary following the findings evidenced in this report. This review should include consideration of the current evacuation strategy (which the current assessment fails to highlight) to establish its suitability. If the current strategy is found to be

inappropriate with regards to the current risk, the National Fire Chiefs Council (NFCC) guidance should be considered.

Confirm that the junction between the existing external wall and the existing structural floor is adequate to ensure horizontal compartmentation.

The fire risk from the basement level and ground floor commercial and retail occupancies should be assessed, with particular attention of any occupancies with cooking / frying facilities.

0.6.2 Medium Term

The following medium-term actions focus on the fifth and sixth floor levels that incorporate the High Pressure Laminate / timber framing systems (wall type 3), where the greatest risk of external fire spread exists. These actions are aiming to deliver a proportional response to the risk of external fire spread.

The options available are as follows:

1. If evidence can be provided that the external wall / cladding system (wall type 3) used on the Spectrum Building has been subject to a BR135 classification, a detailed survey must be undertaken to identify the as built construction and ensure the integrity of the external wall system from an external fire spread perspective is as per the classified system (including cavity barriers).
2. Undertake a holistic fire engineering analysis to determine the additional fire safety measures necessary to ensure an adequate level of fire safety accounting for the High Pressure Laminate / timber framing systems (wall type 3) at fifth and sixth floor levels. This assessment should be undertaken in consultation with the fire and rescue service, building insurer and the residents of the Spectrum Building.
3. Remove the external wall / cladding system and replace with materials that achieve Class A2-s3,d2 or better, to demonstrate that the external wall / cladding system meets the guidance within the MHCLG advice note (January 2020).

Irrespective of the option selected above, the spandrel panels (wall type 4), timber decking to balconies (attachment type 1) and High Pressure Laminate privacy screens (attachment type 2) should be replaced with materials that meets the MHCLG advice note (January 2020).

0.6.3 Long Term

Given that the Building Safety Bill is highly likely to be legislated over the next two to three years, it is recommended that the actions undertaken should ensure that the Spectrum Building will be in a position to demonstrate structural and fire safety standards against the new legislation and regulations including:

- Development of a Safety Case.
- Collection and presentation of the necessary building information in a digital format.

Please Note: This is not an exhaustive list, nor is it intended to act as a design guide for compliance nor to provide legal advice in relation to any applicable British Standards, Guidance, Regulatory requirements or statutory obligations.

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1.0 INTRODUCTION

- 1.1 Ark Sustainability Ltd (Ark) has been instructed by Chadwell Properties LLP to undertake investigations of the external façade Spectrum Building, 22 Freshwater Road, Dagenham, RM8 1EH to support meeting the requirements of the Ministry of Housing Communities and Local Government (MHCLG) current guidance regarding external façade and cladding systems.
- 1.2 Following the Grenfell disaster and the publication of numerous advice notes and guidance issued by MHCLG regarding external façades and cladding systems (with the most recent dated January 2020) along with the publication of the Building (Amendment) Regulations 2018 (S.I. 2018/1230) banning certain cladding materials, there is a clear need for owners to determine the suitability and sufficiency of the materials used in the external façade construction and importantly whether or not the external facades are meeting the recommendations contained within the said advice notes and guidance.
- 1.3 Ark has developed a methodology for undertaking such investigations based on the advice and guidance issued by the MHCLG which will provide the client with a high level of validation and verification of the composition of an external façade and how this does or does not meet the recommendations, guidance and advice provided by the MHCLG.

1.4 Scope and Exclusions

- 1.4.1 This report and investigation is limited to the external façade of Spectrum Building, 22 Freshwater Road, Dagenham, RM8 1EH only and in line with the proposed methodology as set out in Ark's proposal reference ASLPR200228B.
- 1.4.2 The facade survey and investigation is intended to provide indicative evidence as to the facade composition and the materials used to assist with a determination for the issuance of an EWS1 Form. The facade survey and investigation is by no means conclusive as it limited to representative sampling.
- 1.4.3 In this report - elements of building structure and fabric may be referred to, but this is for reference only and is not to be relied upon for determination of composition nor condition. Where we feel further investigation is merited, specific reference to this will be made in our report. The report is not intended to comment on the condition and the quality of the installation of facade components and where reference is made to these, the purpose is to provide context to observations where appropriate.
- 1.4.4 Whilst the report in various areas refers to the MHCLG guidance, the scope is limited to the guidance relating to the external façade and any attachments only. It excludes consideration of the guidance in relation to other areas, such as smoke control systems and fire doors.

1.5 Methodology

1.5.1 In line with the agreed methodology as detailed within Proposal ASLPR200228B, the following methodology has been adopted.

1.5.2 Stage One & Two - Desk Top Review, Orientation Survey & RAMS

- Initial desk-top research of the information available (on public databases and open sources) - product literature, fire test results, client held information/reports etc and other publicly available information relating to the property.
- Orientation visit undertaken at the building subject to survey and an initial assessment of the external wall construction and cladding systems.
- Desk-top review and method statement produced detailing the survey and investigation method (Desk-Top Review and Method Statement).

1.5.3 Stage Three - Sampling and Investigation Survey

- Appointment of competent specialist surveying/fire engineering consultant
- Review of any available/relevant documentation provided by the client including a copy of any existing cladding survey or details/O&M Manuals (containing as-built documentation, specification and drawings) and other related documentation and photographs for reference purposes.
- Intrusive investigation of the external façade construction by representative sampling using endoscope technology and the taking of small-bore samples where available and appropriate.

1.5.4 Stage Four - Assessment of Facade Materials

- Samples analysis and assessment at a UKAS registered laboratory
- Review of laboratory analysis report and survey findings by the appointed Consultant.

1.5.5 Stage Five - Evidence Report and EWS1 submission

The purpose of this final report is to provide clients with a formal understanding of the external façade construction and fire safety arrangements and to provide formal due diligence in determining compliance to current guidance and to enable the issuance of an EWS1 form.

- Appointed Consultant will consider the available documentary evidence together with the on-site investigation data and laboratory results
- Combining all the available information a formal investigation report will be produced.

- Where appropriate - a Chartered Fire Engineer will review the findings and the recommendations for remediation action in accordance with guidance issued by MHCLG (2020) and the IFE (Guidance Note 1).

- 1.6 Where it is clear that insufficient evidence is available to confirm compliances or non-conformance relating to the external facade in respect of the advice and guidance issued by the MHCLG along with the 2018 Regulations, this will be clearly indicated in the section entitled 'Recommendations for Remediation Work'. This will provide a clear route for the client to achieve the necessary standard of compliance and evidence in respect of the EWS1 Form and MHCLG Guidance (2020).

Note: Where clients wish ASL to project manage or review remediation work schemes then this will be subject to a separate proposal.

- 1.7 A Fire risk assessment which includes consideration of the findings of this report may also be required in order to provide a determination for the purposes of the EWS1 Form and managing any risks safely within the building under review. Where this is necessary ASL with advice the client and this is subject to a separate proposal.

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1.8 Documentary Evidence

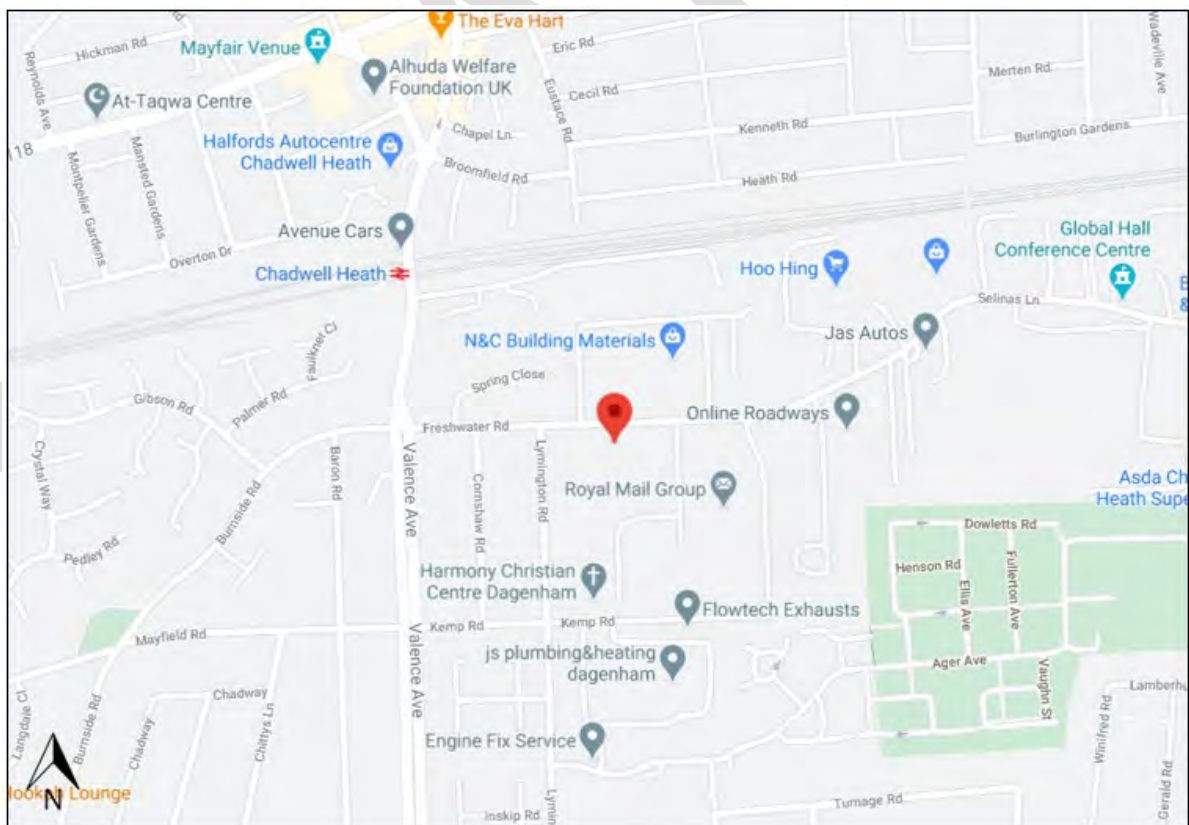
1.8.1 The following evidence has been provided by the instructing client or was available from alternative sources at the time of compiling this report.

Documentary Evidence	Provided by Client YES/NO?	Available from alternative Source YES/NO?	Source and Document Dates?	Drawing / Document References
'Working Drawings'	Yes	No	MGL Architects, August 2013. Block Management UK. 29.09.2020.	2927.WD.00 to 07, 09 to 12, 20, 21, 27, 28, 34, 41 to 47, 62 to 71.
'Working Drawings' Technical Specification / details	Yes	No	MGL Architects, August 2013. Block Management UK. 29.09.2020.	2927.WD.00 to 07, 09 to 12, 20, 21, 27, 28, 34, 41 to 47, 62 to 71.
Fire Strategy Drawings	Yes	No	MGL Architects, August 2013. Block Management UK. 29.09.2020.	2927.WD.10 to 12.3
Fire Risk Assessment	Yes	No	Source Fire Risk Management 18.03.2019	RB-Q86LY8
Operations & Maintenance Manuals (O&M)	No	No	N/A	N/A
Compartmentation Plan	Yes	No	MGL Architects, August 2013. Block Management UK. 29.09.2020.	2927.WD.10 to 12.3
Fire Alarm & Detection System	Yes	No	MGL Architects, August 2013. Block Management UK. 29.09.2020.	2927.WD.10 to 12.3 Annotated on working drawings.

Documentary Evidence	Provided by Client YES/NO?	Available from alternative Source YES/NO?	Source and Document Dates?	Drawing / Document References
Smoke Control Systems	Yes		MGL Architects, August 2013. Block Management UK. 29.09.2020.	2927.WD.10 to 12.3 Annotated on working drawings.
AWSS	N/A	N/A	N/A	N/A
Wet/Dry Riser	Yes		MGL Architects, August 2013. Block Management UK. 29.09.2020.	2927.WD.10 to 12.3 Annotated on working drawings.
Cladding System Technical Specification/ Design	Yes	No	MGL Architects, August 2013. Kingspan Benchmark Sandberg Block Management UK. 29.09.2020.	Cladding details - 2014.09.16 - Detail 43 and 46 Trespa Product Data Sheet. May 2013. Cladding Investigation Report. 63594/X/01.

2.0 DESCRIPTION OF PROPERTY

- 2.1.1 Spectrum Building, 22 Freshwater Road, Dagenham, RM8 1EH is a detached, mixed use building located within the London Borough of Barking and Dagenham.
- 2.1.2 The existing former office building has been extended upwards and converted to provide commercial spaces at basement and ground floor levels with 60 individual residential apartments formed between first and sixth floor levels. Plant and services are contained within the basement level and a communal roof terrace is provided to the top of the building.
- 2.1.3 The building is provided with two stair cores and two passenger lifts. Stair one and both lift cores, one of which is a fire fighting lift is located to the east elevation with stair two being located to the west elevation. The premise benefits from a Grade A LD2 fire alarm system, dry rising main, smoke venting provisions at the head of the stair cores and communal residential corridors and protected stair cores.
- 2.1.4 The fire risk assessment confirms that the building operates a 'full evacuation' procedure. (Source Fire Risk Management, RB-Q86LY8, 18.03.2019).



2.2 Determining Building Height

2.2.1 For the purposes of this report the method outlined in diagram D6 of the building regulations has been used to determination approximate building height.

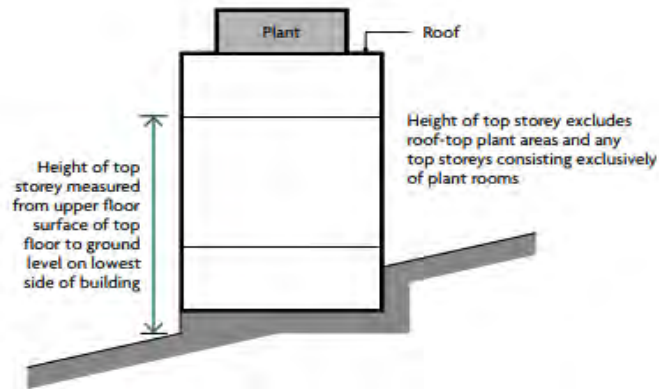


Figure 1 – Diagram D6 Approved Document B - Height of top storey in building.

2.2.2 The Finished Floor Level (FFL) of the uppermost storey has been calculated as being **19.7 metres** above ground level.

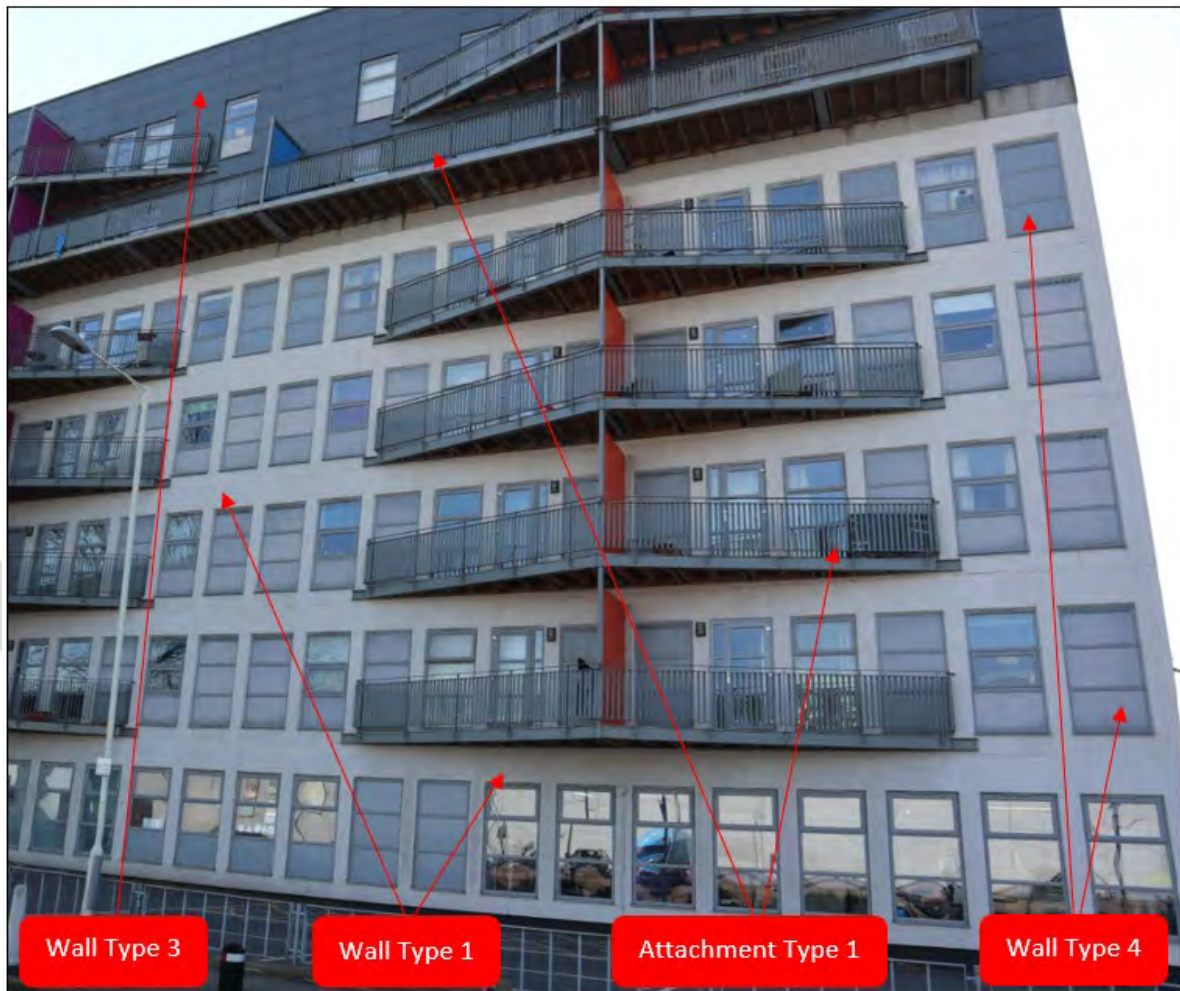
2.3 Basis of Fire Safety Design

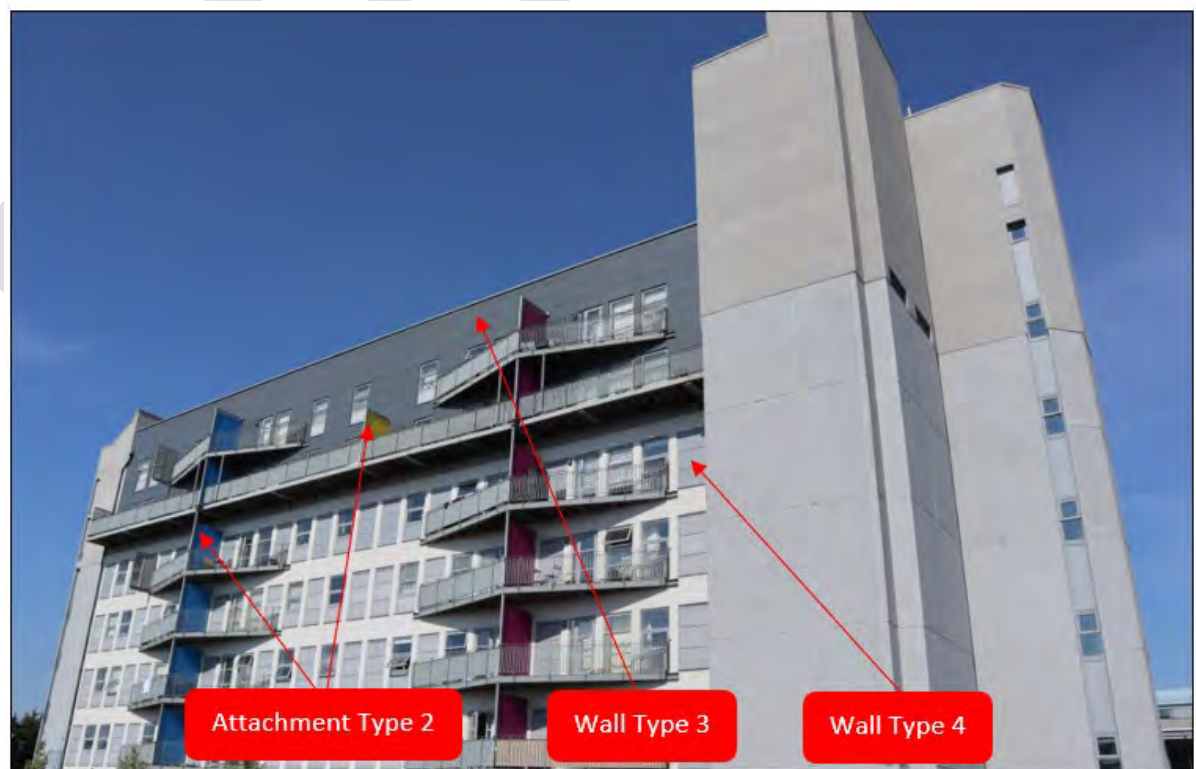
Basis of Fire Safety Design Provided?	Approved Document B	BS9991	BS9999	BS 7974
Yes	X			

Please Note: Where there is no clear evidence of the basis of design it has been assumed that the building has been design in accordance with Approved Document B, appropriate to date of construction (where known).

3.0 DETERMINATION OF EXTERNAL FAÇADE AND ADEQUACY

- 3.1 The following observations/statements are based upon a visual inspection, sampling survey, intrusive investigation and data/information made available or obtained through publicly available databases.
- 3.2 The statements detailed below as to the facade composition should only be considered to be indicative and may be used in conjunction with more wholistic assessments fire safety risk assessments which taken into account building construction, design and fire safety measures.
- 3.3 The following wall types have been established based on the intrusive survey carried out on 24th September 2020. The full and detailed survey report is provided in Appendix A.





Wall Type 1 – Solid Concrete

#id	Material (External Inwards)	Thickness	Combustibility	Reference
1	Solid Concrete (Working drawing 2927.WD.34 indicates a thickness of 300mm)	300mm	A1	2000/147/EC
2	DPM (Assumed based on working drawing 2927.WD.34)	< 1mm	Unknown	N/A
3	Timber Batten (Assumed based on working drawing 2927.WD.34)	25mm	<i>Untreated timber is likely to fall within Euroclass Classification D*</i>	N/A
4	Thermal Insulation (Celotex PL4000) (polyisocyanurate (PIR)) laminated to; Plasterboard (Assumed based on working drawing 2927.WD.34)	60mm 12.5mm	Euroclass B-s1, d0	Celotex PL4000 Product Data Sheet

Wall Type 2 - Render

#id	Material (External Inwards)	Thickness	Combustibility	Reference
1	Render	15mm	Unknown	N/A
2	Hollow Concrete Masonry Blockwork (Assumed based on working drawing 2927.WD.44)	215mm	A1	2000/147/EC
3	Timber Batten (Assumed based on working drawing 2927.WD.44)	25mm	<i>Untreated timber is likely to fall within Euroclass Classification D*</i>	N/A
4	Fireline Plasterboard (Assumed based on working drawing 2927.WD.44)	15mm	Unknown	N/A

Wall Type 3 – High Pressure Laminate Panel

#id	Material (External Inwards)	Thickness	Combustibility	Reference
1	High Pressure Laminate Panel (Trespa Meteon) (Compressed wood fibres, acrylic coating)	8mm	Combustible and flammable Class D, s2, d0	C9054 4/1, C9056 6/1, C9057 7/1, C9058 8/1, Kingspan Benchmark. Trespa Product Data Sheet. May 2013.
2	Clear Cavity (Appearing to be formed with timber battens)	50mm	N/A	N/A
3	Breathable Membrane (Polypropylene)	< 1mm	Combustible and flammable. Dripped flaming molten polymer.	C9055 4/2
4	Timber Oriented Strand Board (Wood cellulose)	15mm	Combustible and flammable. <i>Untreated timber is likely to fall within Euroclass Classification D*</i>	C9059 8/2, C9061 10/1
5	Brown Insulation Wool (Soda-lime-silicate, glass wool) (Fixed between timber frame – see id 6)	150mm	Not combustible or flammable	C9060 8/3, C9062 10/2
6	Timber Framing (Assumed based on working drawing 2927.WD.43)	140mm	<i>Untreated timber is likely to fall within Euroclass Classification D*</i>	N/A
7	Vapour Control Layer (Assumed based on working drawing 2927.WD.43)	< 1mm	N/A	N/A
8	Timber Batten (Assumed based on working drawing 2927.WD.43)	50mm	<i>Untreated timber is likely to fall within Euroclass Classification D*</i>	N/A
9	Fireline Plasterboard (Assumed based on working drawing 2927.WD.43)	15mm x 2 layers	Unknown	N/A

Wall Type 4 – Spandrel / Window Insulated Panel

#id	Material (External Inwards)	Thickness	Combustibility	Reference
1	Plastic Coating (Polyvinyl Chloride PVC)	< 1mm	Combustible and flammable	C9063 19/1, C9065 21/1
2	Fibreboard (Cellulose / wood fibres)	5mm	Combustible and flammable	C9063 19/1, C9066 21/2
3	White Foam Insulation (Polystyrene)	30mm	Combustible and flammable. Dripped flaming molten polymer. <i>Polystyrene products are likely to fall within Euroclass Classification D to F*</i>	C9064 20/1, C9067 21/3
4	Inner Face of Panel (Assumed plastic coating on fibreboard as id 1 and 2)	Unknown	Combustible and flammable (Assumed based on id 1 and 2)	N/A

In addition to the various wall types, the following attachments to the façade were noted:

Attachment Type 1 - Balconies

#id	Attachment	Construction	Combustibility	Reference
1	Balconies	Steel Structure and Balustrading	A1	2000/147/EC
		Timber Decking	<i>Untreated timber is likely to fall within Euroclass Classification D*</i>	N/A

Attachment Type 2 – Privacy Screens

#id	Attachment	Construction	Combustibility	Reference
1	Privacy Screens to Balconies	High Pressure Laminate Panel (Compressed wood fibres, acrylic coating)	Combustible and flammable.	C9056 6/1

** The brand / type / specification of the product 'as installed' was not established, therefore, any associated technical literature was not reviewed. The classification range is included to aid understanding of the risks posed by the product / materials.*

3.4 Materials Testing

3.4.1 Laboratory Details

Sandberg was one of the first construction materials related laboratories to receive UKAS testing accreditation in May 1985 (by the UKAS fore-runner NATLAS). Its laboratories have UKAS testing accreditation for a wide range of sampling and testing services both in the laboratory and on-site. Sandberg is also a corporate member of the Institute of Expert Witnesses.

Sandberg Consulting Engineers, Sandberg LLP, 5 Carpenters Place, London, SW4 7TD.

3.4.2 Laboratory Analysis

Following the analysis of the samples as referred to in the Survey Report the samples were tested and the following results obtained;

Sample No	Description	Laboratory Analysis	Determination of Combustibility	Presence of Fire Retardant
C9053 1/1, C9054 4/1, C9056 6/1, C9057 7/1, C9058 8/1	High Pressure Laminate	Compressed wood fibres, acrylic coating	Combustible and flammable	N/A
C9055 4/2	Breathable Membrane	Polypropylene	Combustible and flammable. Dripped flaming molten polymer.	N/A
C9059 8/2, C9061 10/1	Timber Oriented Strand Board	Wood / Cellulose	Combustible and flammable	N/A
C9060 8/3, C9062 10/2	Brown Insulation Wool	Soda-lime-silicate, glass wool	Not combustible or flammable	N/A
C9063 19/1, C9066 21/2	Fibre Board	Wood / Cellulose	Combustible and flammable	N/A
C9063 19/1, C9065 21/1	Plastic Coating	PVC	Combustible and flammable	N/A
C9064 20/1, C9067 21/3	White Foam Insulation	Polystyrene	Combustible and flammable. Dripped flaming molten polymer.	Not Present

3.5 BR135 Testing and Fire Performance Standards

- 3.5.1 The materials utilised within the existing construction arrangements (wall type 1 (excluding the internal insulated lining)) are representative of those primarily used within traditional construction methods, therefore a BR135 assessment would not be appropriate for these materials and arrangements
- 3.5.2 It has not been possible to fully clarify whether any comparable BS 8414 testing achieving BR135 classification exists for the newer arrangement featuring the high pressure laminate panels (wall type 3).
- 3.5.3 Copies of the Trespa product data sheet and details of a previous cladding investigation undertaken in 2018 by Sandberg (63594/X/01) were provided to Ark Sustainability Ltd for reference along with additional O&M documentation. Following visual inspection, sampling and investigation, Sandberg confirmed that an 8mm Trespa panel system had been installed at fifth and sixth floor levels of the Spectrum Building.

The technical literature associated with the Trespa façade panels clarifies that two types of panel were available:

Trespa Meteor panels having a reaction to fire classification of Class D,s2,d0.
Trespa Fire Retardant panels having a reaction to fire classification of Class B,s2,d0.

The Sandberg Report (63594/X/01) clarifies; *‘without a reference material, it is not possible to comment on whether the performance of the cladding panels indicates the presence of any fire retardant coating’.*

Both Trespa panels were tested in accordance with EN 13501-1:2002 Fire Classification of Construction Products and Building Elements, EN 438-7 and ISO 4586 and achieved ratings of Class D, s2, d0 and B, s2, d0 respectively. On this basis, it is clear that the panels fall short of the requirements outlined within the MHCLG advice note (January 2020) paragraph 3.10:

‘The Expert Panel’s view is that the clearest way to demonstrate that materials in the external walls system do not present a risk of fire spread is to confirm that they are made using materials that achieve Class A2-s3,d2 or better, previously referred to as limited combustibility.’

However, Paragraph 5.10 of the MHCLG advice note (January 2020) clarifies further:

‘The Expert Panel’s advice is that an external wall system using Class C-s3,d2 or D-s3,d2 HPL panels on residential buildings of 18m or more to the height of the top occupied storey would not have met the functional requirements of the Building Regulations, or associated advice. Any such system presents a notable

fire hazard on these buildings. Where these materials are identified, building owners should take immediate measures to remediate their system’.

It is therefore recommended that further laboratory testing be undertaken to establish the specification and reaction to fire classification of the Trespa panel system installed on the upper storeys at the Spectrum Building. Having an understanding of the panels installed will allow for greater certainty when assessing risks and determining whether remediation works are appropriate.

- 3.5.4 It was noted that when reviewing the Trespa panel fixing systems, whilst it was shown being fixed onto timber batten framing, the ‘as built’ arrangement on site (timber frame construction) was not depicted. It is therefore not possible to establish whether the system has been installed to the manufacturers direction and specification.

3.6 Cavity Barriers

- 3.6.1 During the intrusive investigation undertaken on 24th September 2020, it was established that there was a 50mm clear cavity formed by timber batten framing behind the high pressure laminate panels (wall type 3). This construction arrangement would appear to be consistent with the working drawing (2927.WD.46) which shows cavity barrier arrangements being formed with timber battens fixed at party wall / floor locations along with ‘TCB Rockwool’ cavity barriers installed at party wall lines behind the Timber Oriented Strand Board. Due to the limited nature of the intrusive survey and the difficulty in establishing party wall lines externally, it could not be confirmed whether suitable timber batten and ‘TCB Rockwool’ cavity barriers had been installed as shown in the working drawings.
- 3.6.2 There is also not sufficient evidence to determine both the presence and adequacy of cavity barrier arrangements across the whole of the building. Inadequate / incorrectly installed / missing cavity barriers to compartment lines is considered to significantly increase the risk of unseen fire spread from compartment to compartment, potentially affecting escape routes and evacuation strategies across the building.
- 3.6.3 Due to the solid nature of the concrete walls (wall type 1) and rendered walls (wall type 2), cavity barrier installations would not be applicable for this construction arrangement.

3.7 Building Regulations

- 3.7.1 Fire resistance - An external wall may need fire resistance to meet the requirements of the applicable Building Regulations (Section 3 (Means of escape – flats), Section 6 (Load-bearing elements of structures – flats) or Section 11 (Resisting fire spread from one building to another). This should be considered as part of any fire risk assessment for the building as is not addressed within this report.

- 3.7.2 Non-combustible materials in external walls of tall buildings - Regulation 7(1) of the Building Regulations requires that materials used in building work are appropriate for the circumstances in which they are used. Regulations 7(2) set requirements in respect of external walls and specified attachments in relevant building. Regulation 7(2) applies to any building with a storey of at least 18m above ground level as measured using the method outlined in diagram D6 and which contains one or more dwellings; an institution; or a room for residential purposes (excluding any room in a hostel, hotel, or a boarding house). It requires that all materials which become part of an external wall or specified attachment achieve class A2-s1, d0 or class A1, other than the exemption described in regulation 7(3).
- 3.7.3 Combustibility of external walls - Buildings to which regulation 7(2) of the Building Regulations apply require that all materials used within the external wall construction should achieve class A2-s1, d0 or class A1. This does not apply to the following;
- cavity trays when used between two leaves of masonry;
 - any part of a roof (other than any part of a roof which falls within paragraph (iv) of regulation 2(6)) if that part is connected to an external wall;
 - door frames and doors;
 - electrical installations;
 - insulation and water proofing materials used below ground level;
 - intumescent and fire stopping materials where the inclusion of the materials is necessary to meet the requirements of Part B of Schedule 1;
 - membranes;
 - seals, gaskets, fixings, sealants and backer rods;
 - thermal break materials where the inclusion of the materials is necessary to meet the thermal bridging requirements of Part L of Schedule 1; or
 - window frames and glass.
- 3.7.4 Please note: for the purposes of the EWS1 Form - the requirement for meeting 'limited Combustibility' is different. The definition of material of limited combustibility (BS9991:2015) is as follows; a non-combustible material; or any material of density 300 kg/m³ or more which, when tested in accordance with BS 476-11, does not flame and the rise in temperature on the furnace thermocouple is not more than 20 °C; or any material with a non-combustible core of 8 mm thick or more, having combustible facings (on one or both sides) not more than 0.5 mm thick; or a material classified as class A2-s3, d2 in accordance with BS EN 13501-1, when tested in accordance with BS EN ISO 1182 or BS EN ISO 1716 and BS EN 13823.
- 3.7.5 Glass Balustrading - Glass in balustrades must meet the functional requirements of Part K of the building regulations. Generally, this may mean that glazing within balustrades is either laminated with a PVB or SGP interlayer. Laminated glass used balconies in buildings for which regulation 7(2) of the building regulations applies would not meet the fire classification requirements by virtue of the PVB or SGP layer within layers of glass float.

3.8 Observations and Comments Regarding Building Regulations

3.8.1 Under Regulation 7(4) of the Building Regulations 2010, materials which become part of an external wall, or specified attachment, of a 'relevant building' are to be of European Classification A2-s1, d0 or A1, classified in accordance with BS EN 13501-1:2007+A1:2009 entitled "Fire classification of construction products and building elements: Classification using test data from reaction to fire tests". Based on the design and height of the Spectrum Building, 22 Freshwater Road, Dagenham, RM8 1EH, it would fall within the requirements and therefore be classified as a relevant building.

3.8.2 Following the intrusive investigation survey it has been established that:

It is currently unclear whether the high pressure laminate panels installed to the upper additions of floor levels 5 and 6 (wall type 3) meets with the guidance of the MHCLG advice note (January 2020).

The laminated insulating material / plasterboard assumed to have been installed to the inner face of the existing concrete structure (wall type 1), Polyisocyanurate (PIR) is considered to have a reaction for fire classification of Euroclass B-s1, d0 (Celotex PL4000 Product Data Sheet).

The construction arrangements / components utilised for the upper additions of floor levels 5 and 6 (wall type 3 - timber frame construction) are considered not to meet the requirements of the MHCLG advice note (January 2020) as they would appear not to achieve a minimum rating of 'Class A2-s3, d2 or better'.

The construction arrangements / components utilised for the upper additions of floor levels 5 and 6 (wall type 3 - timber frame construction) are considered not to meet the requirements of the Building Regulations 2010 (Regulation 7(4)) as they would appear not to achieve a minimum rating of Class A2-s1, d0 or A1.

The composite panels utilised within the spandrel / window insulated panels are considered to be both combustible and flammable (Plastic Coating (Polyvinyl Chloride PVC), Fibreboard (Cellulose / wood fibres) and White Foam Insulation (Polystyrene)) with the Polystyrene core also producing droplets of flaming molten polymer. As it is assumed that the composite panels feature the same composition both externally and internally (to be verified), the risks associated with accidental ignition and fire spread across the facade are increased.

The timber decking (attachment type 1) and high pressure laminate privacy panels (attachment type 2) installed across the facades are considered to be both combustible and flammable, representing an increased risk of fire spread across the building.

4.0 EWS1 FORM DETERMINATION

4.1 General

- 4.1.1 This provision of an EWS1 form is intended for recording using a consistent manner and approach what assessments has been carried out for the external wall construction of a particular residential apartment buildings where the highest floor is 18m or more above ground level or where specific concerns exist.
- 4.1.2 The notes accompanying the EWS1 form state clearly that it should not be used for other purposes.
- 4.1.3 The EWS1 form is to be completed by a competent person with the levels of expertise as described in Notes 2 and 3 on the form.
- 4.1.4 This review is for the sole and exclusive use of the client organisation named on the form. No responsibility is accepted to any third party for the whole or any part if its contents. For the avoidance of doubt, the term 'third party' includes (but is not limited to): any lender who may see the review during the process through which they come to make a loan secured on any part of the respective property; and any prospective purchaser who may see the review during the process through which they come to purchase an interest in any part of the respective property.
- 4.1.5 The investigation must include evidence of the fire performance of the actual materials installed. This includes either a physical inspection by the signatory to this form, or inspection of photographic or similar information gathered by a 3rd party (subject to the signatory having sufficient confidence in that 3rd party).
- 4.1.6 It would also include the standards of construction of key fire safety installations such as cavity barriers. Given the nature of external walls this would typically involve investigations in a limited number of locations as detailed above. The notes to the form make it clear that a review of design drawings may assist but on their own would not be sufficient. Where the wall construction includes multiple wall types, the investigation should include each type.
- 4.1.7 Attached to the EWS1 form is a flowchart that is to be used to determine what option of form can be signed.

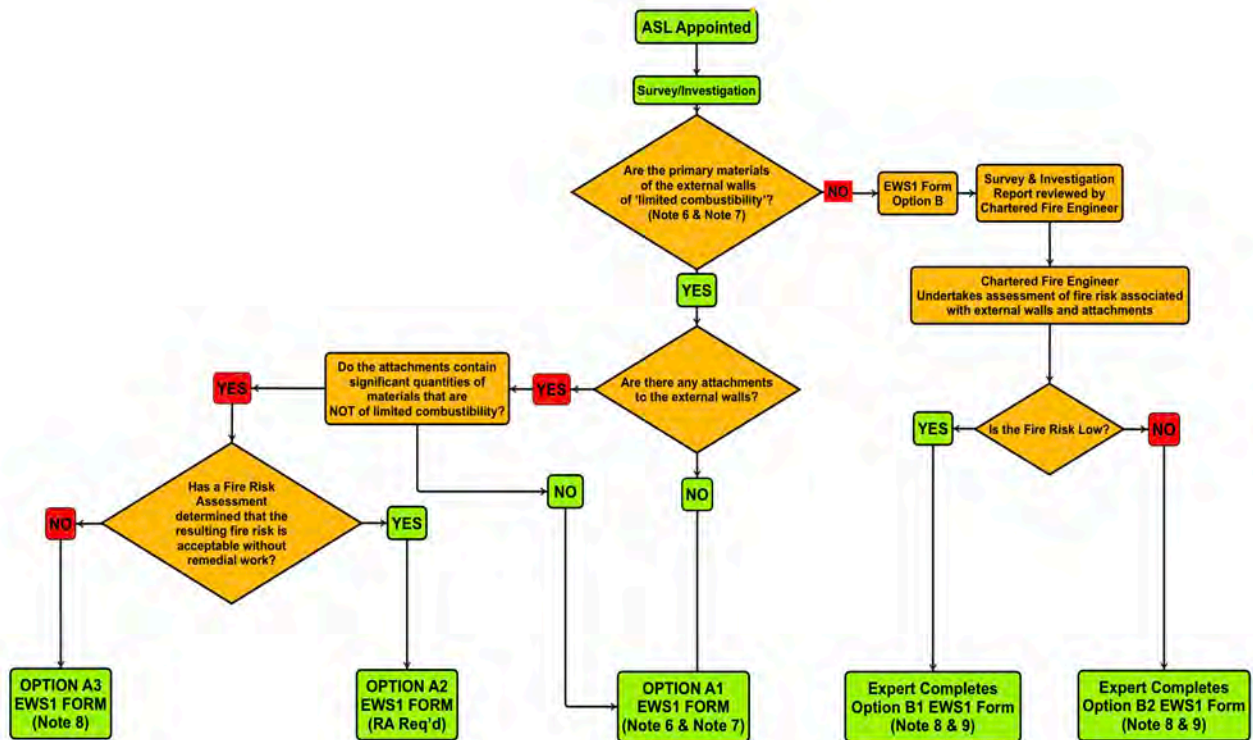


Figure – EWS1 Form Flowchart (ASL, 2020)

EWS1 Form Determination

4.2 The EWS1 determination for Spectrum Building, 22 Freshwater Road, Dagenham, RM8 1EH is considered as follows:

The overall EWS1 Form Determination reached by the appointed Chartered Fire Engineer is that of **B2**. This has been determined due to:

The primary materials of the external walls are considered not to be of limited combustibility as defined within BS 9991:2015 as :

- It is currently unclear whether the high pressure laminate panels installed to the upper additions of floor levels 5 and 6 (wall type 3) meets with the guidance of the MHCLG advice note (January 2020).
- The construction arrangements / components utilised for the upper additions of floor levels 5 and 6 (wall type 3 - timber frame construction) are considered not to meet the requirements of the MHCLG advice note (January 2020) as they would appear not to achieve a minimum rating of 'Class A2-s3,d2 or better'.

- The construction arrangements / components utilised for the upper additions of floor levels 5 and 6 (wall type 3 - timber frame construction) are considered not to meet the requirements of the Building Regulations 2010 (Regulation 7(4)) as they would appear not to achieve a minimum rating of Class A2-s1, d0 or A1.
- The composite panels utilised within the spandrel / window insulated panels are considered to be both combustible and flammable (Plastic Coating (Polyvinyl Chloride PVC), Fibreboard (Cellulose / wood fibres) and White Foam Insulation (Polystyrene)) with the Polystyrene core also producing droplets of flaming molten polymer. As it is assumed that the composite panels feature the same composition both externally and internally (to be verified), the risks associated with accidental ignition and fire spread across the facade are increased.
- The timber decking (attachment type 1) and high pressure laminate privacy panels (attachment type 2) installed across the facades are considered to be both combustible and flammable, representing an increased risk of fire spread across the building.

Due to the potentially combustible and flammable materials across the buildings facades, the fire risk cannot be considered as 'low'.

5.0 REMEDIATION WORK

5.1 Recommendations for Remediation Work

This section is intended to provide a brief overview of what might be required to the external façade / materials to enable compliance with current regulations, guidance and standards and how this might impact upon the determination for the EWS1 Form.

5.2 Remediation Recommendations

The following remediation measures are recommended to assist in mitigating the fire risks to an acceptable level:

5.2.1 Short Term

Clear dialogue should be established between the responsible person and the relevant fire and rescue service to ensure all parties are aware of the current building arrangements including any risks associated with the combustible High Pressure Laminate system, the timber frame constructed fifth and sixth floor levels, spandrel panels and timber decking to balconies.

Clear dialogue should be established between the responsible person and the current occupants of all apartments to assist in minimising the risks associated with external fires, including:

- All external ignition sources (smoking / BBQ's) should be removed from balcony areas.

The current fire risk assessment should be reviewed and updated where necessary following the findings evidenced in this report. This review should include consideration of the current evacuation strategy (which the current assessment fails to highlight) to establish its suitability. If the current strategy is found to be inappropriate with regards to the current risk, the National Fire Chiefs Council (NFCC) guidance should be considered.

Confirm that the junction between the existing external wall and the existing structural floor is adequate to ensure horizontal compartmentation.

The fire risk from the basement level and ground floor commercial and retail occupancies should be assessed, with particular attention of any occupancies with cooking / frying facilities.

5.2.2 Medium Term

The following medium-term actions focus on the fifth and sixth floor levels that incorporate the High Pressure Laminate / timber framing systems (wall type 3), where the greatest risk of external fire spread exists. These actions are aiming to deliver a proportional response to the risk of external fire spread.

The options available are as follows:

1. If evidence can be provided that the external wall / cladding system (wall type 3) used on the Spectrum Building has been subject to a BR135 classification, a detailed survey must be undertaken to identify the as built construction and ensure the integrity of the external wall system from an external fire spread perspective is as per the classified system (including cavity barriers).
2. Undertake a holistic fire engineering analysis to determine the additional fire safety measures necessary to ensure an adequate level of fire safety accounting for the High Pressure Laminate / timber framing systems (wall type 3) at fifth and sixth floor levels. This assessment should be undertaken in consultation with the fire and rescue service, building insurer and the residents of the Spectrum Building.
3. Remove the external wall / cladding system and replace with materials that achieve Class A2-s3,d2 or better, to demonstrate that the external wall / cladding system meets the guidance within the MHCLG advice note (January 2020).

Irrespective of the option selected above, the spandrel panels (wall type 4), timber decking to balconies (attachment type 1) and High Pressure Laminate privacy screens (attachment type 2) should be replaced with materials that meets the MHCLG advice note (January 2020).

5.2.3 Long Term

Given that the Building Safety Bill is highly likely to be legislated over the next two to three years, it is recommended that the actions undertaken should ensure that the Spectrum Building will be in a position to demonstrate structural and fire safety standards against the new legislation and regulations including:

- Development of a Safety Case.
- Collection and presentation of the necessary building information in a digital format.

Please Note: This is not an exhaustive list, nor is it intended to act as a design guide for compliance nor to provide legal advice in relation to any applicable British Standards, Guidance, Regulatory requirements or statutory obligations.

Remediation Notes

Limitations - The following is intended only as a guide to the legal duties / obligations / requirements which should be considered when undertaking remediation work on buildings. It is not intended as legal advice and is not a comprehensive list of duties/obligations and requirements. If any doubt exists as to these requirements, independent legal advice should be sought.

Legal Considerations - Where remediation work is undertaken to improve the fire safety of a building, it may involve the removal/replacement of both a 'thermal element' of the building and materials used within the facade. This work may therefore fall within the scope of "notifiable works" as defined within the Building Regulations 2010.

If the works are 'notifiable' this means that before undertaking the work, responsible persons must submit a full plans application detailing the work they are proposing to carry out to a 'Building Control Body'. As part of this process responsible persons will be required to pay a fee (fees determined by the body to which you apply) and they are required to undertake a statutory consultation with the relevant Fire Safety Enforcement Authority regarding these plans (usually the local Fire and Rescue Service).

The Regulatory Reform (Fire Safety) Order (2005) applies to premises which are defined as any place and in particular includes any workplace. It does not apply to domestic premises, except for a provision allowing the enforcing authority to prohibit the use of a property in certain circumstances. The Court of Appeal has upheld that the common parts of residential premises are considered non-domestic premises because they are available for use by others as a place of work. The Chief Fire Officers' Association (CFOA) states that: 'For the purposes of clarity, the front doors to flats are considered to be a common protective measure, typically under the control of the occupier as an article 5(4) duty holder, because an early failure of the door can pose a serious risk to the safety of other relevant persons on the premises'. The Order applies to all non-domestic premises, which includes the common parts of apartment buildings and both the common and shared parts of Houses in Multiple Occupation.

The Fire Safety Order imposes numerous legal duties which the responsible person must perform. There is a general duty under the Fire Safety Order to take such fire precautions as may be reasonably required to ensure that premises are safe for the occupants and those in the immediate vicinity and a general duty to carry out a fire risk assessment.

Under Article 15, the responsible person is under a duty to provide appropriate procedures to be followed in the event of serious and imminent danger from fire to relevant persons. By virtue of the Fire Safety Order, the Responsible Person (see definitions) is required to ensure a fire risk assessment is carried out of their premises. This must be a suitable and sufficient assessment of the hazards and risks to which relevant persons are exposed for the purpose of identifying the general fire precautions that need to be taken to comply with the requirements under the Order.

Article 9 Obligations - The responsible person must make a suitable and sufficient assessment of the risks to which relevant persons are exposed for the purpose of identifying the measures they need to take to comply with the requirements and prohibitions imposed on them by the Order. The nature of the assessment will vary according to the type and use of the premises, the persons who use or may use the premises, and the risks associated with that use. A risk assessment should be reviewed regularly by the responsible person to keep it up to date, valid and to reflect any significant changes that may have taken place.

It is recommended that following this issuance of this report and the EWS1 Form (where applicable) that the responsible person ensure that the Risk Assessment for the building is reviewed and updated where appropriate and necessary.

New Fire Safety Bill - Main elements of the Fire Safety Bill include a clarification that the scope of the Regulatory Reform (Fire Safety) Order 2005 to include the external walls of the building (including cladding).

Building Regulation Applications – Under Regulation 3 of the Building Regulations, “Building Work” which would attract a requirement to provide an application, means;

- (a) the erection or extension of a building;
- (b) the provision or extension of a controlled service or fitting in or in connection with a building;
- (c) the material alteration of a building, or a controlled service or fitting, as mentioned in paragraph (2);
- (d) work required by regulation 6 (requirements relating to material change of use);
- (e) the insertion of insulating material into the cavity wall of a building;
- (f) work involving the underpinning of a building;
- (g) work required by regulation 22 (requirements relating to a change of energy status);
- (h) work required by regulation 23 (requirements relating to thermal elements);
- (i) work required by regulation 28 (consequential improvements to energy performance).
- (2) An alteration is material for the purposes of these Regulations if the work, or any part of it, would at any stage result—
 - (a) in a building or controlled service or fitting not complying with a relevant requirement where previously it did; or
 - (b) in a building or controlled service or fitting which before the work commenced did not comply with a relevant requirement, being more unsatisfactory in relation to such a requirement.
- (3) In paragraph (2) “relevant requirement” means any of the following applicable requirements of Schedule 1, namely—
 - Part A (structure)
 - paragraph B1 (means of warning and escape)
 - paragraph B3 (internal fire spread—structure)
 - paragraph B4 (external fire spread)
 - paragraph B5 (access and facilities for the fire service)

- Part M (access to and use of buildings).

Renovation/Replacement of thermal elements - Where renovating or replacing thermal elements to a building regulation 23 of Part L of the building Regulations will apply where;

(1) Where the renovation of an individual thermal element—

(a) constitutes a major renovation; or

(b) amounts to the renovation of more than 50% of the element's surface area; the renovation must be carried out so as to ensure that the whole of the element complies with paragraph L1(a)(i) of Schedule 1, in so far as that is technically, functionally and economically feasible.

(2) Where the whole or any part of an individual element is proposed to be replaced and the replacement—

(a) constitutes a major renovation; or

(b) (in the case of part replacement) amounts to the replacement of more than 50% of the thermal element's surface area; the whole of the thermal element must be replaced so as to ensure that it complies with paragraph L1(a)(i) of Schedule 1, in so far as that is technically, functionally and economically feasible.

Responsible Person - The 'responsible person' who has a number of legal duties under the Regulatory Reform (Fire Safety) Order 2005 is defined in Article 3 as;

(a) in relation to a workplace, the employer, if the workplace is to any extent under his control;

(b) in relation to any premises not falling within paragraph (a)—

(i) the person who has control of the premises (as occupier or otherwise) in connection with the carrying on by him of a trade, business or other undertaking (for profit or not); or

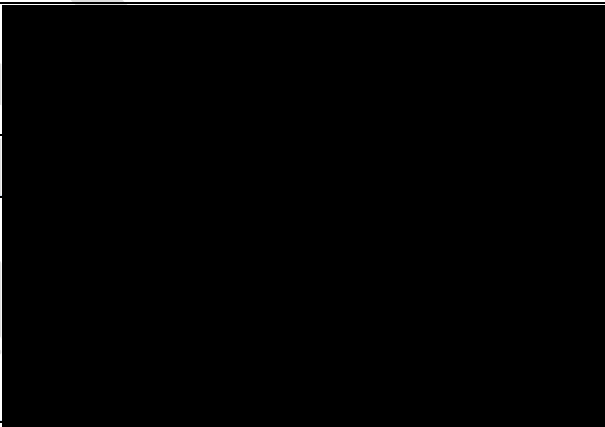
(ii) the owner, where the person in control of the premises does not have control in connection with the carrying on by that person of a trade, business or other undertaking.


Typically, the responsible person is the freeholder or landlord but may be a residential management company.

6.0 CONCLUSIONS

Extent of Facade Survey and Investigation - General Limitations

Ark have provided this report based upon the information gained through documents sighted and provided by the client, during discussions with Client's representatives and site visits/investigations. Although Ark's Consultants are experienced and trained to the highest professional standards, they have no powers under any statutory order to demand entry and the production of documents or information. The advice in the report is therefore given in good faith based upon the evidence seen, the information given and the points discussed at the time of the visits. No guarantee can be given that during any subsequent visit by inspectors with statutory powers other non-compliance may not be found. Ark will not accept responsibility for any loss arising from such a discovery. Whilst every care is taken to interpret the Acts, Regulations and Approved Codes of Practice, these can only be authoritatively interpreted by Courts of Law. As part of this consultancy project, Ark may have had access to client information which is of a confidential or sensitive nature. Such information will be treated in the strictest confidence by Ark and will not be communicated or otherwise transmitted to a third party unless expressly authorised to do so by the Client.

Signed By:	
Name:	
Professional Memberships and Registrations:	
Dated:	21.12.2020

Reviewed By:	
Name:	
Professional Memberships and Registrations:	
Dated:	23.12.2020

APPENDICES

Appendix A – Intrusive Survey Report

Appendix B - Normative References

Appendix C - Chartered Fire Engineer MHCLG Advice Report

DRAFT

Appendix A – Intrusive Survey Report

DRAFT

Activity	External Façade Investigation and Survey (Intrusive)
Location	Spectrum, Dagenham RM8 1EH
Author	
Date	24th September 2020
Project Reference	J000034
Document Type	Survey Record V1.71

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Survey Background

Ark Sustainability Ltd (Ark) has been instructed to undertake investigations of the external façade of the Spectrum building, Dagenham RM8 1EH to support meeting the requirements of the Ministry of Housing Communities and Local Government (MHCLG) current guidance regarding external façade and cladding systems.

Following the publication of the Building (Amendment) Regulations 2018 (S.I. 2018/1230) banning certain cladding materials, there is a clear need for owners to determine the suitability and sufficiency of the materials used in the external façade construction and importantly whether or not the external facades are meeting the recommendations contained within the said advice notes and guidance.

Survey Objectives

- 1.To recover samples from the facade which will then be sent for testing at a UKAS laboratory to determine their composition as per RAMS.
- 2.To conduct further intrusive investigation using a video borescope and gather photographic and contemporaneous notes
- 3.To gather sufficient information to determine the composition of the facade which will then be used along with the laboratory test results to ascertain the correct category of EWS1 to issue.

Survey Scope

This record specifically relates to the external cladding system and its component parts and is no way intended to provide a determination of the 'as built' structure of the building under review. However, where appropriate this may be commented upon.

Survey Limitations

Please use this section to highlight any physical limitations to the survey which occurred and why these limitations existed.

It was only possible to access the front elevations at all levels and the rear elevation at ground level as no vehicular rear access is possible at the site.

Personnel Details:

[REDACTED]

Observers:**Date of Survey:**

24th September 2020

Weather Conditions

Temperature: 14 degrees C

Light conditions: Bright

Humidity: Medium

Wind conditions: Moderate

Pre-start Checks

1. Obtain permission/license from Barking for the use of Lift Access Platform on Pavement and on the public roads where applicable.
2. Confirmation from The building management company that residents/leaseholders and any affected businesses will be advised of the survey work and the possibility of noise/disruption during the course of the investigation.
3. Review RAMS for proposed work.
4. Ensure MEWP Operator has appropriate license / approval to operate
5. Ensure MEWP operator has undertaken daily and other regular checks.
6. Ensure ladders (where appropriate) have been inspected
7. Ensure fall and arrest harnesses have been inspected and are serviceable.
8. Ensure access equipment protective barriers are available to protect pedestrians.
9. Check Building Contractor Site Rules and Procedures.
10. Ensure adequate and appropriate PPE is available.
11. Ensure that Sample location plan is available.
12. Ensure that appropriate equipment is available for sampling and removal of facade elements.

Sequence of Operations / Statement**ALL ELEVATIONS**


13. Please note any obvious existing physical damage to the external facade which was observed prior to the survey (include photographs and detail their location)
14. Undertake all pre start checks.
15. Establish Cordon and Safety Barriers in Pavement area.
16. Ensure MEWP is safe to use and competent operator on site and available.
17. Ensure access route for MEWP is safe and secured to prevent unauthorised access – check to ensure safety of all concerned.
18. VR operative to operate and provide access for Consultant to the joint areas to allow for inspection.
19. Undertake inspection of wall – joints (between party wall and ceiling, party wall and roof cladding, party wall and external wall, party wall and party wall).
20. PPE to be utilised.
21. Expose area of inspection.
22. Ark to complete inspection off Ladder/MEWP as above to determine construction and integrity of external façade, wall and fire stopping etc.
23. Remove and record and store sample evidence including recording sample sites upon survey map.
24. Place inspection covers in sample holes where appropriate.
25. Lower and remove MEWP access equipment and remove protective barriers.



26. Hand back area to client.


Observations of Areas of Existing Damage

The following table is used to record any observations regarding the external facade of the building prior to survey. Existing damage, deterioration and general observations regarding quality should be recorded where relevant in the table.


Location of Noted Existing Defect/Damage	Description/Image of Damage
No significant damage noted	


ELEVATION	EXAMPLE PHOTO
Front	


ELEVATION	EXAMPLE PHOTO
Rear	
Side Left	


ELEVATION	EXAMPLE PHOTO	
Side Right		
Other		


Survey Record


Sample No	Date/Time	X Axis	Y Axis	Datum Point	Photographs	Observations
1/1	24 th September 2020			1		8mm board on timber battens (1/1) 50mm void Breather membrane 10mm OSB board 150mm mineral wool


Sample No	Date/Time	X Axis	Y Axis	Datum Point	Photographs	Observations
						


Sample No	Date/Time	X Axis	Y Axis	Datum Point	Photographs	Observations
2 – no samples	24 th September 2020			2		Solid concrete


Sample No	Date/Time	X Axis	Y Axis	Datum Point	Photographs	Observations
3 – no samples	24 th September 2020			3		Solid concrete


Sample No	Date/Time	X Axis	Y Axis	Datum Point	Photographs	Observations
4/1	24 th September 2020			4		8mm board on timber battens (4/1) 50mm void Breather membrane (4/2) 10mm OSB board 150mm mineral wool


Sample No	Date/Time	X Axis	Y Axis	Datum Point	Photographs	Observations
						


Sample No	Date/Time	X Axis	Y Axis	Datum Point	Photographs	Observations
5 – no samples	24 th September 2020			5		Solid concrete


Sample No	Date/Time	X Axis	Y Axis	Datum Point	Photographs	Observations
6/1	24 th September 2020			6		9.5mm balcony privacy screen/partition board (6/1)

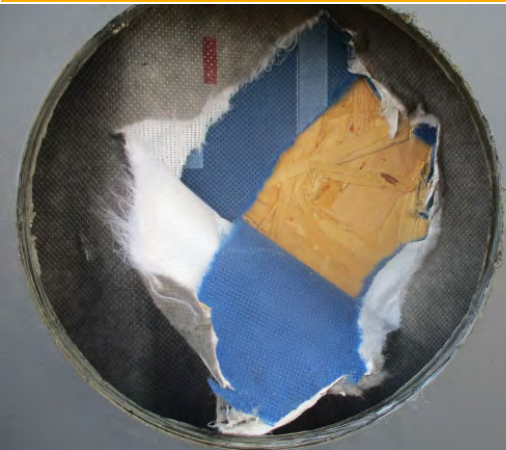
Sample No	Date/Time	X Axis	Y Axis	Datum Point	Photographs	Observations
7/1	24 th September 2020			7		8mm board on timber battens (7/1) 50mm void Breather membrane 10mm OSB board 150mm mineral wool


Sample No	Date/Time	X Axis	Y Axis	Datum Point	Photographs	Observations
						


Sample No	Date/Time	X Axis	Y Axis	Datum Point	Photographs	Observations
8/1-3	24 th September 2020			8		8mm board on timber battens (8/1) 50mm void Breather membrane 10mm OSB board (8/2) 150mm mineral wool (8/3)


Sample No	Date/Time	X Axis	Y Axis	Datum Point	Photographs	Observations
						


Sample No	Date/Time	X Axis	Y Axis	Datum Point	Photographs	Observations
9 – no samples	24 th September 2020			9		Solid concrete


Sample No	Date/Time	X Axis	Y Axis	Datum Point	Photographs	Observations
10/1	24 th September 2020			10		8mm board on timber battens 50mm void Breather membrane 10mm OSB board (10/1) 150mm mineral wool (10/2)


Sample No	Date/Time	X Axis	Y Axis	Datum Point	Photographs	Observations
						


Sample No	Date/Time	X Axis	Y Axis	Datum Point	Photographs	Observations
11 – no samples	24 th September 2020			11		Render on concrete Solid construction

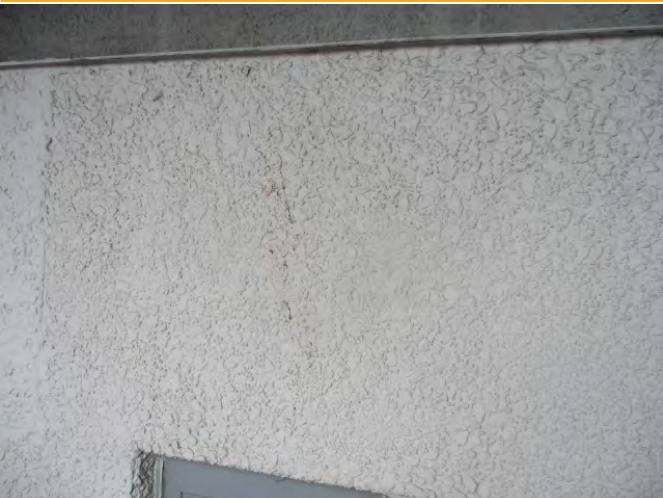
Sample No	Date/Time	X Axis	Y Axis	Datum Point	Photographs	Observations
12- no samples	24 th September 2020			12		Solid concrete


Sample No	Date/Time	X Axis	Y Axis	Datum Point	Photographs	Observations
13 – no samples	24 th September 2020			13		Render on concrete Solid construction


Sample No	Date/Time	X Axis	Y Axis	Datum Point	Photographs	Observations
14 – no samples	24 th September 2020			14		Solid concrete


Sample No	Date/Time	X Axis	Y Axis	Datum Point	Photographs	Observations
15 – no samples	24 th September 2020			15		Solid concrete


Sample No	Date/Time	X Axis	Y Axis	Datum Point	Photographs	Observations
16 – no samples	24 th September 2020			16		Solid concrete


Sample No	Date/Time	X Axis	Y Axis	Datum Point	Photographs	Observations
17 – no samples	24 th September 2020			17		Solid concrete


Sample No	Date/Time	X Axis	Y Axis	Datum Point	Photographs	Observations
18 – no samples	24 th September 2020			18		Render on concrete Solid construction


Sample No	Date/Time	X Axis	Y Axis	Datum Point	Photographs	Observations
19/1	24 th September 2020			19		Composite panel comprising: UPVC/similar bonded to Fibreboard (19/1) Insulation (as 20/1)


Sample No	Date/Time	X Axis	Y Axis	Datum Point	Photographs	Observations
20/1	24 th September 2020			20		Composite panel comprising: UPVC/similar bonded Fibreboard Insulation (as 20/1)

Sample No	Date/Time	X Axis	Y Axis	Datum Point	Photographs	Observations
						

Sample No	Date/Time	X Axis	Y Axis	Datum Point	Photographs	Observations
21/1-3	24 th September 2020			21		Composite panel comprising: UPVC/similar 21/1 bonded to Fibreboard (21/2) & Insulation (21/3)

Sample No	Date/Time	X Axis	Y Axis	Datum Point	Photographs	Observations
						

Sample No	Date/Time	X Axis	Y Axis	Datum Point	Photographs	Observations
22 – no samples	24 th September 2020			22		<p>Composite panel comprising: UPVC/similar bonded to Fibreboard & Insulation</p> <p>As 21</p>

Sample No	Date/Time	X Axis	Y Axis	Datum Point	Photographs	Observations
						


Survey Notes


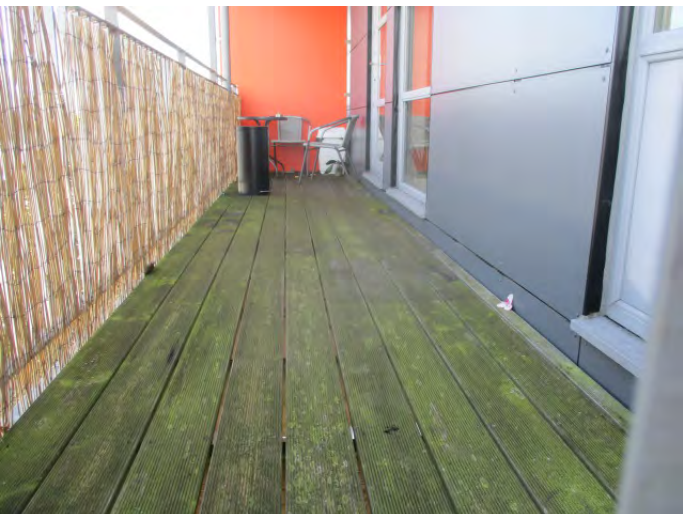
Contemporaneous Survey Notes

Upper 2 levels added
Cladding to upper 2 levels potential HPL board. Also rendered concrete to stairwells.
Lower levels primarily precast concrete.
Spandrel panels and infill panels are composite panels.

Balconies & Attachments

Note: Please include photographs and notes of any balconies and attachments observed during the survey.

ELEVATION	Photograph	Observations & Notes
Front & Rear		<p>Balconies front & rear</p> <p>Steel structure</p> <p>Timber decking</p> <p>Potentially HPL privacy screens/partitions</p>

ELEVATION	Photograph	Observations & Notes
		
		

Typical Composition

Wall Type 1- Upper Levels

#id	Material (External Inwards)	Thickness	Combustibility	Reference
1	Potential HPL Panel	8MM		
2	Void	50mm		
3	Breather Membrane			
4	Timber OSB	10mm		
5	Mineral Wool	150mm		

Wall Type 2 – rendered areas – upper levels

#id	Material (External Inwards)	Thickness	Combustibility	Reference
1	Render	Approx 15mm ?		
2	Concrete/masonry			
3				
4				

Wall Type 3 - Lower Levels

#id	Material (External Inwards)	Thickness	Combustibility	Reference
1	Concrete	>50mm		

Wall Type 4 – Spandrels/Infill Panels

#id	Material (External Inwards)	Thickness	Combustibility	Reference
1	UPVC/similar	1mm		
2	Fibreboard	3-5mm		
3	Insulation	30mm		
4	Inner face of panel	10mm		

In addition to the various wall types, the following attachments to the façade were noted:

Attachment Type 1

#id	Attachment	Construction	Combustibility	Reference
1	Balconies	Steel frame with timber decking, steel balustrade & potential HPL privacy screens.		

Sample Testing

Please complete ASL Sample Testing Form.

Photographic Evidence Location

Photographic evidence and contemporaneous notes and facade investigation and survey record were uploaded to file location.

Name:

Signed:

Position:

Dated:

END OF REPORT

Appendix C - Chartered Fire Engineer MHCLG Advice Report

DRAFT

Ark Sustainability Limited

**Spectrum Building, 22
Freshwater Road, Dagenham,
RM8 1EH**

External wall / cladding system

REP/022

Report | 17 December 2020

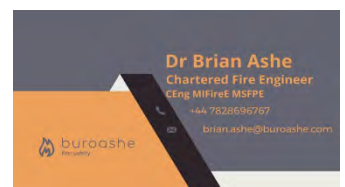


This report takes into account the particular instructions and requirements of our client.

It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number 2020-22

buroashe Limited
NI 667620



Document Verification

Job title		Spectrum Building, 22 Freshwater Road, Dagenham, RM8 1EH		Job number 2020-22	
Document title		External wall / cladding system		File reference J000034	
Document ref		REP/022			
Revision	Date	Filename	Determination against MHCLG advice		
Draft 1	17 Dec 2020	Description	Draft for review by Ark Sustainability		
			Prepared by	Checked by	Approved by
		Name			
		Signature			
		Filename			
		Description			
			Prepared by	Checked by	Approved by
		Name			
		Signature			
		Filename			
		Description			
			Prepared by	Checked by	Approved by
		Name			
		Signature			
		Filename			
		Description			
			Prepared by	Checked by	Approved by
		Name			
		Signature			
Issue Document Verification with Document <input checked="" type="checkbox"/>					

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3 Evidence

The determination is based on the review of the following documents provided for this purpose:

1. Ark Sustainability (2020) *Facade Survey Assessment Report (Incl. EWS1 Determination) - Spectrum Building, 22 Freshwater Road, Dagenham, RM8 1EH*, Project Reference J00034 / ASLPR200228B (2 December 2020).
2. Sandberg (2020) Report 68387/C *Spectrum, Romford - Analysis of Insulation Samples* (5 November 2020).
3. Ark Sustainability (2020) *External Façade Investigation and Survey (Intrusive) - Spectrum Building, 22 Freshwater Road, Dagenham, RM8 1EH*. Project Reference J000034 (24 September 2020).
4. Source - Fire Risk Management (2019) *Fire Risk and Health and Safety Assessment - Spectrum Building, 22 Freshwater Road, Dagenham, RM8 1EH* Assessment Ref: RB-Q86LY8. (18 March 2019).
5. Sandberg (2018) Report 68594/X/01 *Spectrum Building, Cladding Investigation, Dagenham- Analysis of Cladding and Insulation Samples* (11 December 2018).

3.1 External wall / cladding

Based on the Ark Sustainability reports, although some uncertainty does exist, it is likely that the external wall / cladding and attachments is as described in the Ark Sustainability reports. Generically described as:

Type 1 – Built-up wall – Solid Concrete (existing office) (300mm)*, DPM (<1mm), timber batten (25mm)*, polyisocyanurate (PIR) insulation (60mm) laminated to plasterboard* (12.5mm)⁴

Type 2 – Built-up wall (to stair core)- Render (15mm) (unknown), hollow concrete masonry blockwork (215mm)*, timber batten (25mm)*, fireline plasterboard (15mm)*⁵.

Type 3 – Built-up wall (top two levels – new addition) – High Pressure Laminate (8mm), clear cavity (50mm), polypropylene membrane (<1mm), timber strand board (15mm), soda lime silicate, glass wool (150mm fixed between timber frame), vapour control layer (<1mm)*, timber batten (50mm)*, fireline plasterboard (15mm x 2)*⁶.

Type 4 – Spandrel Panel (non-continuous) – Polyvinyl chloride sheet (<1mm), fibreboard (5mm), polystyrene insulation (30mm), inner face (unknown combustion and thickness)⁷.

* based on review of working drawings. Not confirmed by intrusive survey.

⁴ CWCT/SFE September 2020

⁵ CWCT/SFE September 2020

⁶ CWCT/SFE September 2020

⁷ CWCT/SFE September 2020

The following attachments to the façade were present:

Attachment Type 1 (Balconies) – Steel structure and balustrading, timber decking.

Attachment Type 2 (Privacy screens) – High pressure laminate panel, compressed wood fibres, acrylic coating).

The systems and materials assumed are based on the intrusive survey's, photos and sample testing. The sample testing did not identify any elements which could improve the reaction to fire of the polyisocyanurate PIR, polystyrene insulation polyvinyl chloride and other combustibles.

During the intrusive investigation, it was established that there was a 50mm clear cavity formed by timber batten framing behind the high pressure laminate panels (Type 3 – top two levels). This construction arrangement would appear to be consistent with the working drawing (2927.WD.46) which shows cavity barrier arrangements being formed with timber battens fixed at party wall / floor locations along with 'TCB Rockwool' cavity barriers installed at party wall lines behind the Timber Oriented Strand Board. Due to the limited nature of the intrusive survey and the difficulty in establishing party wall lines externally, it could not be confirmed whether suitable timber batten and 'TCB Rockwool' cavity barriers had been installed as shown in the working drawings.

There is also not sufficient evidence to determine both the presence and adequacy of cavity barrier arrangements across the whole of the building. Inadequate / incorrectly installed / missing cavity barriers to compartment lines is considered to significantly increase the risk of unseen fire spread from compartment to compartment, potentially affecting escape routes and evacuation strategies across the building.

Due to the solid nature of the concrete walls (Type 1) and rendered walls (Type 2), cavity barrier installations would not be applicable for this construction arrangement.

3.2 Related fire safety matters

The fire risk assessment confirms that the building operates a 'full evacuation' (simultaneous) procedure.

The premise contains a Grade A LD2 fire alarm system, dry rising main, smoke venting provisions at the head of the stair cores and communal residential corridors and protected stair cores.

4 Determination

As the Spectrum Building is greater than 18m (19.7m), as per the supplementary note to the MHCLG advice (clause 8), the advice states that owners of any building (18m or more in height from the top occupied storey (clause 8.1)) that has other forms of cladding should consider the risk of external fire spread and need for remediation. As stated in Clause 8, it is considered that the MHCLG advice January 2020) is applicable to the Spectrum Building.

Diagram 1 of the MHCLG advice outlines the process chart for assessing external wall systems. This process has been used to determine if the materials / systems used in the external wall system is appropriate from a fire risk perspective on Spectrum Building, 22 Freshwater Road, Dagenham, RM8 1EH:

Process question 1: *Is your external wall insulation of European Class A2-s3,d2 or better?* **NO**. Polyisocyanurate PIR insulation, polystyrene insulation, high pressure laminate, timber battens, various membranes / various boards, all combustible to varying degrees.

Process question 2: *Is your external wall system in line with one that has achieved a BR135 classification via a BS8414 test?* **NO**.

As a result of answers to these questions, MHCLG advice recommends the following:

Seek urgent professional advice on the measure(s) that need to be taken to ensure that the external walls meet an appropriate standard of fire safety. This may involve the replacement of some or all of the materials in the external wall. As part of the development of these measures, assess whether cavity barriers and fire stopping have been installed correctly, and whether the system has been maintained appropriately. Consider whether short-term interim safety measures are required. Carry out any remedial works required and update your fire risk assessment following the works.

5 Discussion

Spectrum Building, 22 Freshwater Road, Dagenham, RM8 1EH is a detached, mixed use building.

The existing former office building has been extended upwards and converted to provide commercial spaces at basement and ground floor levels with 60 individual residential apartments formed between first and sixth floor levels. Plant and services are contained within the basement level and a communal roof terrace is provided to the top of the building.

The building is provided with two stair cores and two passenger lifts. Stair one and both lift cores, one of which is a fire-fighting lift is located to the east elevation with stair two being located to the west elevation.

Generically, the Type 1 system which covers the vast majority of the elevations are a built-up wall (incorporating the existing structural external concrete wall) with – Solid Concrete (existing office building) (300mm)*, DPM (<1mm), timber batten (25mm)*, polyisocyanurate (PIR) insulation (60mm) laminated to plasterboard* (12.5mm).

From the drawings provided from the O&M manual (2927.WD.62A and 2927.WD.62B) it appears that the existing structure and in particular the junction between the external wall and the structural floor are cast in-situ and as such provide the sufficient compartmentation from the flat below to the flat above. This assumption is relevant for the existing structure up to level four. Assuming this condition, the use of combustible insulation on the interior of the external wall is not significant in terms of external fire spread, as fire spread and products of combustion should be contained within the flat of fire origin.

Generically, the Type 3 system to the top two levels (addition to existing structure) High Pressure Laminate (HPL) (8mm), clear cavity (50mm), polypropylene membrane (<1mm), timber strand board (15mm), soda lime silicate, glass wool (150mm fixed between timber frame), vapour control layer (<1mm), timber batten (50mm)*, fireline plasterboard (15mm x 2).

The HPL is likely to have a Euroclass D. Although, the type 3 system does not contain combustible insulation, it contains timber board and battens and combustible membranes and in combination with the HPL cladding presents a risk of external fire spread.

From the results of the intrusive survey the lack of cavity barriers / fire stopping to the voids, presents a risk of external fire spread.

The risk of an external fire (deliberate or accidental) igniting the HPL on Type 3 timber decking on balconies and privacy screens cannot be discounted and needs to be mitigated.

6 Recommendations

Given the evidence available and summarised above, the following recommendations are made to mitigate the fire risks to an acceptable level:

6.1 Short-term actions (within one month)

Building owners to inform fire and rescue service to the nature of the external wall / cladding systems.

Confirm that the junction between the existing external wall and the existing structural floor is adequate to ensure compartmentation.

Review fire risk assessment given the nature of the external wall cladding / systems.

Review fire risk assessment to ensure the management procedures are in place to ensure an effective simultaneous evacuation and that strategies are in place to identify and manage evacuation for vulnerable occupants. NFCC⁸ guidance should be considered.

Strategies to minimise the likelihood of an external fire igniting timber decking should be implemented. All ignition sources (such as smoking, BBQ, heaters) should be removed from balconies.

6.2 Medium-term actions (within three months)

Given the MHCLG advice the options available to demonstrate the external wall / cladding system meets the MHCLG advice are limited. All actions / options come with varying levels of uncertainty and cost. Further evaluation of these actions / options in terms of uncertainty and cost is required to aid decision-making and not covered by this report.

⁸ <https://www.nationalfirechiefs.org.uk/Simultaneous-evacuation-guidance>

The following medium-term actions focus on the top 2 levels that incorporate the Type 3 system, where the greatest risk of external fire spread exists. These actions are aiming to deliver a proportional response to the risk of external fire spread.

The options available are as follows:

1. If evidence can be provided that the external wall / cladding system (Type 3) used on the Spectrum Building has been subject to a BR135 classification, a detailed survey must be undertaken to identify the as build construction and ensure the integrity of the external wall system from an external fire spread perspective is as per the classified system (including cavity barriers).
2. Undertake a holistic fire engineering analysis to determine the additional fire safety measures necessary to ensure an adequate level of fire safety accounting for the cladding system (Type 3) on the top 2 levels. This assessment should be undertaken in consultation with the fire and rescue service, building insurer and the residents of the Spectrum Building.
3. Remove External wall / cladding system and replace with materials that achieve Class A2-s3,d2 or better, to demonstrate external wall / cladding system meets the MHCLG advice.

Irrespective of the option selected, the spandrel panel (type 4), timber decking to balconies and HPL privacy screens should be replaced with materials that meets the MHCLG advice.

6.3 Long-term action (within 12 months)

The government is bringing forward fundamental changes in the draft Building Safety Bill that will improve building and fire safety. The government accepted the Hackitt review's recommendations and the draft Building Safety Bill, which, alongside the existing Fire Safety Bill and fire safety consultation will set out how they are bringing forward those proposals to provide the biggest changes to building safety in nearly 40 years.

Given that the Building Safety Bill is highly likely to be legislated over the next 1-2 years, it is recommended that the actions undertaken should ensure that Spectrum Building, 22 Freshwater Road, Dagenham, RM8 1EH will be in a position to demonstrate structural and fire safety against the new legislation and regulations such as:

Development of a Safety Case.

Collection and presentation of the necessary building information in a digital format.

6.4 EWS1 form

Based on the findings contained in this report I have concluded that an **adequate standard of safety is not achieved**, and I have identified to the client organisation the remedial and interim measures required.

Determination = **B2**.

Appendix B - Normative References

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

Standards Publications

British Standards Institution, BS 476 (all parts), Fire tests on building materials and structures, London: BSI.

British Standards Institution (2005) BS 4422 Fire Vocabulary, London: BSI.

British Standards Institution (1970) BS 476-4 Fire tests on building materials and structures - Part 4: Non-combustibility test for materials, London: BSI.

British Standards Institution (1982) BS 476-11 Fire tests on building materials and structures. Method for assessing the heat emission from building materials, London: BSI.

British Standards Institution (1991) BS 476-12 Fire tests on building materials and structures - Part 12: Method of test for ignitability of products by direct flame impingement, London: BSI.

British Standards Institution (1997) BS476-7 Fire tests on building materials and structures: Part 7. Method of test to determine the classification of the surface spread of flame of products, London: BSI.

British Standards Institution (1997) BS476-23 Fire tests on building materials and structures - Part 23: Methods for determination of the contribution of components to the fire resistance of a structure, London: BSI.

British Standards Institution (1987) BS 476 - 22 Fire tests on building materials and structures - Part 22: Methods for determination of the fire resistance of non-load bearing elements of construction, London: BSI.

British Standards Institution (1987) BS 476 - 21 Fire tests on building materials and structures - Part 20: Method for determination of the fire resistance of elements of construction (general principles), London: BSI.

British Standards Institution (1987) BS 476 -21 Fire tests on building materials and structures - Part 21: Methods for determination of the fire resistance of load bearing elements of construction, London: BSI.

British Standards Institution (2020) BS 8414-1 Fire performance of external cladding systems – Part 1: Test methods for non-load bearing external cladding systems applied to the face of a building, London: BSI.

British Standards Institution (2020) BS 8414-2, Fire performance of external cladding systems – Part 2: Test method for non-load bearing external cladding systems fixed to and supported by a structural steel frame, London: BSI.

British Standards Institution (2005) BS 6262-3: 2005 Glazing for buildings - Part 3: Code of practice for fire, security and wind loading, London: BSI.

British Standards Institution (2013) BS 8524-1/BS8524-2 (both parts), Active fire curtain barrier assemblies, London: BSI.

British Standards Institution (2014) BS 9251:2014, Sprinkler systems for residential and domestic occupancies - Code of practice, London: BSI.

British Standards Institution (2015) BS 9990:2015 Non automatic fire-fighting systems in buildings, Code of practice, London: BSI.

British Standards Institution (2017) BS 9999:2017 Code of practice for fire safety in the design, management and use of buildings, London: BSI.

British Standards Institution (2015) BS9991 Fire Safety in the design, management and use of residential buildings. Code of practice, London: BSI.

British Standards Institution BS EN 3 (all parts), Portable fire extinguishers, London: BSI.

British Standards Institution BS EN 81 (all parts), Safety rules for the construction and installation of lifts, London: BSI.

British Standards Institution (1997) BS EN 1154, Building hardware – Controlled door closing devices – Requirements and test methods, London: BSI.

British Standards Institution BS EN 1363 (all parts), Fire resistance tests, London: BSI.

British Standards Institution BS EN 1364 (all parts), Fire resistance tests for non-load bearing elements, London: BSI.

British Standards Institution BS EN 1365 (all parts), Fire resistance tests for load bearing elements, London: BSI.

British Standards Institution BS EN 1366 (all parts), Fire resistance tests for service installations, London: BSI.

British Standards Institution (2018) BS EN 1634-1, Fire resistance tests for door and shutter assemblies – Part 1: Fire resistance test for door and shutter assemblies and openable windows, London: BSI.

British Standards Institution (2004) BS EN 1634-3:2004, Fire resistance tests for door and shutter assemblies – Part 3: Smoke control test for door and shutter assemblies, London: BSI.

British Standards Institution BS EN 12101 (all parts), Smoke and heat control systems, London: BSI.

British Standards Institution (2019) BS EN 12845:2015 + A1:2019 Fixed firefighting systems – Automatic sprinkler systems – Design, installation and maintenance, London: BSI.

British Standards Institution (2018) BS EN 16925:2018 Fixed firefighting systems - Automatic residential sprinkler systems - Design, installation and maintenance, London: BSI.

British Standards Institution BS EN 13501 (all parts), Fire classification of construction products and building elements, London: BSI.

British Standards Institution (2020) BS EN 13823, Reaction to fire tests for building products – Building products excluding floorings exposed to the thermal attack by a single burning item, London: BSI.

British Standards Institution (2020) BS EN ISO 1182, Reaction to fire tests for building products – Non combustibility test, London: BSI.

British Standards Institution (2018) BS EN ISO 1716, Reaction to fire tests for products – Determination of the gross heat of combustion (calorific value), London: BSI.

British Standards Institution (2015) BS 8458:2015 - TC Tracked Changes. Fixed fire protection systems. Residential and domestic water-mist systems. Code of practice for design and installation, London: BSI.

British Standards Institution (2019) BS 7974:2019 Application of fire safety engineering principles to the design of buildings. Code of practice, London: BSI.

British Standards Institution (2019) PD 7974-1:2019 Application of fire safety engineering principles to the design of buildings. Initiation and development of fire within the enclosure of origin (Sub-system 1), London: BSI.

British Standards Institution (2019) PD 7974-2:2019 Application of fire safety engineering principles to the design of buildings. Spread of smoke and toxic gases within and beyond the enclosure of origin (Sub-system 2), London: BSI.

British Standards Institution (2019) PD 7974-3:2019 Application of fire safety engineering principles to the design of buildings. Structural response to fire and fire spread beyond the enclosure of origin (Sub-system 3), London: BSI.

British Standards Institution (2003) PD 7974-4:2003 Application of fire safety engineering principles to the design of buildings. Detection of fire and activation of fire protection systems. (Sub-system 4), London: BSI.

British Standards Institution (2014) PD 7974-5:2014 Application of fire safety engineering principles to the design of buildings. Fire and rescue service intervention (Sub-system 5), London: BSI.

British Standards Institution (2019) PD 7974-6:2019 Application of fire safety engineering principles to the design of buildings. Human factors. Life safety strategies. Occupant evacuation, behaviour and condition (Sub-system 6), London: BSI.

British Standards Institution (2019) PD 7974-7:2019 - TC Tracked Changes. Application of fire safety engineering principles to the design of buildings. Probabilistic risk assessment, London: BSI.

British Standards Institution (2019) PD 7974-7:2019 Application of fire safety engineering principles to the design of buildings. Probabilistic risk assessment, London: BSI.

British Standards Institution (2020) BS 8579:2020 Guide to the design of balconies and terraces, London: BSI.

Other Publications

Baker, T. & Colwell, S. (2013) BR 135: fire performance of external thermal insulation for walls of multi-storey buildings (3rd ed.), Watford: IHS BRE Press.

Building Regulations 2010. approved document B1, July 2019. Approved Document B (Fire safety) – Volume 1: Dwellings (2019 edition), London: HM Government.

Building Regulations 2010. approved document B2, July 2019. Approved Document B (Fire safety) – Volume 2: Buildings other than dwellings (2019 edition), London: HM Government.

Building Regulations 2010 - Amendments to the Approved Documents (May 2020) London: HM Government.

Drysdale, D. (2011) *An Introduction to Fire Dynamics (3rd Ed.)*, Chichester: Wiley.

Regulatory Reform (Fire Safety) Order 2005, UK Statutory Instrument no.1541, HM Government.

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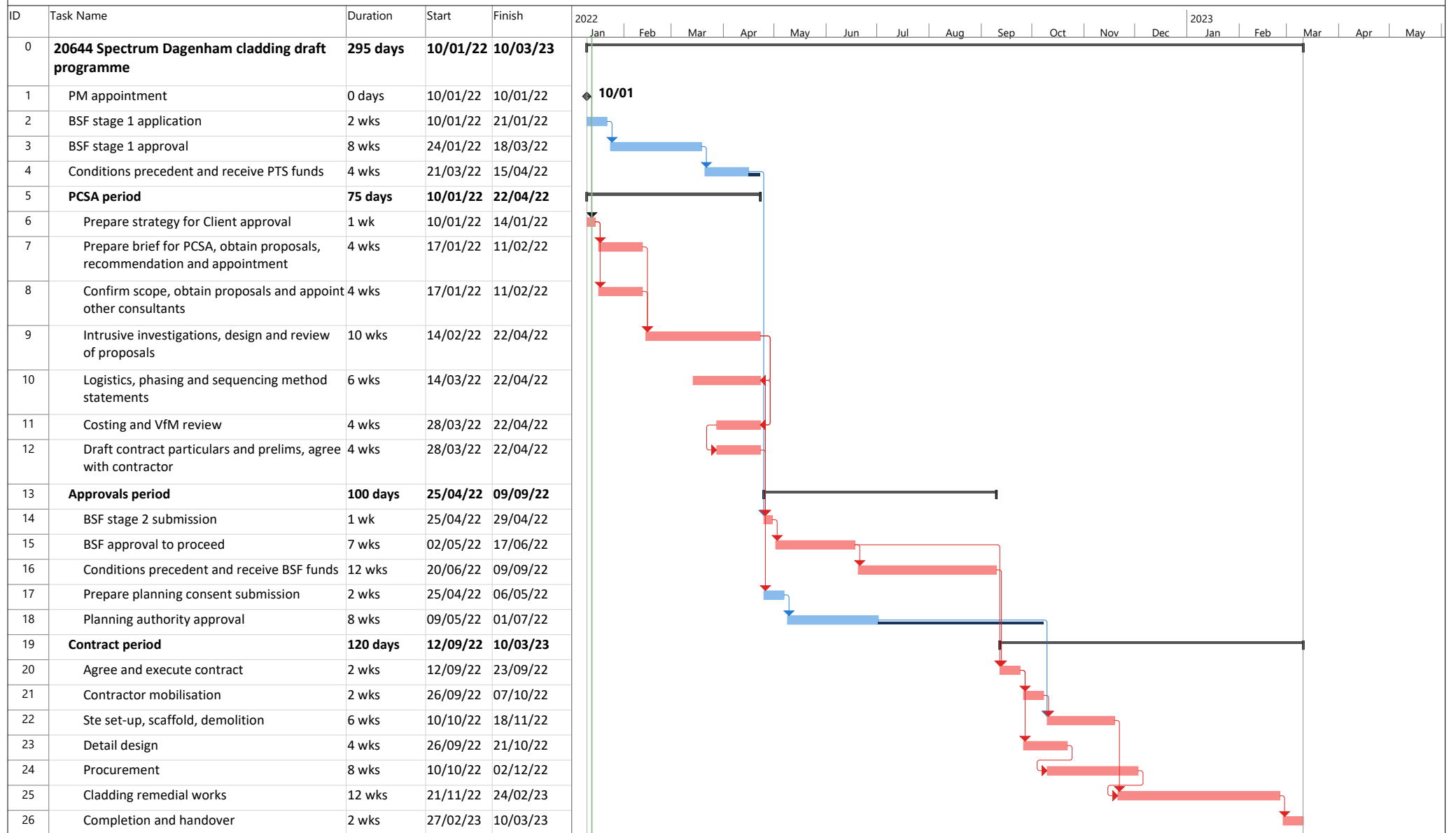
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Project: 20644 Spectrum Dagenham cladding draft programme



Date 15/12/2021

Ref SW/Fee Proposal

■■■■■
Block Management UK Ltd.
Unit 5
Stour Valley Business Centre
Brundon Lane
Sudbury
CO10 7GB

Sent by email only

Dear ■■■■■

Re: The Spectrum Building, 22 Freshwater Road, Dagenham, Essex RM8 1EH – Fee Proposal for Employer's Agent Services

Thank you for inviting us to submit a fee proposal for Employer's Agent services in respect of the above project. Set out below is our understanding of the project and the terms of our fee proposal.

1.0 The Scheme

The Spectrum Building is a residential block located in Dagenham, in close proximity to Chadwell Heath national railway station. The property is likely framed construction and finished with either render or ACM cladding panels.

Following tests undertaken by a specialist, it is our understanding that combustible cladding has been identified to various locations throughout the building, it is unclear at this stage if a formal EWS1 report has been completed to the building. The type of insulation identified is likely to be that which has been highlighted by the authorities as being potentially dangerous, following the tragic fire at Grenfell Tower in west London. As such, the client is in the process of obtaining funding for the proposed works consisting of the removal of the aforementioned cladding and the installation of new cladding systems which comply with current regulations.

Based on the above, HartDixon understands that the proposed scheme presented to date to remove the existing potentially combustible insulation/cladding with a non-combustible type, we have advised on a budget for the works of £3.5m, excluding VAT and professional fees, but also subject to a Fire Engineer reviewing the cladding report and providing their recommendations in terms of remedial works.

2.0 The Service

Employer's Agent

HartDixon are to provide Employer's Agent services in connection with these proposed works. This service comprises of the following:

Pre-Contract

- i. Working with architects in order for them to draft the required planning pack, for submission to local authority planning authority (architect's fee not included);
- ii. Appoint specialist Fire Engineer and Approved Inspector (specialist fees not included);
- iii. Collate and upload all necessary information onto the funder's portal, prior to obtaining funding approval;
- iv. Draft the Employer's Requirements for the above works and issue to the agreed contractor for pricing;
- v. On receipt of the priced ERs, review costs and negotiate with the agreed contractor if required;
- vi. Issue a Letter of Intent to the chosen contractor and contract documents as required;

Post-Contract

- vii. Provide Employer's Agent/Principal Designer role throughout the project duration;
- viii. Undertake site inspections/progress meetings with the contractor as required;
- ix. Produce and issue comprehensive meeting minutes including action points and circulate to all parties;
- x. Produce regular financial report for the works;
- xi. Review all variations submitted by the appointed contractor, and advise on their legitimacy and value for money in line with competitively tendered rates;
- xii. Produce and issue Contract Instructions to contractors in a timely manner;
- xiii. Provide the client with a financial forecast with all contractor valuations, and at design team meetings;
- xiv. Advise on any contractual matters, delays on site etc.
- xv. Check all contractor valuations with works and materials on site and Issue certificates confirming approval of contractor's valuations (appointment of specialist QS included);
- xvi. Check and snag as the works proceed, with a formal snagging inspection 1 week prior to hand over (formal signing off of specialist works such as fire breaks etc. by Fire Engineer/Approved Inspector);
- xvii. Issue Practical completion/Non-completion certificates as appropriate;
- xviii. Review and agree final account;
- xix. Management of Sub-Consultants throughout contract;
- xx. Management and liaison with all existing client stakeholders, throughout the duration of the contract;
- xxi. Retention will be retained by the client and 12 months after practical completion has expired, we will return to site to re-inspect and any defects appear during this period we will arrange and supervise these works.

The above is on the basis that the project will be negotiated with a preferred contractor.

3.0 The Team

It is essential that the Employer's Agent has experience in managing multi-disciplined teams on complex projects, but they also have a good technical understanding of properties of this type and the potential challenges associated with them. Having a team with this experience will minimise unforeseen issues and ensure all project parameters are met successfully. The HartDixon team for the project would be:

- [REDACTED]
- [REDACTED]



Regulated by | RICS

HartDixon is a trading name of GIA Building Consultancy LLP

Company registration number | OC413529

VAT No. GB 249 7779 36

The professional team set-up has been proposed so that there is consistent service for the duration of the contract, whilst providing a breadth of project, contractual and technical knowledge.

4.0 The Fee Proposal

To provide the roles as described above, I propose a fixed fee of £9,750 for the pre-contract stage, plus a post contract fee of 3.6% of the final contract value, based on a budget cost for the works of £3.5m as stated above.

The above excludes VAT at the prevailing rate, reasonable disbursements will also be charged where required. Our proposed fee for the role of Principal Designer as would be required for a project of this nature is an additional fixed fee of £7,950.00 (plus VAT).

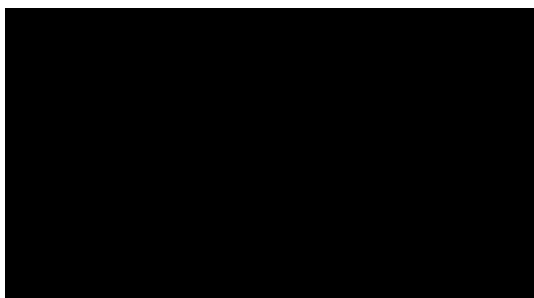
Our fee proposal excludes for any other specialist consultant services such as Architects, Fire Engineers, Structural Engineers, M+E Engineers or statutory authority fees such as Building Control etc.

HartDixon reserve the right to revise our fee proposal accordingly, in the event that the agreed contract sum differs significantly from the budget cost as predicated above.

I hope I have interpreted your requirements for professional services sufficiently and look forward to hearing from you.

Yours sincerely

For and on behalf of HartDixon





Department for Levelling Up,
Housing & Communities

Dated

18 January 2023

BLOCK MANAGEMENT UK LTD

**DECLARATION OF BARE
TRUST OVER BARCLAYS
BANK ACCOUNT NO.**

83939359

**IN RELATION TO
SPECTRUM BUILDING, 22
FRESHWATER ROAD,
DAGENHAM ESSEX RM8 1EH**



Department for Levelling Up,
Housing & Communities

This Declaration of Bare Trust ('Declaration') is made on

18 January 2023

Block Management UK Limited a company incorporated in England and Wales (Registered Company Number 04993946) whose registered office is at Gascoyne House, Moseleys Farm Business Centre, Fornham, All Saints, Bury St. Edmunds, IP28 6JY (the **Declarant**)

Whereas

(A) The Declarant is either:

- the legal owner of the freehold or the superior leasehold interest in and the landlord of the property; or
- a Right to Manage company (**RTM**) with legal responsibility for managing the property; or
- a management company (**Management Company**) with legal responsibility for the repair of the property; or
- an appointed representative of the freehold or leasehold owner or any Right to Manage or Management Company with legal responsibility for repair of the Building, who has been commissioned to manage the responsibility for the repair of the building on their behalf ('the **Representative**')

of the property known as SPECTRUM BUILDING, 22 FRESHWATER ROAD, DAGENHAM, ESSEX, RMB 1 EH (**Property**)

- (B) The Department for Levelling Up, Housing and Communities (**DLUHC**) and the non-departmental public body known as The Greater London Authority or GLA (**Delivery Partner**) are administering grant funding in connection with the Building Safety Fund for the remediation of Non-ACM cladding systems (including, but not limited to, any pre-tender support funding) (**BSF Monies**).
- (C) The Declarant will receive BSF Monies for eligible costs to finance all or part of the Project (as more particularly identified in the grant agreement(s) pursuant to which the BSF Monies are to be advanced).
- (D) This declaration requires the Declarant to hold all BSF Monies upon bare trust for any Beneficiaries and to apply any and all BSF Monies towards costs associated the professional design, implementation and completion of the planned remedial works relating to the Property and for no other purpose (the **Project**)
- (E) The Declarant agrees to pay and hold in the Trust Account any and all BSF Monies received from the Delivery Partner from time to time for the purposes of the Project. The Declarant will only withdraw amounts of the Trust Fund from the Trust Account to meet valid and proper costs relating to the Project and to make other payments contemplated by and in accordance with any grant agreement pursuant to which the BSF Monies are to be advanced. Where other amounts are paid into the Trust Account which are unrelated to the Project and which do not form part of the Trust Fund, the Declarant shall be free to use these monies as it deems fit provided that this is in compliance with lease documentation issued for the Building and/or the terms of the Declarant's retainer.



Department for Levelling Up, Housing & Communities

- (F) The Declarant now wishes to declare the trusts upon which the funds are to be held and it is intended that the declaration of bare trust provided by this deed shall be irrevocable.

It is agreed

1 Definitions

- 1.1 **Beneficiaries** means any residential leaseholder in the Building
- 1.2 **Trust Account** means the account as detailed in the First Schedule
- 1.3 **Trust Fund** shall mean such of the BSF Monies received by the Declarant from the Delivery Partner and any income which shall accrue upon the same from time to time pending withdrawal from the Trust Account for payment in relation to the Project in accordance with the provisions of clause 2.1

2 Declaration of bare trust

- 2.1 The Declarant hereby irrevocably declares that it shall from the date of this deed immediately pay any BSF Monies it receives into the Trust Account and hold the whole of the Trust Fund upon bare trust for the Beneficiaries and shall efficiently use the Trust Fund solely to defray any reasonable and valid costs which may be incurred in connection with the Project whether such costs may be incurred by the Declarant or any other person and make any payment required to be made pursuant to the terms of any grant agreement relating to the BSF Monies
- 2.2 Upon the date on which the Project is completed to the satisfaction of DLUHC or the Delivery Partner and any surplus BSF Monies have been returned to DLUHC pursuant to the terms of any grant agreement relating to the BSF Monies, the trust created by clause 2.1 above shall immediately cease to have any legal effect.

3 Supplemental

- 3.1 The clause headings are included for reference only and do not affect the interpretation of this Declaration
- 3.2 This Declaration is governed by and shall be interpreted in accordance with the laws of England and Wales
- 3.3 Each party irrevocably submits to the exclusive jurisdiction of the English courts in relation to all matters arising out of or in connection with this Declaration its subject matter or formation (including non-contractual disputes or claims)

4 Clause headings

- 4.1 The clause heading are included for reference only and do not affect the interpretation of this Declaration

In witness whereof this Declaration has been executed by the parties or their duly authorised representatives hereto the day and year first hereinbefore written



Department for Levelling Up,
Housing & Communities

The First Schedule

The Trust Account

Any and all monies and any and all income accruing thereon held from time to time in Barclays Bank

[REDACTED]



Department for Levelling Up,
Housing & Communities

Executed and delivered as a deed on the date
written above by **Block Management UK**
Limited acting by a director in the presence of

Signature of witness

Name

Address

C/O BLOCKMANAGEMENT LTD
Unit 5, Star Valley
Business Centre, Brandon
Lane, Sudbury, Suffolk
CO10 70B



Regulated by RICS

SPECTRUM HOUSE

22-42 Freshwater Road
Dagenham RM8 1EH

Value for Money Report

In connection with

Façade Remediation Works



3 May 2023



RICS

NHS

PRO CURE

Constructionline

Chartered Quantity Surveyors & Construction Cost Consultants



Contents

1.0 Introduction

2.0 Cost Review

3.0 Benchmarking

4.0 Conclusion

5.0 Appendices

A - Tender Submission

B - Question-and-Answer Document





1.0 Introduction

- 1.1 Navigation Management Limited (NML) have been instructed by [REDACTED] of Hart Dixon Limited (HD) to undertake a review of the tender submission submitted by the Contractor, Fleetwood Architectural Aluminium Limited (FAA), for the proposed façade remediation works at The Spectrum House, 22-42 Freshwater Road, Dagenham RM8 1EH.
- 1.2 The instructions from HD were to carry out an assessment that all items of work identified or that can be reasonably assumed or inferred from the information provided have been included and that the estimate is commensurate with current market rates and provide an opinion as to whether it provides the Client with value for money.
- 1.3 The proposed scheme comprises of the removal and disposal of non-compliant high pressure laminate on timber frame cladding system used for the extension of the building to create Fifth and Sixth Floors, spandrel infill panel to windows to Ground to Sixth Floor, high pressure laminate privacy screens between balconies to all floors and timber decking to all balconies and replacement with a suitably compliant spandrel infill panels, cladding system and decking system to all the affected elevations and features.
- 1.4 The relevant documents are: -
 - Quotation received (ref. 12627, Revision A) dated 28/4/2023 from Fleetwood Architectural Aluminium Ltd (see Appendix A)
- 1.5 During the preparation of this report, queries have been raised with FAA and responses have been incorporated within the relevant sections. (see Appendix B)

2.0 Cost Review

2.1 Summary

The tender submission received from Fleetwood Architectural Aluminium Limited in the total sum of £4,805,097.05 is summarised below: -

Description	£
Remove spandrel infill panels – G/F to 6/F	149,996.90
Supply and install spandrel infill panels – G/F to 6/F	832,021.99
Remove privacy screens to balconies – G/F to 6/F	21,415.38
Supply and install privacy screens – G/F to 6/F	145,888.02
Remove cladding – 5/F and 6/F	248,563.48
Supply and install cladding system – 5/F and 6/F	601,766.77
Remove timber decking – 1/F to 6/F	164,568.75
Supply and install aluminium decking – 1/F to 6/F	281,841.87
Remove and reinstate rainwater pipes, hoppers, sprinkler water pipes and letter boxes	21,363.24
Sub-total	2,467,426.40
Preliminaries	299,871.02
Scaffolding, carpark gantry and hoist	961,186.00
Logistics	532,037.48
Sub-total	1,793,094.50
Architectural Fees	73,500.00
SAP Calculation Fees	2,875.00
Building Control Fees	5,750.00
Fire Engineer Consultant Fees	47,700.00
Sub-total	129,825.00
Total	4,390,345.90
Overheads and profit	285,372.48
Design risk	109,758.65
Rounding	0.02
Tender Sum	4,785,477.05
Remediation Area	
Cladding to replace – 5/F and 6/F only	663 m2
Scaffolding – G/F to 6/F	4044 m2



2.0 Cost Review (Cont'd)

2.2 Basis of Cost

2.2.1 Base Date

The tender submission received is dated 28/4/2023 and are current to 2Q2023 and our review has been completed on that basis.

2.2.2 Tender Validity

The tender submission states that it remains open for acceptance for a period of 30 days. This has been extended to 90 days from 28/4/2023, which equates to 26/7/2023 refer to Question-and-Answer Document (Q&A Document) (refer to Q&A no. 1 – query 1).

2.2.3 Form of Contract

The tender submission is based upon the JCT Design and Build Contract, 2016 Edition and has been confirmed by FAA through the Q&A Document (refer to Q&A no. 1 – query 29).

2.2.4 Programme

FAA's tender submission included a preliminary programme dated 11/4/2023 which shows a construction/ procurement programme duration of 42 weeks.

2.2.5 External Façade Drawings and Specifications

FAA confirmed their tender submission includes external façade drawings and specifications issued by GAA on 28/4/2023 and will form part of the Contractor's Proposals.

2.2.6 Façade Areas

The scope of works comprises of the removal and disposal of non-compliant high pressure laminate on timber frame cladding system used for the extension of the building to create Fifth and Sixth Floors, spandrel infill panel to windows to Ground to Sixth Floor, high pressure laminate privacy screens between balconies to all floors and timber decking to all balconies and replacement with a suitably compliant spandrel infill panels, cladding system and decking system to all the affected elevations and features. We have carried out an independent measurement check of the scheme and confirm that the quantities used by FAA seem reasonable.



2.0 Cost Review (Cont'd)

2.2 Basis of Cost (Cont'd)

2.2.7 Assumptions, Clarifications and Exclusions

Following the tender submission from FAA there is a Q&A Document audit trail that confirms agreement on certain query items and where relevant the tender submission has been amended to reflect this (see Appendix B).

The Q&A audit trail also addresses exclusions, notes and qualifications included within the tender submission from FAA. Care should be taken to ensure that the documents to be included within the JCT Design and Build Contract, in particular the Contractor's Proposals (CP) align with the Employer's Requirements (ER).

The contract will be a fixed sum contract and the quantities will not be re-measurable other than where items are stated as provisional.

2.3 Pricing and Rate Review

The spandrel infill panel removal is £149,996.90 and this equates to average rate of £216.06/m² based on a total number of 414 spandrel panels to windows and doors located on G/F to 6/F. This rate looks reasonable.

The average rate of £1,198.46/m² for supply and install new spandrel panels looks high. Having consider, there are all new spandrel infill panels which each needs to match the same dimensions to fit in the existing windows and allowed for replacement of gaskets/ mastic sealant to affected spandrel panels, we do not consider this rate to be unreasonable.

The rates for replacement of existing privacy screens to all balconies at £156.55/m² for removal and £1,066.43/m² for supply and install new privacy screens are considered reasonable.

The cladding panel removal is £248,563.48 and this equates to £375.08/m² based on an area of 663m². The supply and install of aluminium cladding panels and framing system is £601,766.77 and this equates to a rate of £908.05/m². We do not consider these rates to be unreasonable.

The rates for replacement of existing timber decking to all balconies at £375.08/m² for removal and £642.36/m² for supply and install new aluminium decking are considered reasonable.



2.0 Cost Review (Cont'd)

2.4 On-Costs – Preliminaries, Scaffolding, Logistics, Overheads and Profit

2.4.1 Preliminaries

This equates to £299,871.01 or £7,139.79 per week based on a contract of 42 weeks. This includes Management & Staff, Utilities, Health & Safety, Protection and Plant, Small Tools & Equipment. Within the management and staff cost, FAA included a full time Project Manager and a full time Site Manager and a full time Tenant Liaison Officer to manage the various sub-contractors, the logistics and the necessary documentation on similar Façade projects to this. The limited scope of the façade works makes the Preliminaries appear disproportionately high. Taking this into account, the rates applied and the time durations, this do not seem unreasonable and is therefore in-line with our expectations for such a limited scope of works.

2.4.2 Scaffolding and Hoist

The scaffolding and hoist equate to £961,186 or £237.68/m² for the whole area of the building which is required to execute these works compared with our benchmark expectation range of £110 - £135/m². No allowance for license has been included as the scaffold will lay on private property. We have raised a query regarding the scaffolding breakdown (refer to Q&A no. 1 – query 5) and FAA provided a quotation from their scaffolding contractor (Quotation no. 9770 dated 10/3/2023) and we understand that the higher rate is due to the inclusion of carpark gantry to the whole front elevation of the building and a passenger/ goods hoist run-off tower.

2.4.3 Logistics

This equates to £532,037.48. The logistics elements of the tender submission include for a full time Logistics Manager, site security including hoarding and gate, fire safety, traffic management, material distribution including telehandler, site offices and welfare facilities including temporary utilities connections, waste management, site signage, road cleaning, health and safety, skips, site labour and supervision costs. We do not consider the allowance included by FAA to be unreasonable.



2.0 Cost Review (Cont'd)

2.4 On-Costs – Preliminaries, Scaffolding, Logistics, Overheads and Profit (Cont'd)

2.4.3 Overheads and Profit

Overheads and profit have been priced at 6.5% and this is slightly lower than our benchmark expectation of 10% - 12.5% and therefore are considered to be reasonable.

2.5 Provisional Sums

No provisional sums are included in FAA's tender submission.

2.6 Fees and Inflation

Pre-construction fees paid directly by the Client and Pre-Construction Services Agreement (PCSA) fees for the design team have been excluded.

Post contract award fees are included within the submission, namely Architectural Fees, SAP Calculation Fees, Building Control Fees and Fire Engineer Consultant Fees included EWS1 and external wall design and monitoring costs. These fees do not seem unreasonable for the input required.

As noted in 2.2.2, inflation has been baselined at 2Q2023 and the tender submission open for acceptance for a period of 90 days from the 28/04/2023. (refer to Q&A no. 1 – query 1).





2.0 Cost Review (Cont'd)

2.7 Contingencies/ Risk

No contingency or risk allowance has been included within the tender submission. NML would recommend a Contingency allowance of 10% and a Risk allowance of 5% of the total contract sum be included for unforeseen circumstances. This would only be expended by an Employer's Agent (EA) Instruction.

FAA have included a Contractor's Design Risk of £109,758.65 has been included within their tender submission and we understand that this is to enable the agreement of the contract sum which will become part of the fixed price contract sum (see Appendix B). This equates to 2.5% of the tender submission which matches our benchmark expectation and is considered reasonable.

2.8 Insurances

We queried regarding the insurances included in the tender, FAA states that Employers Liability (EL) at £ 10,000,000, Public Liability (PL) at £ 10,000,000, Product Liability at £10,000,000, Contractors All Risks (CAR) at £2,000,000, Professional Indemnity (PI) at £ 5,000,000 are included in the tender submission.





3.0 Benchmarking

3.1 Benchmarking

NML use a number of Benchmarking comparators including the Building Cost Information Services (BCIS) and estimating guides and pricing books such as Spons and Laxtons as a source of benchmarking. NML also use cost data and information from our own projects and experiences, Government published data and our contacts within main contractor's, specialist contractors and sub-contractors, material manufacturers and suppliers. This dovetails with our own experience within the market and enables us to provide cost data information to our client's.

Where data from published sources of benchmarking is limited, our in-house experience and contacts enables us to provide cost information in the current market conditions.

It should be noted that in the wake of ever-rising inflation, the construction process is experiencing serious challenges including increase of material costs, supply-chain obstructions, and shortages of labour. Increased demand for cladding remediation projects may cause capacity issues within the sector and this is likely to add increase in costs. This uncertainty cannot be accurately predicted, and its impact will result in an increased risk for the contractor bidding on a fixed construction period.





4.0 Conclusion

4.1 Conclusion

Our benchmarking rates are taken from several sources, some complex and others of a more simple nature. This project represents one of a relatively very simple nature. It is therefore our opinion and taking into account the scope of works and the current uncertainties within the labour market and pressure on contractor's supply chains, that subject to the expenditure of the contingency contained within the submission being carefully managed, that the FAA submissions would represent a reasonable value for money.





5.0 Appendices

Appendix A – Tender Submission

Appendix B – Question-and-Answer Document



Appendix A – Tender Submission

- Quotation received (ref. 12627, Revision A) dated 28/4/2023 from Fleetwood Architectural Aluminium Ltd
- Drawings and Specifications issued by GAA on 28/4/2023



Fleetwood Architectural Aluminium Quotation



The UK's leading contractors choose Fleetwood Architectural Aluminium as partners in their large-scale complex architectural projects. We are specialists in the design, manufacture and installation of windows, doors, curtain wall, rainscreen and facades. Our uncompromising approach to quality, proven reliability and continuous investment in skills and manufacturing allows us to work on progressively larger projects with contractors or direct with clients.

Spectrum Dagenham
Revision: A

Quotation Prepared by





Hartdixon
14 Devonshire Square
City of London
EC2M 4YT

Fleetwood Architectural Aluminium
480 Bath Road
Slough
SL1 6BB

For the attention of :



DATE: 28/04/2023 REVISION: A

RE: 12627 Spectrum Dagenham

We thank you for your enquiry and have much pleasure in submitting our quotation all as detailed below, which we trust meets with your approval.

Unless superseded by the specification and conditions outlined, our quotation offer has been calculated and prepared from the documentation supplied with your invitation to tender.

THE OFFER

The Design, Manufacture, Delivery to site, Installation (To suitable prepared structurally supporting building structure by others) :-

QUOTATION / VALUE

£ 4,785,477.05

Please see the summary page for the full breakdown of our quotation.

The above quotation will remain open for acceptance for a period of 90 days from this date.

Price Fluctuations

Our tender is based upon today's rates and is therefore not fixed due to volatility within the market. We can suggest offering provisional sums for potential uplifts as it is difficult to predict any fluctuations in prices due to the volatility of the market and can only hold our price for 90 days.

Lead Time

Please refer to FAA programme.

Pricing Method and Scope Submitted

Take off has been made from elevation and floor plans.

Specifications Referenced

20644_PCSA_Spectrum_Building_Dagenham_cladding_remedial_works
23004-GAA-XX-XX-RP-A-0001

FAA Specification

Specification of Glazing / Spandrel Panels

Reference

Spandrel Mettaline Ultima PPC aluminium insulated spandrel panel

Specification of Louvres

Allowance; No Allowance has been made

Specification of Cladding

Cladding type 1 Vulcan Cerama cladding panels

Decking Aluminium Alideck Senor flat boards

Privacy screens Allowance has been made for 5mm ali sheets

Firestopping

Allowance; has been made for siderise RH 90 min firestopping at 6th floor slab level

Fire Rating (Mins): 90

Electrical Continuity/Earth bonding

Fleetwood will liaise with the electrical sub-contractor with reference to electrical continuity/earth bonding of the various window and screen assemblies to ensure that the requirements and regulations for the electrical equipment of buildings issued by the Institute of Electrical Engineers are observed.

Specification of External Mastic Sealants

The external mastic seal to the periphery of our aluminium works and the structure to be Arbosil 1090/1096 1 part low modules dynamic movement silicone sealant (standard colour) to a maximum joint size limited to 10mm ±5mm.
(Minimum workable joint size 6mm)

'On Site' Testing

Testing (Hose Test) 4 day(s) Hose Testing (5% of facade critical joints)

COMMERCIAL NOTES

British Standard EN ISO 9001:2015, ISO 14001: 2015, ISO 45001, 2018

Fleetwood are registered EN ISO 9001:2015, ISO 14001: 2015, ISO 45001, 2018 and shall carry out the procedures laid down in our Quality Manual with continued auditing and re-assessments undertaken by an Independent Authority.

Protection of Sub-Contract Work and Cleaning

Fleetwood have included for the application of a low tack protective tape to the screen and window aluminium sections at the time of fabrication. This low tack tape is to protect the aluminium surfaces during manufacture, transportation, site storage, distribution around site and installation.

Fleetwood have included for low tack tape & correx/Spraylat protection. We have included for the removal of our protection, upon handover / completion of the installation of the sub-contract works.

Any additional requirements for any further protection work, will constitute an addition to our sub-contract work. Please refer to Prelims section for any protection costs.

With reference to the cleaning of our sub-contract works, Fleetwood, as previously stated will remove all Low tack tape film/ Spraylat from the external faces of the works on completion of the installation

Drawing and Design

- (a) At the time of placing the order we will require the following:
 - (i) All construction drawings pertinent to our sub-contract works.
 - (ii) Full specification.
 - (iii) All other relevant information.
- (b) Any design work will be undertaken in accordance with relevant British Standards and Codes of Practice. We do not include for any fee leviable for the purpose of obtaining planning approval or meeting Building Regulations.

Survey of "As Built" Openings

Allowance has been made for spot checks of structural openings.

Should there be any discrepancies between the "as built" structure and previously agreed sizes, we will inform you so that corrective action to the openings can be undertaken by yourselves, prior to our installation.

Site Conditions

- (a) All site preparation necessary for the installation of our work is to be satisfactorily carried out by FAA prior to our deliveries, including hard leveled firm access to the point of installation and sufficient unobstructed area of the site adjacent to the installation point.
- (b) Upon completion of the whole (or each phase) of our installation, the authorised site agent will sign acceptance notes(s) without unreasonable delay, and the risk of protection shall then pass to others.
- (c) The Contractors' provision of scaffolding etc. both for access and safety protection must be sufficient to satisfy statutory regulations.
- (d) Our price includes for off-loading our vehicles using FAA issue fork lift/driver, taking our materials to a point of hoisting and receiving from the point of hoisting and taking to required position of fixing.
Unless otherwise specified, all horizontal and vertical distribution will be undertaken by Fleetwood.
- (e) We require all apertures, primary and secondary structures to be structurally sound, and that they carry all dead and imposed loads transferred by the aluminium frames and glazing.

Unless stated in our quote, Cavity closers, internal vapour barriers and external damp proof membrane to the building structure is not included. Please note, this is not in reference to any EPDM required to our glazing or external vapour barriers to cladding.
- (f) No allowance has been made by Fleetwood for any cutting back or trimming of damp proof membranes from other trades.

FINANCIAL REQUIREMENTS

Terms of Payment

Receipt of payment to be strictly 30 days of monthly application.

Payment for Design

The Contract is Design & Build FAA will be Main Contractor.

Material off-site Payment

FAA as Main contractor will provide provision in the sub-contract agreement for the inclusion of "materials off-site payments" within the interim valuations, applications will be made for such.

International Suppliers

Where an International supplier is specified and an advanced payment required, the Main Contractor will need to make this payment either direct or via Fleetwood as per payment terms with the specified supplier. Fleetwood will be responsible for making any such advance payments or deposits.

LAD's

Liquidated and ascertained damages will be limited to a maximum of 6% of the value of our sub-contract sum on the basis of 1½% per week for a maximum duration of 4 weeks.

Retention

Retention will be set at a level of 3%, held until completion of the sub-contract works, at which point 1.5% will be released. The remaining 1.5% will be released 12 months thereafter or upon completion of our defects, whichever is the sooner.

Warranties/Bonds

Fleetwood, subject to agreement of wording and specific terms of the warranties required would provide a warranty.

Fleetwood will not provide an on-demand performance bond unless stated on our summary page.

Insurances

EMPLOYER'S LIABILITY:

Indemnity : £10,000,000 any one incident or series of incidents arising out of one event
Renewal Date : 30th January 2024

PUBLIC LIABILITY:

Indemnity : £10,000,000 any one claim and in aggregate for Product liability claims
Renewal Date : 30th January 2024

PRODUCTS LIABILITY:

Indemnity : £10,000,000 any one claim and in aggregate for Product liability claims
Renewal Date : 30th January 2024

CONTRACTORS ALL RISKS:

Sum Insured : Limit £2,000,000 any one Contract Site
Renewal Date : 30th January 2024

PROFESSIONAL INDEMNITY:

Sum Insured : £5,000,000 any one claim and in the aggregate
Renewal Date : 12th June 2023

Daywork Rates/Variations/Tax Details/VAT/Registration Number

(a) Our Daywork rates are as follows:

Labour £45.00 per hour
Materials net cost + 30%
Plant net cost + 30%

(b) We confirm that Fleetwood is the user of a valid CIS5 certificate

(c) Variations are subject to 24% Overheads & Profit

Certificate reference – 17661 19475

(d) Our V.A.T. Registration No – 282 4441 05

(e) Company Registration No - 03321897

We trust you find our quotation of interest, and should you have any further queries, please do not hesitate to contact the undersigned.

Yours faithfully

For Fleetwood Architectural Aluminium Limited

[Redacted Signature]



FAA Breakdown



GLAZING BREAKDOWN

28/04/2023								Quantity Breakdown									
Item/ref	Description	Location	Glass Ref	Packs	W	H	Qty	Ground	First	Second	Third	Fourth	Fifth	Sixth	Roof	Nett	
Removal																	
Spandrel1	3 panes	North			1180	2190	36	4	8	8	8	8				£12,849.23	
Spandrel1 LV	3 panes with louvre	North			1180	2190	40		10	10	10	10				£14,276.92	
Spandrel2	1 pane	North			1180	696	82	4	13	13	13	13	13	13		£29,267.69	
Spandrel3	4 panes (door)	North			1180	1346	36		6	6	6	6	6	6		£12,849.23	
Spandrel4	1 pane	North	Staircase		630	2100	6		1	1	1	1	1	1		£2,141.54	
Spandrel1	3 panes	South			1180	2190	39	7	8	8	8	8				£13,920.00	
Spandrel1 LV	3 panes with louvre	South			1180	2190	24		6	6	6	6				£8,566.15	
Spandrel2	1 pane	South			1180	696	72	6	11	11	11	11	11	11		£25,698.46	
Spandrel3	4 panes (door)	South			1180	1346	24		4	4	4	4	4	4		£8,566.15	
Spandrel4	1 pane	South	Staircase		630	2100	14	2	2	2	2	2	2	2		£4,996.92	
Spandrel5	1 pane	South	Staircase		420	2100	14	2	2	2	2	2	2	2		£4,996.92	
Spandrel6	1 pane	South	Staircase		1400	700	6	1	1	1	1	1	1			£2,141.54	
Doors		South	Staircase		1600	2190	2	1	1							£713.85	
Spandrel7	5 panes	West			2900	2150	6		1	1	1	1	1	1		£2,141.54	
Entrance door	Side panels				2900	2500	1	1								£2,587.69	
Spandrel1	3 panes	East			1180	2190	4		1	1	1	1				£1,427.69	
Spandrel2	1 pane	East			1180	696	8	2	1	1	1	1	1	1		£2,855.38	
Privacy screens	HPL panel	North & South			1900	2400	30		5	5	5	5	5	5		£21,415.38	
Installation of new items																	
Spandrel1	3 panes	North			1180	2190	36	4	8	8	8	8				£106,439.49	
Spandrel1 LV	3 panes with louvre	North			1180	2190	40		10	10	10	10				£124,042.83	
Spandrel2	1 pane	North			1180	696	82	4	13	13	13	13	13	13		£84,915.37	
Spandrel3	4 panes (door)	North			1180	1346	36		6	6	6	6	6	6		£67,369.42	
Spandrel4	1 pane	North	Staircase		630	2100	6		1	1	1	1	1	1		£10,434.36	
Spandrel1	3 panes	South			1180	2190	39	7	8	8	8	8				£115,309.45	
Spandrel1 LV	3 panes with louvre	South			1180	2190	24		6	6	6	6				£74,425.70	
Spandrel2	1 pane	South			1180	696	72	6	11	11	11	11	11	11		£74,559.84	
Spandrel3	4 panes (door)	South			1180	1346	24		4	4	4	4	4	4		£44,912.95	
Spandrel4	1 pane	South	Staircase		630	2100	14	2	2	2	2	2	2	2		£24,346.85	
Spandrel5	1 pane	South	Staircase		420	2100	14	2	2	2	2	2	2	2		£18,456.89	
Spandrel6	1 pane	South	Staircase		1400	700	6	1	1	1	1	1	1			£7,230.51	
Doors		South	Staircase		1600	2190	2	1	1							£19,290.41	
Spandrel7	5 panes	West			2900	2150	6		1	1	1	1	1	1		£32,758.46	
Entrance door	Side panels				2900	2500	1	1								£7,418.42	
Spandrel1	3 panes	East			1180	2190	4		1	1	1	1				£11,826.61	
Spandrel2	1 pane	East			1180	696	8	2	1	1	1	1	1	1		£8,284.43	
Privacy screens	Ali panel	North & South			1900	2400	30		5	5	5	5	5	5		£145,888.02	

Totals							888									£1,149,322.30	
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CLADDING BREAKDOWN

28/04/2023

Item/ Ref	Description	Location	m ²	QTY	Nett
Removal					
Trespa Meteon		South elevation	312.5	1	£117,211.54
Trespa Meteon		East elevation	52.64	1	£19,744.05
Trespa Meteon		North elevation	233.86	1	£87,715.49
Trespa Meteon		West elevation	63.7	1	£23,892.40
Timber decking triangular		South & North elevation	11.82	25	£110,835.23
Timber decking rectangular		South & North elevation	71.63	2	£53,733.52
Installation of new items					
3mm Aluminium cladding		South elevation	312.5	1	£283,766.59
3mm Aluminium cladding		East elevation	52.64	1	£47,799.91
3mm Aluminium cladding		North elevation	233.86	1	£212,357.29
3mm Aluminium cladding		West elevation	63.7	1	£57,842.98
Aluminium decking triangular		South & North elevation	11.82	25	£189,817.38
Aluminium decking rectangular		South & North elevation	71.63	2	£92,024.49
Remove and Reinstall					
RWP				1	£7,625.64
Hopper				4	£848.00
Sprinkler WP				1	£9,497.60
Letter box				2	£3,392.00
Totals					£1,318,104.12



Prelims

TOTAL	£ 299,871.02
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Summary



Project Title:	Spectrum Dagenham	E-No:	12627
Estimator:	██████████k	Date of Tender:	28/04/2023
Scope of Works:	Recladding	Revision:	A

SUMMARY

Nett			
Façade Works		£	2,467,426.42
Façade Prelims		£	299,871.02
Scaffold & Hoist		£	961,186.00
Logistics		£	532,037.48
Fire Engineer		£	47,700.00
Design Fees		£	73,500.00
SAP Calcs		£	2,875.00
Building Control		£	5,750.00
Sub Total		£	4,390,345.92
OH&P 6.5%		£	285,372.48
Design Risk 2.5%		£	109,758.65
Total		£	4,785,477.05



End.

Quotation No: 9770

Page: 1

Client:

Fleetwood

Architectural
Aluminium

Fleetwood House
480 Bath Road
Slough
Berks
SL1 6BB

Project:

Spectrum Building
Freshwater Rd
Dagenham
RM8 1EH

Contract No: 9770

Contract Description: Scaffolding

Quotation date: 10/03/2023

QUOTATION

Dear Sirs,

Re: Scaffolding

We acknowledge and thank you for your valued Enquiry, and have pleasure in submitting our Quotation for Scaffolding works on the above Site in accordance with your requirements.

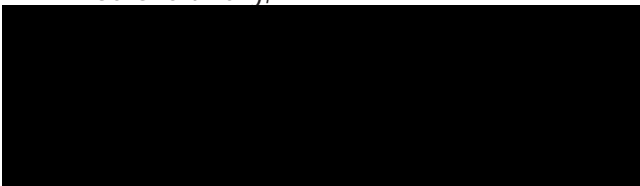
Our quotation is to be read in conjunction with the following documents which form part of our offer:

1. Appendix A - Scaffold Specific Conditions
2. Appendix B - (Activity Schedule) Hire Periods
3. Appendix C - Schedule of Rates
4. Appendix D - Scaffold definitions
5. Appendix E - Conditions of Hire

Performance of any work included in this offer is deemed to be acceptance of this Quotation, and the Terms, Conditions, Specification and Prices contained therein.

We trust that you will find this quotation satisfactory, should you have any queries, please contact the undersigned.

Yours faithfully,



SUMMARY

Item No	Item Name	Quantity	Hire Period	Total Price
1	Perimeter Scaffold	1	40 weeks	£368,295.00
2	Protection Fan	1	40 weeks	£20,609.00
3	Debris Netting	1	n/a	£30,502.00
4	System Staircase	1	40 weeks	£9,884.00
5	Hoist Run Off Tower	1	40 weeks	£23,083.00
6	Front Elevation Car Park Gantry	1	40 weeks	£267,087.00
7	Scaffold Bridge	1	40 weeks	£51,521.00
8	Attendance (provisional allowance)	1	n/a	£65,000.00
9	2000kg Passenger Goods Hoist	1	40 weeks	£59,555.00
10	Weekly scaffold inspections	40	40 weeks	£13,500.00
11	Scaffold design cost	1	n/a	£31,250.00
12	Prelims	1	40 weeks	£40,000.00
Total:				£980,286.00

Notes / clarifications

- no allowance has been made for licences and permits
- no allowance has been made for scaffold alarm system
- no allowance has been made for scaffold lighting
- no allowance has been made for working out of normal working hours
- normal working hours are 0800-1600hrs / Monday - Friday
- no allowance has been made for non-slip ply sheeting / decking
- no allowance has been made for hoarding or ply sheeting
- no allowance has been made for traffic management
- it has been assumed that all planters, trees and any other objects that impede the scaffolding will need to be removed prior to the work commencing (removed by others)

Quotation No: 9770

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Item No: 1 of 12 / Quantity: 1

Perimeter Scaffold

Tube and Fitting Independent scaffolding for access.
We will erect the scaffolding in one operation. We will dismantle the scaffolding in one operation.
Allowance has been made for double width scaffold to front and rear elevations to accommodate projecting balconies. Allowance has been made for scaffold deck underside 5th floor balcony (front and rear).
Excluding any adaptations or alterations.

The scaffolding will be built to the following dimensions:

	Length	Width	Elevation Height
Access Scaffold			
North elevation (front)	55.00 m	4 + 2 boards	21.00 m
Rear elevation (south)	48.00 m	4 + 2 boards	21.00 m
Side elevation (west)	9.00 m	4 + 2 boards	21.00 m
Side elevation (east)	9.00 m	4 + 2 boards	21.00 m
South east staircore	25.00 m	4 + 2 boards	21.00 m
South west staircore	10.00 m	4 + 2 boards	21.00 m

The scaffolding will be built with quad guard rails at all lifts.

Decking

Main Deck: 4 Boards, Inside Boards: 2 Boards, Toe Boards: 1.
Boards will be placed once only by us at all floor levels.
Timber toe boards will be provided on all decked lifts.

Access

All listed independents will include 1 ladder access built from the ground.

Loading

The scaffolding will support the following maximum quantities of uniformly distributed lift loads:

- All listed independent scaffolds: 1 x 2.00 kN/m²; 1 x 1.00 kN/m²
- All inside boards: 2 x 0.75 kN/m²

These loads must not be exceeded.

Price*Item Price**Hire Period (in weeks)***£368,295.00****up to 40 weeks**

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<i>Extra Hire (per week or part thereof)</i>	£12,867.38
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All prices exclude tax.

Quotation No: 9770

Page: 5

Item No: 2 of 12 / Quantity: 1

Protection Fan

Tube and Fitting to form scaffold fan for protection.
We will erect the scaffolding in one operation. We will dismantle the scaffolding in one operation.
No adaptations to this scaffolding have been allowed for. No add-ons have been allowed for in this scaffolding.

The scaffolding will be built to the following dimensions:

	Length	Width
Protection fan to sides and rear elevation scaffold (2nd floor level)	100.00 m	6 boards

Decking

Single layer of boards; 6 boards wide;

Access

N/A

Loading

Fan rated at 0.75kN/m2 - protection only.

Price

Item Price

£20,609.00

Hire Period (in weeks)

up to 40 weeks

Extra Hire (per week or part thereof)

£720.01

All prices exclude tax.

Quotation No: 9770

Page: 6

Item No: 3 of 12 / Quantity: 1

Debris Netting

Allowance to supply and install fire rated netting to external perimeter scaffold once only. Excluding any replacement or maintenance.

<u>Price</u>	
<i>Item Price</i>	£30,502.00
<i>Hire Period (in weeks)</i>	N/A
<i>Extra Hire (per week or part thereof)</i>	N/A

All prices exclude tax.

Quotation No: 9770

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Item No: 4 of 12 / Quantity: 1

System Staircase

System Stair Tower scaffolding for access.

We will erect the scaffolding in one operation. We will dismantle the scaffolding in one operation.

No adaptations to this scaffolding have been allowed for. No add-ons have been allowed for in this scaffolding.

The scaffolding will be built to the following dimensions:

	Length	Width	Elevation Height
Stair Tower - location to be confirmed	3.05 m	1.66 m	21.00 m

Decking

Stair towers will be decked according to the manufacturer's guidance.

Steel toe boards will be provided on all decked lifts.

Access

1 stair tower accesses.

Loading

Stair towers must be loaded according to the manufacturer's guidance. These loads must not be exceeded.

Price*Item Price***£9,884.00***Hire Period (in weeks)***up to 40 weeks***Extra Hire (per week or part thereof)***£259.20**

All prices exclude tax.

Quotation No: 9770

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Item No: 5 of 12 / Quantity: 1

Hoist Run Off Tower

Tube and Fitting to form hoist run off tower for material distribution.
We will erect the scaffolding in one operation. We will dismantle the scaffolding in one operation.
No adaptations to this scaffolding have been allowed for. No add-ons have been allowed for in this scaffolding.

The scaffolding will be built to the following dimensions:

	Length	Width	Elevation Height
Hoist Tower (location to be confirmed)	3.00 m	6 boards	21.00 m

Decking

Fully boarded at all floor levels.

Access

Via hoist.

Loading

Designed to suit 2000kg passenger goods hoist.

Price

Item Price

£23,083.00

Hire Period (in weeks)

up to 40 weeks

Extra Hire (per week or part thereof)

£806.42

All prices exclude tax.

Quotation No: 9770

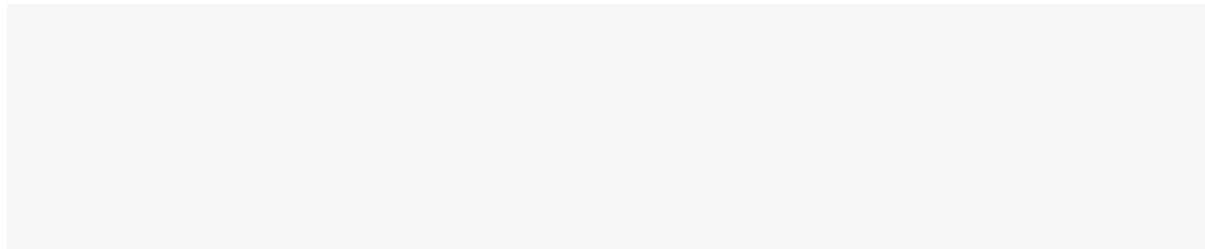
Page: 9

Item No: 6 of 12 / Quantity: 1

Front Elevation Car Park Gantry

Tube and Fitting , scaffold beam work to form gantry / protection over car park.
We will erect the scaffolding in one operation. We will dismantle the scaffolding in one operation.
No adaptions to this scaffolding have been allowed for. No add-ons have been allowed for in this scaffolding.

The scaffolding will be built to the following dimensions:



Decking

Boarded at one level - single layer of boards.

Access

TBC

Loading

Subject to design.
Gantry to take front elevation scaffold.

Price

Item Price

£267,087.00

Hire Period (in weeks)

up to 40 weeks

Extra Hire (per week or part thereof)

£9,331.39

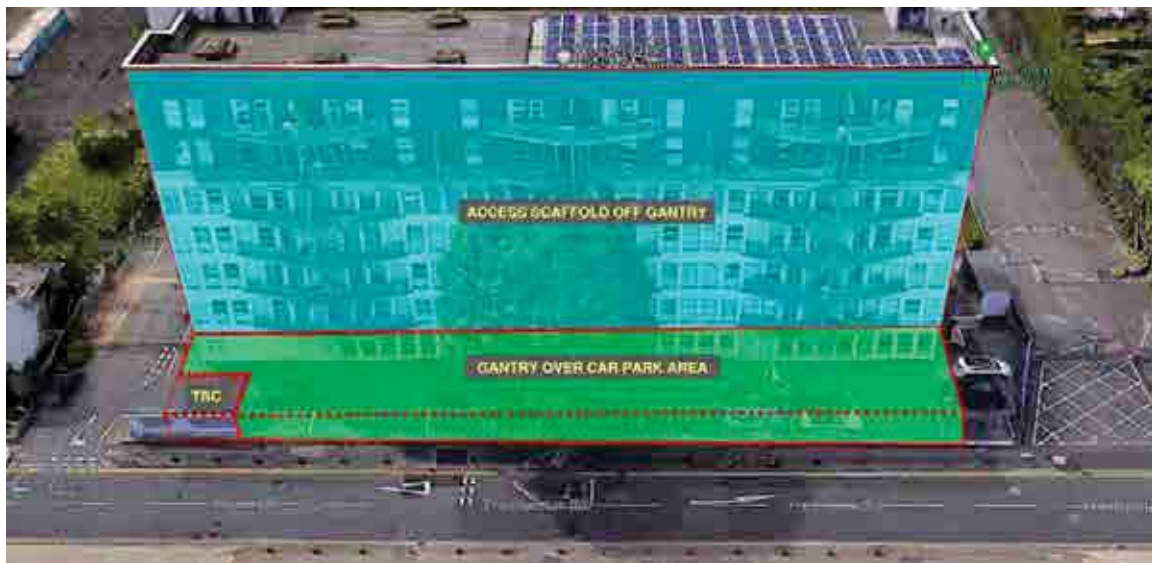
All prices exclude tax.

Notes:

- no allowance has been made for ply sheeting or hoarding
- no allowance has been made for scaffold lighting
- no allowance has been made for scaffold alarm system

- no allowance has been made for pavement licence (if required)
- no allowance has been made for non slip ply sheeting (buffalo or similar)
- scaffold support towers may block some car park spaces

Indicative markup



Quotation No: 9770

Page: 11

Item No: 7 of 12 / Quantity: 1

Scaffold Bridge

Allowance to bridge the following areas:

- rear elevation over nursery
- rear elevation basement stairs
- side elevation east (entrance canopy)
- side elevation west (entrance canopy)

Price

Item Price

£51,521.00

Hire Period (in weeks)

up to 40 weeks

Extra Hire (per week or part thereof)

£1,800.04

All prices exclude tax.

Quotation No: 9770

Page: 12

Item No: 8 of 12 / Quantity: 1

Attendance (provisional allowance)

2 men x 10 weeks in attendance to carry out various scaffold adjustments - move handrails, pull back boards, move ties etc. excluding any additional materials or material cuts.

<u>Price</u>	
<i>Item Price</i>	£65,000.00
<i>Hire Period (in weeks)</i>	N/A
<i>Extra Hire (per week or part thereof)</i>	N/A

All prices exclude tax.

Quotation No: 9770

Page: 13

Item No: 9 of 12 / Quantity: 1

2000kg Passenger Goods Hoist

Supply and install 1no Single Rack & Pinion 20/32 Passenger & Goods Hoist.

Cage Size - 1.5m x 3.2m
 Safe Working Load - 2000kg / 20 Passengers
 Top Landing Height - 23m
 No of landing Gates - 6no
 Mast Ties - 2
 Power Supply - 415V 80A

Inclusions

Machine Hire
 Steel Foundation Plate
 Delivery Transport (Weekday)
 Erection & Commission 1 visit
 Sunbelt Initial Thorough Examination
 Supply of Test Weights
 Statutory Thorough Examination 6 Monthly
 Dismantle 1 visit
 Collection Transport (Weekday)
 Drawings, Calculations & Configuration

OPTIONAL EXTRAS - To Be Confirmed

Operator Training - Up to 4 people
 Additional Operatives Training - Per Person
 Landing Protection Panels
 Landing Infill Plates
 Revised Drawings & Calculations
 Weekly Safety Inspections
 Monthly Safety Inspections
 C Gate Modification
 Rear Entry Modification
 Heavy Duty Ties (3m - 5m long)
 2m Top Hat

Price

Item Price

£59,555.00

Hire Period (in weeks)

up to 40 weeks

Extra Hire (per week or part thereof)

£850.00

All prices exclude tax.

Quotation No: 9770

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Item No: 10 of 12 / Quantity: 40

Weekly scaffold inspections

Allowance to undertake weekly scaffold inspections for 40 weeks.

Clarifications:

*Minimum site visit per week - 338.00 or £42.25 for each inspected tag, whichever is greater.
Our current bid has assumed that there will be no more than **8nr** structures and associated tags at any one time for the duration of the project.*

Price	
<i>Item Price</i>	£13,500.00
<i>Additional Scaffold Inspections</i>	£338.00 per week

All prices exclude tax.

Quotation No: 9770

Page: 15

Item No: 11 of 12 / Quantity: 1

Scaffold design cost

This allowance is to cover the cost of:

- *Design engineer to produce drawings and calculations for the scaffolding*
- *Site visit by our design engineer to ascertain requirements*
- *PDF drawings complete with calculations*

Clarifications:

- *Price is based on our design engineers producing and submitting drawings and calculations to the required items, as contained within this quotation.*
- *Any additional submissions, alterations, changes required on the original drawings after the first submission, will be charged as an extra over cost.*
- *Any subsequent drawings required for additional works on the site during the contract period will also be charged at the agreed rates.*

<u>Price</u>	
Item Price	£31,250.00

All prices exclude tax.

Quotation No: 9770

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Item No: 12 of 12 / Quantity: 40

Prelims

Prelims for the duration of 40 weeks.

We have included an allowance for prelims for items that cannot be allocated to a specific element, sub-element or component. This may include costs associated with management and staff, site establishment, temporary services, safety and environmental protocols, the maintenance of site records, completion and post-completion requirements, sites services.

Subsequent additional weeks will be charged at £1,000.00/week.

For clarity prelims are not included within our rates.

<u>Price</u>
<i>Item Price</i>

£40,000.00

All prices exclude tax.

CLARIFICATIONS

1. Issues Arising From Scaffolding Works

- (a) You are responsible for the making good / repair of any damage caused by the erection, alteration and / or dismantling of scaffolds on existing roofs.
- (b) You are responsible for ensuring that the fabric of the building is suitable and strong enough to withstand the loads imposed by the use of ties.
- (c) Our quotation includes for the fixing of ties once only, unless otherwise stated. The cost of taking out and re-fixing ties for any reason whatsoever will be charged as an additional item.

1. Foundations

- (a) You are responsible for ensuring that the existing structure will support the dead and live loads imposed by the scaffold together with any additional loads imposed when the scaffold is in use.
- (b) You are responsible for ensuring that the fabric of the building / structure, from which the scaffold is suspended, is capable of withstanding the loads imposed. For the avoidance of doubt any additional costs incurred as a result of our inability to construct the scaffold as intended will be charged as an additional item and / or we reserve the right to determine the contract and recover our costs.
- (c) You are responsible for approval of drawings indicating the position of standards prior to commencement of erection.

3. Pavement License and / or Permission to Erect Scaffolds (Client responsibility)

- (a) You are responsible for obtaining any third party permission to enable the scaffolding structures to be erected either on the site or on adjacent property. Third party permission includes, but is not limited to, the application for, and obtaining of, pavement licenses in accordance with section 169 of the Highways Act 1980. Copies of written third party permission / licenses must be provided to us before work is commenced.
- (b) We reserve the right to review and amend this quotation in the event that third party permissions / licensees impose additional conditions and / or obligations.

4. Pavement Licence (our responsibility)

- (a) If the Local Highway Authority requires us as the scaffolding contractor to apply for and obtain a pavement licence in accordance with section 169 of the Highways Act 1980 we will do so. However, any fees incurred by us in obtaining the licence will be charged as an additional item. Furthermore, any additional costs to the work not included in this quotation and arising from compliance with the obligations imposed by the licence will be charged as an additional item.
- (b) Any fees incurred by us in obtaining the necessary pavement licences will be added to the contract sum.

5. Customer Obligations and Liabilities

- (a) You are responsible for the security of our scaffolding equipment at all times, whether erected or not, and you are required to indemnify us from all losses.
- (b) You are required to take all necessary steps to prevent unauthorised access on to the scaffolds at any time.
- (c) You are responsible for providing us with an accurate datum and lines for setting out our scaffolds and you are responsible for checking the accuracy of our setting out.

6. Safety Issues

- (a) Scaffolds handed over to you will be tied to the structure in accordance with the statutory regulations. Ties should not be removed without our permission and / or approval and should be removed by or under the supervision of a competent person.
- (b) Scaffolds have been designed to accommodate the loads indicated in the quotation. It is your responsibility to ensure that the scaffolds are not overloaded and that any material is stacked safely and securely on the scaffold.

7. Attendances

- (a) You are required to cut all holes in the fabric of the building, free of charge, which may be necessary for us to erect the scaffold. You are responsible for the making good of all holes on completion of dismantling of the scaffolds.

(b) You are responsible for removing all materials, equipment and debris from the boarded lifts before they are dismantled / moved to a new position, or finally removed from site.

8. Financial Issues

(a) The contract hire period(s) for each of the items included in this quotation represent the minimum periods of hire to be paid by you. Allowance will not be made for periods of hire less than the minimum periods or for periods when the scaffold is not in use for whatever reason. For the avoidance of doubt allowance will not be made for holidays.

(b) Allowances will not be made to the period of hire, whether contract hire periods or periods of extra hire, for holidays or any period when scaffolds are not in use.

(c) For purposes of making interim payments each item of work will be valued as follows: ~~SEP~~ The quantity of work erected will be assessed as a percentage of the total amount of each item to be erected.

- The value of work erected will be (70%) of the quantity determined above.

(a) Our quotation is based on the work being carried out during normal working hours. The cost of carrying out work during periods other than normal working hours will be charged as an extra to the contract.

(b) No allowances have been made for LAD's within our bid, there we will not accept them being levied against us.

9. Programme Issues

(a) You are required to provide a minimum of 8 hours work per gang on each and every visit to site.

(b) Variations to the Contract Programme must be agreed by your representative and our visiting supervisor. You must confirm programme variations to us within two working days.

(c) The Contract Programme must be automatically extended by the number of days affected by the occurrence of inclement weather.

- (d) A minimum written notice period of seven days is required for the commencement of the works or for each separate visit following a break of more than three days.
- (e) The hire periods of each item of scaffolding identified in our quotation is a minimum period. A rebate will not be given in the event that the period is reduced for whatever reason.
- (f) Additional costs arising from agreed changes to the Contract Programme will be added to the contract sum.
- (g) The Sub-contract period is deemed to be the hire period of the main scaffolding.
- (h) Additional hire charges will commence after the expiry of the hire period for each item of scaffolding. For the avoidance of doubt the granting of extensions of time will not defer the commencement of additional hire charges.
- (i) Additional Hire charges will be charged at 4% of the full contract rate per week.

10. Specification Issues

- (a) Our price(s) and / or design(s) are based on the information / specification provided by you at tender stage. We reserve the right to amend our price(s) and / or design(s) in the event of changes to your information / specification.
- (b) You are responsible for providing and maintaining adequate access around the structure during erection and dismantling operations.

11. Miscellaneous Issues / Qualifications

- (a) A full day's work should be made available for our employees on each and every visit. We reserve the right to charge any lost time at day-work rates.
- (b) Our price(s) assume that good and uninterrupted access and egress from the works will be maintained at all times during erection and dismantling operations.
- (c) Our price(s) do not include for the provision and maintenance of lightning and earthing conductors of any kind or description.

- (d) No allowance has been made for an alarm system (unless specifically described)
- (e) No allowance has been made for any traffic management measures that may be required
- (f) No allowance has been made for any back propping (unless specifically described)
- (g) We have not included with our price for a Banksman/ Slinger
- (h) Where monarflex/netting has been included it has been allowed to be installed once only
- (i) Please refer to our conditions of hire which is attached to this quotation
- (j) Prices are subject to full site survey or/and scaffold design
- (k) Our price(s) is subject to design agreement.
- (l) It is a condition of this contract that our standard schedule of rates are included, a copy of which can be forwarded upon request.
- (m) Unless specifically stated within our tender and in accordance with your design brief we have not included for permanent fans to be installed to our scaffold structure. We would like to make clear that in accordance with SG34:17, where there is a risk of objects being dropped on to pedestrians or vehicles from a scaffolding, a protection fan should be provided. The fan should be installed as soon as practicable and remain in place during the erection and dismantle of the scaffolding structure. We have made allowances for a temporary fan (e.g. combi safe netting and the like) where we believe it is required for our sole use only.

[illegible]

[illegible]

		Su - ditto Saturday AM	Sa	5.0	1.00	23.72	25.87	26.39	26.92	0	weeks	n/a	excluded
		Su - ditto Saturday OT	so	0.0	1.50	35.58	38.81	39.59	40.38	0	weeks	n/a	excluded
4.1.2		Marchals											
4.1.2.01		A73 TM / Vehicle Banksman 1 (CPCS A73) - with SIA Licence for Security Function	Mon-Fri 0700-1700										
		A73 - ditto Mon-Fri OT	Mon-Fri 1700-1900										
		A73 - ditto Saturday AM	Sat 0800-1300										
		A73 - ditto Saturday OT	Sat after 5 hrs										
4.1.2.02		A73 TM / Vehicle Banksman 2 (CPCS A73)	Mon-Fri 0800-1800										
		A73 - ditto Mon-Fri OT	Mon-Fri after 10 hrs										
		A73 - ditto Saturday AM	Sat 0800-1300										
		A73 - ditto Saturday OT	Sat after 5 hrs										
4.1.2.03		A73 TM / Vehicle Banksman 3 (CPCS A73) - by Logistics Manager	Mon-Fri 0800-1800										
		A73 - ditto Mon-Fri OT	Mon-Fri after 10 hrs										
		A73 - ditto Saturday AM	Sat 0800-1300										
		A73 - ditto Saturday OT	Sat after 5 hrs										
4.1.2.04		A73 TM / Vehicle Banksman Relief (CPCS A73) - no relief cover	Mon-Fri 0800-1800										
		A73 - ditto Mon-Fri OT	Mon-Fri after 10 hrs										
		A73 - ditto Saturday AM	Sat 0800-1300										
		A73 - ditto Saturday OT	Sat after 5 hrs										
4.2		Traffic Management : Equipment											
4.2.01		Body Worn Cameras											
a		- Body Worn Camera (Including 16GB SD Card)										638.25	rate only
b		- Klick Fast Centre Chest Harness										nr	rate only
c		- Smart Hub (docking and charging cradle (2 way)										nr	rate only
d		- Access Cloud Software										each / p.a	rate only
4.2.02		- LED Signalling Batons										nr	rate only
4.2.03		Computerised Web-Based Delivery Management System								8	months	126.50	1,012.00
4.2.04		Mobile Tablet											
a		- Rugged Tablet										nr	rate only
b		- Data SIM										months	rate only
c		- DMS App for Tablet - per tablet										57.50	rate only
d		- Hauler App (for use with Datascope DMS) - per user										months	rate only
4.2.05		47" LED TV in Canteen										nr	rate only
4.2.06		Traffic Management Equipment (PROVISIONAL QUANTITIES) - supply only unless stated otherwise											
a		- Heras Fencing (3500mm long)										L/m	rate only
b		- 50kg brace blocks (U/M rate based on 1m per panel)										L/m	rate only
c		- 20kg brace blocks (U/M rate based on 1m per panel)										L/m	rate only
d		- Angled support arms (U/M rate based on 1m per panel)										L/m	rate only
e		- Heras Gates (double vehicle)										nr	rate only
f		- Heras Gates (single pedestrian)								1	nr	289.58	rate only
g		- Fence Warning 2m High 50mm roll (Green)										nr	rate only
h		- Soundex Performance Acoustic Curtain 1250w x 2050m (1.05m effective) - purchase										Roll	150.56
i		- Soundex Performance Acoustic Curtain 1250w x 2050m (1.05m effective) - hire										L/m	rate only
j		- Soundex Performance Acoustic Curtain 1250w x 2050m (1.05m effective) - hire >52wks										L/m per wk	rate only
k		- Soundex Performance Acoustic Curtain 1250w x 2050m (1.05m effective) - hire >52wks										L/m per wk	rate only
l		- Heras Noise Control Barrier - 1205w x 2000m (1.0m effective) - purchase										L/m per wk	rate only
m		- Heras Noise Control Barrier - 1205w x 2000m (1.0m effective) - hire										L/m per wk	rate only
n		- Heras Noise Control Barrier - 1205w x 2000m (1.0m effective) - hire										each way	rate only
o		- pedestrian segregation barriers (2300mm long)										L/m	rate only
p		- Red Fence Line Break-throughs (Gate Hoops)										nr	rate only
q		- Beacons for Gate Hoops										nr	rate only
r		- Chapter 8 Barriers (2000mm long)								16	L/m	20.67	330.72
s		- T/CBs (3000mm long, unpainted)										nr	rate only
t		- Extra over the above for 1300mm high mesh fence panels										nr	rate only
u		- RB22 Traffic Barriers (2m)										nr	rate only
v		- RB22 Stop Ends										nr	rate only
w		- RB22 Delivery/Collection										each way	rate only
x		- RB22 Heavy Duty Water Filled Barriers, excluding Mesh Top										L/m	107.81
y		- Extra over the above for mesh top								24	L/m	59.02	1,416.48
z		- RB2000 Traffic Barriers (WL 1.65m)										L/m	rate only
aa		- Extra over the above for stop ends										L/m	84.09
ab		- Extra over the above for mesh top										L/m	57.56
ac		- BBS Slot Block Barriers c/w anti-climb heras-style insert (3.5m)								31	L/m	54.69	rate only
ad		- 300x300 Wooden Traffic Log (1m)										L/m	50.60
ag		- Evo Water Filled Separation Barrier (1.0m) end mesh top										L/m	22.46
ah		- Extra over cost to the above for mesh panels fixed to the above										L/m	19.55
ai		- Evo 80 Water Filled High Wall Separation Barrier (1.2m) end mesh top										L/m	34.75

breaks on rota coordinated with delivery bookings

Provisional Allowance subject to agreement of traffic management plan

Pedestrian gate to temp. accommodation entrance

water filled from local site supply

water filled from local site supply

water filled from local site supply

water filled from local site supply

[illegible]

[illegible]

Provisional Quantities for Equipment for use by Multi Service teams should trades default

		Su - ditto Saturday AM	Sat 0800-1300	Sa	5.0	1.00	23.72	25.87	26.39	26.92	0	weeks	n/a	excluded
		Su - ditto Saturday OT	Sat after 5 hrs	Sa	0.0	1.50	35.58	38.81	39.59	40.38	0	weeks	n/a	excluded
7.1.02		Progressive Cleaning Operatives - <i>Please see multiservice operatives</i>	Mon-Fri 0800-1800											
		GO - ditto Mon-Fri OT	M-F after 10 hrs											
		GO - ditto Saturday AM	Sat 0800-1300											
		GO - ditto Saturday OT	Sat after 5 hrs											
7.2		Waste Management - Removal & Disposal												
7.2.01		Waste Management / Progressive Cleaning Small Tools & Consumables									40	man wks	20.55	822.00
7.2.02		e.o. for removal / disposal of pallets												by others
7.2.03		e.o. for Removal / Disposal of brick & block waste												by others
7.2.04		12 yerd skip - Mixed waste									88	nr	343.33	31 973.04
7.2.05		Supply Only Wheeled Bins (if excluded from 7.2.02) - PROVISIONAL QUANTITY												
	a	- 240ltr											70.73	rate only
	b	- 660ltr									20	nr	198.38	rate only
	c	- 1100ltr										nr	228.97	rate only
7.2.06		Lifting Cradle												
	a	- Large cage : 2500x1250mm, capacity 3tr 660l bins, WtL 3000kg											1,652.38	rate only
	b	- Small cage : 1250x1250mm, capacity 1tr 660l bins, WtL 1500kg										nr	1,159.33	rate only
	c	- Small cage : 1250x1250mm, capacity 1tr 660l bins, WtL 1500kg - with ramp										nr	1,397.69	rate only
7.2.07		Wheeled Bin Tipper												
	a	Fork Mounted 660ltr Flat Lid Wheeled Bin Handler - 500kg										nr	1,889.45	rate only
	b	Heavy Duty Stand Alone 4-Wheel-Bin Tippler to empty bins into skip. Maximum Load of 400kg. Electrical connection by others										nr	6,894.25	rate only
	c	Stand Alone 4-Wheel-Bin Tippler to empty bins into skip. Maximum Load of 200kg. Electrical connection by others										nr	5,117.50	rate only
7.2.08		Tipping Skips												
	a	- 1-tender Tipping Skip											647.00	rate only
	b	- ditto on Castors											868.54	rate only
7.2.09		Used COSHH Waste Removal / Disposal (e.g. empty paint cans, mastic, aerosols etc)												Included
7.2.10		Other Hazardous Waste Removal / Disposal												by others
7.2.11		Litter Picking Trolley (External)									1	nr	479.54	479.54
8.0		Logistics / Multi-Service												
8.1		Multi-Service : Labour												
8.1.01		Carpenter	Mon-Fri 0800-1800											
		Cp - ditto Mon-Fri OT	M-F after 10 hrs											
		Cp - ditto Saturday AM	Sat 0800-1300											
		Cp - ditto Saturday OT	Sat after 5 hrs											
8.1.02		Handyman	Mon-Fri 0800-1800											
		Hm - ditto Mon-Fri OT	M-F after 10 hrs											
		Hm - ditto Saturday AM	Sat 0800-1300											
		Hm - ditto Saturday OT	Sat after 5 hrs											
8.1.03		General Operative 1	Mon-Fri 0800-1800											
		GO - ditto Mon-Fri OT	M-F after 10 hrs											
		GO - ditto Saturday AM	Sat 0800-1300											
		GO - ditto Saturday OT	Sat after 5 hrs											
8.1.04		General Operative 2	Mon-Fri 0800-1800											
		GO - ditto Mon-Fri OT	M-F after 10 hrs											
		GO - ditto Saturday AM	Sat 0800-1300											
		GO - ditto Saturday OT	Sat after 5 hrs											
8.2		Multi-Service : Materials, Plant & Equipment												
8.2.01		Handyman Consumables (Provisional Allowance £ 75 each p.w.)									8	man wks	75.00	cost +15%
8.2.02		Handyman Materials (Provisional Allowance £250 each p.w.)									8	man wks	250.00	cost +15%
8.2.03		Handyman Tools, Plant & Eqpt in excess of standard toolkit (Prov Allowance £50 each p.w.)									8	man wks	50.00	cost +15%
8.2.04	a	Water Watch / Dewatering - Submersible Pumps 2"										nr	515.37	rate only

Provisional Quantities as follows:
stored securely locally on floors

service based on bin distribution and removal (trades fill bins), daily cleaning of access
egress & circulation routes (stair cases & corridors) plus progressive cleaning of general
areas on a rota basis (NOT daily).

Based on 1932m2 building replacement as email from F&A (March Janasek) 17.04.2023

for rapid deployment for short periods by the waste & multi-service labour
This is an emergency first response provision only and a full water mitigation/management plan should be developed

2hr per pump/vac
2hr per set per quarter
incl 8.2.02

b											100 l/m	0	100 l/m	188.60	rate only	0.00
c	- Layflat Hose 2"										nr	1	nr	531.47	188.60	
d	- Puddle pumps 1"										nr	0	nr	188.60	rate only	0.00
e	- Layflat Hose 1"										nr		nr	745.78	rate only	
f	- Wet Vacs (1200w)										nr		nr	635.38	rate only	
g	- Storage Container (tool chest or similar)										20nr	0	nr	104.77	rate only	
h	- Floodsax										nr		nr	21.22	rate only	0.00
i	- 110v Extension Leads										nr		nr	8.80	rate only	
j	- Floor Squeegees														incl 8.2.02	
k	- Bunding Materials (from Handyman material allowance)															
9.0	Boardings															
9.01	Boarding Design										Item	1		1,362.75	1,362.75	
9.02	Boarding Installation										L/m	120		143.75	17,250.00	
a	- 2.4m high ply boarding to scaffold (see fold by others)										nr	1	nr	2,357.50	2,357.50	
b	- Supply & Hang 2.4m high 5.0m wide vehicle gate on concrete blocks (ply fixed)										nr	1	nr	684.25	684.25	
c	- Pedestrian door c/w secure digital lock										L/m	120		21.14	2,608.80	
d	- Decoration: 2 coats, front fix only, no filling of screw holes (measured over doors & gates)															
9.03	Boarding Maintenance										L/m			23.76	rate only	
a	- Full/Major Redecoration															
9.04	Boarding Removal										L/m	120		19.99	2,398.80	
a	- dismantle and clear all or part of boardings previously installed by DGP															
10.0	Temporary Installations															
	TO BE PRICED AS REQUIRED															
11.0	Temporary Accommodation - Minimum 4 weeks Hire - Location of cabins TBC by Fleetwood															
11.01	Fire Rated Cabins										weeks	33		119.60	3,946.80	
	32ft x 10ft anti vandal jacking office meeting room split - 1nr										weeks	33		120.75	3,984.75	
11.03	32ft x 10ft anti vandal jacking canteen - 1nr										weeks	33		101.20	3,339.60	
11.04	24ft x 9ft anti vandal jacking male changing room - 1nr										weeks	33		101.20	3,339.60	
11.05	24ft x 9ft anti vandal jacking female changing room - 1nr										weeks	33		139.15	4,591.95	
	24ft x 9ft anti vandal jacking 3+1 toilet with shower - 1nr										weeks	33		23.00	759.00	
11.06	Single landing staircase - 2nr										nr	2		546.25	1,092.50	
11.07	Single Loads										nr	4		448.50	1,794.00	
11.08	Staircase Installations										nr	2		195.50	391.00	
11.09	Site Specific Lifting Plan (If Required)										nr	1		517.50	517.50	
11.10	Cabin Removal - Budget cost is subject to when cabins are off hired.										nr	1		4,174.50	4,174.50	
	Furniture															
11.11	1200mm 2 drawer single pedestal desk										nr	3		90.85	272.55	
11.12	Office swivel chair										nr	3		114.94	344.82	
11.13	Meeting Room Table										nr	1		286.35	286.35	
11.14	Meeting Room Chairs										nr	8		33.93	271.44	
11.15	Canteen tables										nr	4		60.38	241.52	
11.16	Canteen chairs										nr	24		14.38	345.12	
11.17	1200 cloakroom units c/w fittings										nr	5		189.75	948.75	
11.18	Three door wire mesh lockers - nest of 2										nr	3		217.35	652.05	
11.19	Grey filling cabinet 1829h x 914w c/w 3 shelves										nr	2		148.35	296.70	
11.20	Microwave										nr	1		74.75	74.75	
11.21	Undercounter fridge										nr	1		228.85	228.85	
11.22	Supply and install automatic water boiler 11ltr										nr	1		1,759.48	1,759.48	
11.23	Delivery cost subject to quantity been ordered										nr	1		212.75	212.75	
	Temporary Connections - Subject to a site visit															
	Electrical - Cables laid direct in ducts (ducts installed by others) or clipped to surface, mains intake switchgear has spare capacity for temporary supply.															
11.24	Allowance of 1nr 63A TPN submain from building or site MDU (allowance 25m)										nr	1		994.75	994.75	
11.25	1nr Site distribution box										nr	1		752.10	752.10	
11.26	- 40A SPM submain (25m)										Item	1		431.14	431.14	
11.27	- 63A SPM submain (25m)										Item	1		439.70	439.70	
	Plumbing & Drainage - Adequate pressure at CMS mains for temporary site set up of 1.5bar, foul drainage trench by others or discharge top entry into nearest manhole.															
11.28	25m Water main allowance from nearest cold water supply										nr	1		730.25	730.25	
11.29	Connection to 2nr mobile units										Item	1		264.50	264.50	
11.30	Waste connections to 2nr cabinets										nr	1		345.00	345.00	

Appendix B – Question-and-Answer Document

- Query Sheet no. 1 - VFM Q&A



Question-and-Answer Document

Query Sheet No. 01

Date: 24/4/2023

No.	QUERIES	FLEETWOOD RESPONSE on 28/4/2023
1	Validity of quotation for 30 days is a bit tight for consideration. As the process of processing the Building Safety Fund application may take longer than 30 days, would you increase the quotation validity period.	We can offer 90 days validity of quotation.
2	In your quotation, you took references to the following Specifications but not attached to. For our information, please provide :- (1) 20644_PCSA_Spectrum_Building_Dagenham_cladding_remedial_works; (2) 23004-GAA-XX-XX-RP-A-0001	Please see attached.
3	Several references states Fleetwood as a sub-contractor. You will be required to be the Main Contractor on the project and fulfill the Main Contractor's duties. Please confirm your acceptance of this.	Amended in revA quotation.
4	In your quotation, you provided a Summary and a Preliminaries breakdown. However, the amount for "Façade Prelims" shown £326,749.97 on the Summary which did not tally with the Total of £254,002.60 stated in the Preliminaries breakdown. Please clarify and provide a Preliminaries Breakdown matching the correct amount.	Clerical error . Higher value included for forklift that has been moved to Logistic.
5	Please provide cost breakdown for scaffold amounting £961,186. It seems on the high side. What does it cover? Could you explain in more detail?	Please see attached. Please not the value is 961,168.
6	We assume any scaffolding license (if required) is included. Please confirm.	As scaffolds are not based on public pavements or roadways we do not envision license requirements.
7	Does the allowance for scaffolding cover for making good of scaffolding ties? Please confirm or amend your quotation to include for this.	Yes, allowance has been made.
8	Does the scaffolding allowance cover for the debris netting, bridge over entrance, front entrance canopy, etc. as per scaffolding design attached in the tender package? Please confirm or amend your quotation to include for this.	Yes included for.
9	Please provide cost breakdown for logistics amounting £532,037.48. Please confirm Project insurance are included.	Please see attached.



Question-and-Answer Document

Query Sheet No. 01

Date: 24/4/2023

No.	QUERIES	FLEETWOOD RESPONSE on 28/4/2023
10	In your quotation, allowance for site measurements of structural openings is not included. The openings are existing and you will be required to survey and measure the opening sizes prior to manufacture. Please confirm whether this is included or what the additional costs will be.	We will do spot checks on existing openings prior to manufacture.
11	Refer to Page 3 of your quotation, it states "...includes for one site visit prior to commencement to carry out a visual check of site openings only, prior to fixing. We will require the contractor to supply safe access to any part of the building or ground-works necessary for our survey prior to the arrival on site". You will be required to be the Main Contractor on the project and fulfill the Main Contractor's duties, please amend your quotation to include for the necessary safe access for the survey mentioned.	Amended in revA quotation.
12	Refer to Page 4 of your quotation, the payment for design refers to a 5% of the gross sub-contract will be applied for upon achieving states "B". The Contract is Design and Build, where you will be the Main Contractor. Please amend your quotation to include for all design required.	Amended in revA quotation.
13	The Summary shows a sum of £73,500 for Design Fees. Please confirm that cost for the Architect (GAA) is included in this sum. Also we assume this is the nominated Architect. Please confirm.	Confirmed, this is for GAA design fees.
14	The Summary shows a sum of £65,700 for Fire Engineer. This looks excessive. We would expect something in the region of £10,000 to £15,000. Please let us know your thoughts on this.	Revised cost for EWS1 and External wall design and monitoring is £47700.
15	Does your quotation include an allowance for sample panels for each cladding type? Please confirm or amend your quotation to include for this.	Included for desktop sample 300mmx300mm.
16	Does the Preliminaries include for liaison with all nominated or specified suppliers, subcontractors, local Authority and Statutory undertakers? Please confirm or amend your quotation to include for this.	Amended in revA quotation. Please see Prelims.
17	Does the quotation include for welfare facilities for staff as toilet and canteen? Please confirm or amend your quotation to include for this.	Yes included for.



Question-and-Answer Document

Query Sheet No. 01

Date: 24/4/2023

No.	QUERIES	FLEETWOOD RESPONSE on 28/4/2023
18	Does the quotation include for labourer, general attendance, weekly clean down, etc? Please clarify or amend your quotation to include for this.	Please see logistic breakdown.
19	Does the quotation include for the Operational Manual and As Built drawings? Please confirm or amend your quotation to include for this.	Yes included for.
20	Does the quotation include for lockable material and/or tool storage for the duration of the works ? Please confirm or amend your quotation to include for this.	Yes included for.
21	Does the quotation include for both installation and usage costs for site services as gas, electric and water for the duration of the works ? Please confirm or amend your quotation to include for this.	Amended in revA quotation. Please see Prelims.
22	Does the quotation include for external areas to be cleaned upon completion, free from debris and surface material in good working order to the contractor administrators satisfaction? Please confirm or amend your quotation to include for this.	Yes included for.
23	Does the quotation include for full protection of site and all temporary protections to the structure at the end of each working day in the event that the external fabric and internal linings are left open to the windows. Please confirm or amend your quotation to include for this.	Yes included for.
24	Does the quotation include for all necessary protections to hard and soft landscaped areas for the duration of the works and upon completion, for removal and disposal of all protections? Please confirm or amend your quotation to include for this.	Yes included for.
25	Does the tender allow for the replacement of all gaskets / mastic sealant required as not clearly listed in the breakdown? Please confirm or amend your quotation to include for this.	Only to affected spandrel panel areas.
26	Regarding the Overheads and Profit percentage of 6.5% amounting £288,289.62, please provide your calculation.	We take 6.5% from our subtotal.
27	Refer to Page 6 of your quotation, you mentioned dayworks rates are net cost of materials/plants + 30% which is on the high side. Please review.	Further discussion required. Please note this only apply to FAA façade works and prelims.

Spectrum House
22-42 Freshwater Road
Dagenham RM8 1EH



Value for Money Report

Question-and-Answer Document

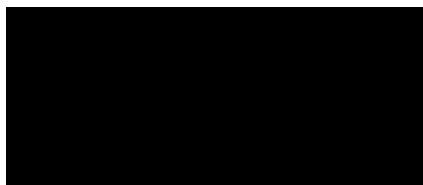
Query Sheet No. 01

Date: 24/4/2023

No.	QUERIES	FLEETWOOD RESPONSE on 28/4/2023
28	Refer to Page 6 of your quotation, you mentioned variations are subject to 24% Overhead and Project which is on the high compare to the 6.5% Overhead and Profit in the Summary. Please clarify and review.	Further discussion required. Please note this only apply to FAA façade works and prelims.
29	Please confirm that your offer is based on the JCT Design and Build Contract, 2016 Edition. As this is a Design and Build Contract, please confirm you have covered for all your risks.	Yes our offer is based on JCT D&B contract, 2016 Edition.
30	Please confirm there are no clarifications, qualifications, or exclusions other than those included in the tender submitted and in this Questions and Answers document.	Confirmed.



Navigation



Navigation Management Ltd
Navigation House,
1 KD Plaza, Hemel Hempstead, Hertfordshire HP1 1AX

From:

Sent:

To:

28 April 2023 16:47

Subject:

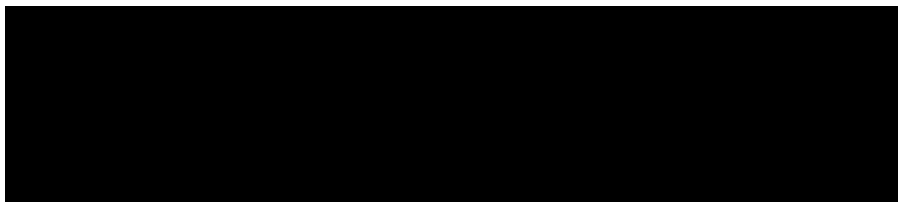
Attachments:

SPECTRUM BUILDING CONTROL ISSUE 28.04.23 - FOR REVIEW AND COMMENT
23004-GAA-A1-ZZ-DR-A-2101.pdf; 23004-GAA-XX-XX-DR-A-2801.pdf; 23004-GAA-XX-XX-DR-A-2802.pdf; 23004-GAA-XX-XX-DR-A-2803.pdf; 23004-GAA-XX-XX-DR-A-2901.pdf; 23004-GAA-XX-XX-DR-A-2902.pdf; 23004-GAA-XX-XX-DR-A-2903.pdf; 23004-GAA-XX-XX-DR-A-2904.pdf; 23004-GAA-XX-XX-DR-A-2905.pdf; 23004-GAA-XX-XX-DR-A-2906.pdf; 23004-GAA-XX-XX-DR-A-2907.pdf; 23004-GAA-A1-XX-SP-A-0001.pdf; 23004-GAA-A1-ZZ-DR-A-2101.pdf; 23004-GAA-A1-ZZ-DR-A-0402.pdf; 23004-GAA-A1-05-DR-A-0401.pdf; 23004-GAA-A1-ZZ-DR-A-2001.pdf; 23004-GAA-A1-ZZ-RP-A-0002.pdf


Attached files exported from Cabinet Explorer as Attached Files on 28 April 2023 @ 15:31:13

Name	Version	Intent	Description	Stage	Edited Date
23004-GAA-A1-ZZ-DR-A-2101.dwg	P01	21-Elevations	Elevations	S3 - For Review and Comment	28/04/2023 14:46:04
23004-GAA-XX-XX-DR-A-2801.dwg	P01	28-Horizontal Plan Details	Plan Details	S3 - For Review and Comment	28/04/2023 14:46:11
23004-GAA-XX-XX-DR-A-2802.dwg	P01	28-Horizontal Plan Details	Plan Details	S3 - For Review and Comment	28/04/2023 14:46:20
23004-GAA-XX-XX-DR-A-2803.dwg	P01	28-Horizontal Plan Details	Plan Details	S3 - For Review and Comment	28/04/2023 14:46:27
23004-GAA-XX-XX-DR-A-2901.dwg	P01	29-Vertical Junction Details	Vertical Sections Details	S3 - For Review and Comment	28/04/2023 14:46:39
23004-GAA-XX-XX-DR-A-2902.dwg	P01	29-Vertical Junction Details	Section A-A Details	S3 - For Review and Comment	28/04/2023 14:46:46
23004-GAA-XX-XX-DR-A-2903.dwg	P01	29-Vertical Junction Details	Section A-A Details	S3 - For Review and Comment	28/04/2023 14:46:54
23004-GAA-XX-XX-DR-A-2904.dwg	P01	29-Vertical Junction Details	Section A-A Details	S3 - For Review and Comment	28/04/2023 14:47:01
23004-GAA-XX-XX-DR-A-2905.dwg	P01	29-Vertical Junction Details	Section A-A Details	S3 - For Review and Comment	28/04/2023 14:47:08
23004-GAA-XX-XX-DR-A-2906.dwg	P01	29-Vertical Junction Details	Section A-A Details	S3 - For Review and Comment	28/04/2023 14:47:15
23004-GAA-XX-XX-DR-A-2907.dwg	P01	29-Vertical Junction Details	Section A-A Details	S3 - For Review and Comment	28/04/2023 14:47:22
23004-GAA-A1-XX-SP-A-0001.docx	P01	Specification	Outline Scope of Works	S3 - For Review and Comment	28/04/2023 16:17:14

23004-GAA-A1-ZZ-DR-A-0402.dwg	P01	04-Fire Strategy Details	Fire Strategy Elevations	S3 - For Review and Comment	28/04/2023 16:24:31
23004-GAA-A1-05-DR-A-0401.dwg	P01	04-Fire Strategy Details	Fire Strategy Plan	S3 - For Review and Comment	28/04/2023 16:24:19
23004-GAA-A1-ZZ-DR-A-2001.dwg	P01	20-GA Plans	Fifth & Sixth floor plans	S3 - For Review and Comment	28/04/2023 16:23:44
23004-GAA-A1-ZZ-DR-A-0002.docx	P01	DRS	Design Release Schedule	S3 – For Review and Comment	28/04/2023 16:24:23



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GA & A Design Ltd is a company registered in England and Wales under number 06912910.

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Outline Specification Wall Build-Up

Spectrum Building, 22-42 Freshwater Road, Dagenham, RM8 1EH



Project Reference	23004
Document Number	23004-GAA-XX-XX-SW-A-0001
Suitability	S4 - For Stage Approval
Revision Number	P01
Date	26/04/2023
Written By	
Checked By	
Reviewed By	
Approved By	

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	Proposed Spandrel	
	Fire Barriers Open state fire barrier , Close state fire barrier	
	Breathable membrane	
	Sheathing board	
	EPDM membrane system	
	Accessories	

Revision	Description	Date Issued	Originator
P01	First Issue	26/04/2023	■

Outline Scope of works

A. Existing site

The existing site comprises a 6-storey mix-use building with commercial use on the Ground Floor and 60 residential units from first to sixth floors. The fifth and sixth floors comprise timber frames and studs with external rainscreen cladding.

The windows building wide have spandrel panels in varying configurations.

Each balcony is separated by privacy screens.

B. Proposed works

An intrusive survey has been undertaken on the existing external wall.

It has been found that the external wall contains items that do not meet the requirements of the Building Safety Fund (BSF). Considering this, an application is being made for cladding remediation scheme to replace the external facades with a non-combustible system, and the replacement of the balcony privacy screens.

C. Scope and limitation of this document

This document is limited to provide an outline build up that will would satisfy the fire engineers requirements following the Intrusive Survey and analysis of the existing conditions.

The works are limited to:

On the 5th and 6th floors the removal and replacement of

1. cladding panels and timber battens
2. Waterproofing membrane
3. Breathable membrane
4. OSB backing board
5. Fire barriers

and to all floors

6. Window spandrel panels
7. Balcony privacy screens.

Outline Scope of works

1 Current build-up of the wall

An intrusive survey was carried out on the 09/03/2023 by FAA.

From the intrusive survey, the build-up of the existing façades is:

External wall (from external layer to timber frame)

TRESPA 8mm exterior high pressure laminate cladding panels on timber battens

Waterproofing membrane

40mm drainage cavity

Breathable membrane

10mm OSB backing board

Window spandrel panels

30mm polystyrene insulation faced internally with 1mm PVC sheet and externally with 5mm fibre board.

Externally beaded PVC window frame

External balcony privacy screens

8mm exterior high pressure laminate cladding panels in metal framework

Outline Scope of works

2. Proposed Wall Build-Up

Following the review of the existing build up for the cladding system, the following outline build up is proposed at this stage:

External wall (from external cladding face to existing insulation)

Valcan complete A1 fire rated non-combustible drained and back-ventilated rainscreen cladding system for external cladding using VALCAN “Ceramapanel” and Vitrafix helping hand system.

- 12 mm Ceramapanel through-coloured compressed fibre-cement facade panel
- EPDM membrane between panel and carrier to manufacturer's specification
- Vitrafix VF1 cladding support system
- 25mm ventilation cavity
- 90mm thermally compliant mechanically fixed insulation board
- Breather membrane
- 9mm calcium silicate cement building board

Window Spandrel Panels

- 35mm thick Metalline Architectural Fabrications ULTIMA ULT 1 A1 spandrel panels
- 3mm External aluminium facing (J57S UP)
- 30mm thick Rockwool FABROCK non-combustible core insulation
- 2mm internal aluminium facing (J57S)

External balcony Privacy Screens

Valcan 12mm A1 fire rated Ceramapanel non-combustible external privacy screen set into existing metal frame with fixings beadings and sealant.

Fire Barriers (to Fire Engineer’s approval)

Horizontal Firebreaks at slab level:

- Intumescent strip Tenmat FF102/50

Vertical Firebreaks:

- Tenmat NVFB

Horizontal Firebreaks at openings:

- Tenmat NVFB

Outline Scope of works

3. U-Value Calculations

Existing Wall data sheets

Existing Window Spandrel data sheets

Proposed Wall data sheets

Proposed Window Spandrel data sheets

TO BE PROVIDED BY ENERGY CONSULTANT

Outline Scope of works

4. Conclusion

The build-up proposed in this document is to be approved by Fire Engineer consultant and Building Control inspector. It should be noted that the build-up is proposed based on the current information known at the time of writing this report.

This build up is subject to change once construction works commence and relevant inspections by Fire Engineer commence in relation to the EWS1 form as well as any discussions with leaseholders.

Any further changes will need to be signed off by all parties prior to any construction proceeding.

5. Data Sheets For Products

Wall Build-Up – Valcan & Vitrafix

System overview

This is a complete system specification for Valcan's Ceramapanel and Vitrafix, plus fixings to the wall from Certifix (in partnership with Valcan). This provides a comprehensive warranty on the complete system. All Certifix provided products are tested and certified in accordance with ADB v2 for high rise buildings. All batch numbers will be recorded, regular site visits to be made by Valcan and Certifix during the installation, frequency to be decided at order stage with client.

Ceramapanel overview:

A through coloured, compressed fibre cement facade panel available in 8 mm, 10 mm or 12 mm thicknesses, in A1 rating as required. It is both an aesthetically appealing and cost-effective cladding solution offering a natural appearance. It also has good acoustic dampening properties.

Features and benefits:

- Achieves A1 (non-combustible)
- Cost effective.
- Impact resistant.
- Proven performance in harsh environments.
- Short lead times and fast installation timeframes.
- Panels supplied pre-squared.
- Long lasting.
- Low maintenance.
- Can be finished off-site for easy and efficient installation.
- High strength and environmental durability.
- Through coloured.
- Sound dampening benefits.
- Graffiti resistant when coated with acrylic treatment (Natural+ range).
- Wide range of colours and finishes available.
- Fifteen-year warranty.

Application:

Particularly suited to both internal and external modern commercial, residential and industrial buildings, where a natural facade is needed.

4.8mm diameter Vitrafix colour matched, large flange Vitrafix Rivets fixed to Vitrafix VF1 system. Fixings should be spaced 45–65 mm from edge measured with the fibres and 25–50 mm from edge measured across the fibres. When using Vitrafix Rivets, ensure that a VFNPR/16/F Vitrafix Rivet Nosepiece adapter is also used to prevent over-tightening of the Vitrafix Rivets. Once both fixed points are installed, work over the panel for the sliding centres – consult manufacturers drawings for further details

Ceramapanel Technical Characteristics:


- Density: 1600 kg/m³ (±50).

- Modulus of elasticity (dry): Longitudinal: 14 GPa; transversal: 12 GPa.
- Modulus of elasticity (wet): Longitudinal: 11 GPa; transversal: 9 GPa.
- Bending strength (wet, untreated): ≥ 18 MPa.
- Bending strength (wet, hydrophobic treated sheet, acrylic coated): ≥ 24 MPa.
- Bending strength (dry): Longitudinal: 32 MPa; transversal: 22 MPa.
- Compressive strength: 40 MPa.
- Maximum water absorption (untreated): $25 \pm 2\%$.
- Maximum water absorption (hydrophobic treated sheet): $9 \pm 3\%$.
- Maximum water absorption (acrylic coated sheet, acrylic coated): $3 \pm 2\%$.
- Vapour resistance factor (to EN 12572: 2016): 320 μ .
- Thermal conductivity (to EN 12664: 2002): 0.42 W/m·K.
- Durability classification (to EN 12467: 2016): Category A.
- Strength classification (to EN 12467: 2016, untreated sheets): Class 4.
- Strength classification (to EN 12467: 2016, treated sheets): Class 5.

Durability:

The cement panel is highly durable and includes immunity to permanent water damage in both short and long-term exposure. It will not rot, burn or corrode and is unaffected by termites, air, steam, salt and sunlight. It is not adversely affected over a temperature range of -20 to +60°C.

Contacts:

- www.valcan.co.uk
- enquiries@valcan.co.uk
- 

Vitrafix systems

Aluminium carrier system brackets, profiles and fixings which have been tested to BS 8414-1 and BS 8414-2 and are Centre for Window and Cladding Technology (CWCT) tested. Designed to offer a cost effective yet strong carrier system, and is suitable for all building types.

Vitrafix VF1

VF1 system has adjustability of 102–235 mm and can be further extended by combining the Vitrafix VF2/TH system to give an additional depth - consult manufacturer for further details. Custom depth brackets are also available

Vitrafix VF2

VF2 system comprises of aluminium or steel top-hats and C-channel rails to allow brackets to be installed in isolation of stud location or increase system depth. The VF2 top-hats can also be used in the own right to replace timber batten style sub grids.

Features and benefits:

- Lightweight.
- Durable.
- Tested to BS 8414.

- Tested to Centre for Window and Cladding Technology (CWCT).
- System warranty available - contact manufacturer's technical team for information.

Application:

For panel systems using VF1 fixings for [PROJECT NAME]

SYSTEM SPECIFICATION

Façade Panel

- **Product reference:** Ceramapanel through coloured fibre cement panel
 - o **Thickness/weight:**
 - [8 mm] - 14.4 kg/m².
 - [10 mm] - 18 kg/m².
 - [12 mm] - 21.6 kg/m².
 - o **Panel size (l x w):**
 - [2500 x 1250 mm]
 - [3050 x 1250 mm]
- **Fire rating (to BS EN 13501-1):** A1
- **Finish:** [Natural Contour Lines, Touch] - Lines are spaced further apart to give the appearance of planks, ribboned effect finish.
- **Colour:** [Natural] – Colour tbc
- **Material:** Fibre cement.
- **Fixing:** VFR4.820C Vitrafix 4.8x20mm Rivet A4/A4 (5-13mm)
 - o Fixings should be spaced 45–65 mm from edge measured with the fibres and 25–50 mm from edge measured across the fibres.

Carrier system

Product reference: Vitrafix VF1

- o Material: Aluminium
- o Manufacturer:
 - Valcan
 - www.valcan.co.uk
 - enquiries@valcan.co.uk
 - [REDACTED]

Brackets:

- [VF100DB] - 100 mm double bracket (no pad), 102–132 mm adjustment.
- [VF100SB] - 100 mm single bracket (no pad), 102–132 mm adjustment.
- [VF140DB] - 140 mm double bracket (no pad), 142–172 mm adjustment.
- [VF140SB] - 140 mm single bracket (no pad), 142–172 mm adjustment.
- [VF180DB] - 180 mm double bracket (no pad), 182–212 mm adjustment.
- [VF180SB] - 180 mm single bracket (no pad), 182–212 mm adjustment.
- [VF200DB] - 200 mm double bracket (no pad), 202–232 mm adjustment.
- [VF200SB] - 200 mm single bracket (no pad), 202–232 mm adjustment.

Rails:

- [VFTR503] - T Rail, 50 x 100 x 3000 mm.
- [VFTR506] - T Rail, 50 x 100 x 6000 mm.
- [VFLR503] - L Rail, 50 x 50 x 3000 mm.
- [VFLR506] - L Rail, 50 x 50 x 6000 mm.

Horizontal rails: Vitrafix VF2

- [not required for masonry wall]
- VF2/U attached to SFS locations allowing brackets to be installed in isolation to stud location
 - VF2/U 90x15x2mm, 3m Rail (aluminium)
 - VF2/U 174x15x2mm, 3mm Rail (aluminium)
- Fixing to stud - VFSD.538/A4 – VitraFix Self-Drill, A4 Grade 5.5x38mm, 8mm Hex Head w/washer – see manufacturers details for fixing centres

Fixings:

- VFSD4.825/A4 - Vitrafix self Drill, 4.8x25mm, A4 Grade, 8mm Hex Head
- VFSD.538/A4 – VitraFix Self-Drill, A4 Grade 5.5x38mm, 8mm Hex Head w/washer
- Masonry anchors by Certifix Ltd - ETA approved fire rated fixing

Accessories:

- [VFIPDB] - Double bracket thermal pad, adds 3 mm adjustment.
- [VFIPSB] - Single bracket thermal pad, adds 3 mm adjustment.
- [VFRT55/1.0] - Vitrafix EPDM Self Adhesive Rail Tape – 55mm x 1mm x 20m
- [VFRT105/1.0] - Vitrafix EPDM Self Adhesive Rail Tape – 105mm x 1mm x 20m
- VFCT954.9 Vitrafix Centralising Tool for 4.8mm rivets
- VFNPR/16 - Vitrafix Nose Piece Adapter for 4.8x20mm rivets

Panel Joints:

- [8 - 10 mm open joints]
- [closed joints]
 - **Product reference:**
 - CFBB/65 - Certifix Birdsbeak joint closure profile, 65mm width, 0.8mm thickness
 - Vitrafix EPDM Self Adhesive Rail Tape, (1mm thick) must be used when using birdsbeak closure profiles
 - CFVM – Certifix Vermin closure profile – depth to suit project cavity
 - **Manufacturer:**

Certifix Contacts:

www.certifix.co.uk

Sales@certifix.co.uk

Cavity depth:

- [50 mm open joint installation] - measured from face of insulation to rear of panel, can be reduced by 50% at fire barrier locations or other “pinch” points
- [25 mm closed joint installation] - measured from face of insulation to rear of panel, can be reduced by 50% at fire barrier locations or other “pinch” points
- [other] - consult CWCT section 3.4.4.4

Window Flashing:

- **Product reference:**
 - 25mm wide window flashing profile
- **Manufacturer:**
 - **Certifix Contacts:**
 - www.certifix.co.uk
 - Sales@certifix.co.uk

Sheathing board

- **Product reference:**
 - ProcellaPro
- **Thickness/weight:**

- [12 mm] - 21.6 kg/m².
- **Panel size (l x w):**
 - [2500 x 1250 mm]
- **Fire Rating to BS EN 13501-1:** A1
- **Manufacturer:**
 - Valcan
 - www.valcan.co.uk
 - enquiries@valcan.co.uk
 - [REDACTED]
- **Fixings:** [VFSDPP4.838/WT] - Vitrafix Self Drill ProcellaPro WT fixing, 4.8x38mm with Countersunk Head – Consult manufacturers details for fixing layouts

Fire Barriers

- **Product reference:**
 - Certifix VRFB+ Open state horizontal barrier
 - Certifix NVRFB Non-ventilated Vertical barrier
- **Fire performance:**
 - Insulation:
 - Integrity:
- **Manufacturer:**
 - **Certifix Contacts:**
 - www.certifix.co.uk
 - Sales@certifix.co.uk
 - [REDACTED]
- **Fixings:** Fire tested fixings to be advised by Certifix Ltd to equivalent performance of fire barrier, fixing reference dictated by substrate

Breather Membrane

- **Product reference:** CFA1BM – Certifix A1 Breather Membrane.
- **Fire performance (BS EN 13501-1):** A1
- **Manufacturer:**
 - **Certifix Contacts:**
 - www.certifix.co.uk
 - Sales@certifix.co.uk
 - T: [REDACTED]

Insulation

- **Product reference:** Certifix Mineral Wool Rainscreen Slab
- **Product thickness:** tbc
- **Thermal Performance:** 0.034 w/mK
- **Fire rating (BS EN 13501-1):** A1
- **Distributor:**
 - **Certifix Contacts:**
 - www.certifix.co.uk
 - Sales@certifix.co.uk
 - T: [REDACTED]
- **Fixings:** CIA/FR - Certifix Fire rated insulation fixings

Masonry fixings

- **Product reference:** Fire Rated, ETA approved fixing, Certifix Ltd to carry out pull out test on site to determine correct fixing
- **Manufacturer:**
 - **Certifix Contacts:**
 - www.certifix.co.uk



Title:

CLASSIFICATION OF
REACTION TO FIRE
PERFORMANCE
IN ACCORDANCE WITH
EN 13501-1:2007+A1: 2009

Notified Body No:

0833

Product Name:

"Ceramapanel A1"

Report No:

WF 410112

Issue No:

1

Prepared for:

Valcan Ltd
Unit 7 Robins Drive
Castefields Industrial Estate
Bridgwater
United Kingdom
TA6 4DL

Date:

4th March 2019



1. Introduction

This classification report defines the classification assigned to “Ceramapanel A1”, a natural fibre-cement flat sheet coated with paint or with added pigment, in line with the procedures given in EN 13501-1:2007+A1: 2009.

2. Details of classified product

2.1 General

The product, “Ceramapanel A1”, a natural fibre-cement flat sheet coated with paint or with added pigment, is defined as being suitable for construction applications.

2.2 Product description

The product, “Ceramapanel A1”, is fully described below and in the test reports provided in support of classification listed in Clause 3.1.

General description		Double Pressed and Autoclaved Fibre Cement Flat Board
Product reference of overall composite		“Ceramapanel A1”
Name of manufacturer of overall composite		Valcan Ltd
Thickness of overall composite		8mm / 10mm / 12mm
Weight per unit area of overall composite		Kg/m ² = 14.4 / 18 / 21.6
Coating Option 1 - Ceramapanel Natural Raw+	Generic type	Acrylic Anti-Graffiti coating
	Product reference	See Note 1
	Name of manufacturer	See Note 1
	Colour reference	Clear coating
	Number of coats	1
	Application rate / thickness per coat	40-60g/m ²
	Density / specific gravity	See Note 2
	Application method	By Roller
	Curing process per coat	IR Heated + UV Cured
	Trade name of flame retardant	N/A
	Generic type of flame retardant	N/A
	Amount of flame retardant	N/A
Coating Option 2- Ceramapanel Painted	Generic type	Acrylic Paint + Acrylic Anti-Graffiti coating
	Product reference	See Note 1
	Name of manufacturer	See Note 1
	Colour reference	As required
	Number of coats	2
	Application rate / thickness per coat	Acrylic Paint 30-40g/m ² Acrylic Anti-Graffiti coating 10-20g/m ²
	Density / specific gravity	See Note 2
	Application method	By Roller

Continued on next page...

	Curing process per coat	IR Heated + UV Cured
	Trade name of flame retardant	N/A
	Generic type of flame retardant	N/A
	Amount of flame retardant	N/A
Coating Option 3 - Ceramapanel Natural Raw	Generic type	Hydrophobic coating
	Product reference	See Note 1
	Name of manufacturer	See Note 1
	Colour reference	Clear coating
	Number of coats	1
	Application rate / thickness per coat	40-60g/m ²
	Density / specific gravity	See Note 2
	Application method	Flow coating
	Curing process per coat	Drying Process by Ovens
	Trade name of flame retardant	N/A
	Generic type of flame retardant	N/A
	Amount of flame retardant	N/A
Fibre cement board	Generic type	Fibre Cement board
	Product reference	Ceramapanel
	Detailed description / composition details	Asbestos free, double pressed and autoclaved through coloured flat boards, reinforced with mineralized cellulose and glass fibres
	Name of manufacturer	See Note 3
	Thickness	8mm / 10mm / 12mm
	Density / weight per unit area	14.4 / 18 / 21.6 kg/m ²
	Colour reference	Through coloured
	Trade name of flame retardant	N/A
	Generic type of flame retardant	N/A
	Amount of flame retardant	N/A
Mounting and fixing details		Screwed on metal frame, with 40mm air gap from Gypsum plasterboard substrate

Note 1: The sponsor was unwilling to provide this information.

Note 2: The sponsor was unable to provide this information.

Note 3: The sponsor of the test has provided this information but at the specific request of the sponsor, these details have been omitted from the report and are instead held on the confidential file relating to this investigation.

3. Test reports & test results in support of classification.

3.1 Test reports.

Name of Laboratory	Name of sponsor	Test reports Nos.	Test method
Istituto Giordano S.p.A	Valcan Ltd	350434/11332/CPR	BS EN 13823
Istituto Giordano S.p.A	Valcan Ltd	347132/11043/CPR 347133/11044/CPR	EN ISO 1716
LAPI	Valcan Ltd	660.1DC0011/14	EN ISO 1716
Warringtonfire	Valcan Ltd	WF 410891	EN ISO 1716 - Summary Report
LAPI	Valcan Ltd	660.0IS0010/14	EN ISO 1182
LAPI	Valcan Ltd	660.0DC0050/14	EN 13501-1
Istituto Giordano S.p.A	Valcan Ltd	350435/11333/CPR	EN 13501-1

3.2 Test results

Test method & test number	Parameter	No. tests	Results	
			Continuous parameter - mean (m)	Compliance parameters
BS EN ISO 1182 (fibre cement board)	Furnace thermocouple temperature rise (°C)	5	4.74 °C	Compliant
	Duration of sustained flaming (seconds)		None	Compliant
	Mass Loss (%)		11.5 %	Compliant
EN ISO 1716	Acrylic Paint+Acrylic Anti-Graffiti coating - PCS (b) – External non-substantial component	3	1.6 MJ/m ²	Compliant
	Hydrophobic Coating - PCS (b) – External non-substantial component		2.0 MJ/m ²	Compliant
	Fibre cement board – PCS (a) – Substantial component		1.12 MJ/kg	Compliant
	For the product as a whole – PCS (e)	N/A	1.3 MJ/kg (Hydrophobic Coating)	Compliant
			1.2 MJ/kg* (Acrylic Paint+Acrylic Anti-Graffiti coating)	
Note 1: The product did not pass the requirements for PCS (b), however, the product is deemed to be compliant if in accordance with Table 1, Note C of EN 13501-1, any external non-substantial component having a PCS (c) ≤ 2.0 MJ/m ² , provided that the product satisfies the following criteria of EN 13823: FIGRA ≤20 W/s & LFS <edge of specimen & THR≤ 4.0MJ & S1 & d0				
BS EN 13823 (fibre cement board w/hydrophobic coating)	FIGRA _{0.2MJ}	3	0.0 W/s	Compliant
	FIGRA _{0.4MJ}		0.0 W/S	Compliant
	THR _{600s}		0.4 MJ	Compliant
	SMOGRA		0.0 m ² s ²	Compliant
	TSP _{600s}		20 m ²	Compliant
	Lateral Flame Spread to End of Specimen?		None	Compliant
	Fall of Flaming Drop/Particle?		None	Compliant
	Flaming of Fallen Particle Exceeding 10s?		None	Compliant

**A decision was made by Istituto Giordano and subsequently agreed with by Warrington fire that the 'Ceramapanel Natural Raw+' transparent acrylic paint possesses a lower PCS (MJ/m²) value to the 'Ceramapanel Painted' coating due the latter being an identical product with the addition of coloured pigments.*

4. Classification and field of application

4.1 Reference of classification

This classification has been carried out in accordance with clause 8 and 9 of EN 13501-1:2007+A1: 2009.

4.2 Classification

The product, "Ceramapanel A1", a natural fibre-cement flat sheet coated with paint or with added pigment, in relation to its reaction to fire behaviour is classified:

Reaction to fire classification: A1/A1_{FL}

4.3 Field of application

This classification is valid for the following end use applications:

- i) Construction applications – Floorings, ceiling elements or non-structural walls
- ii) Construction applications applied over any substrate with a minimum density of 700kg/m³, having a minimum thickness of 12.5mm and a fire performance of A2-s1,d0 or better
- iii) Construction applications - Free standing

This classification is also valid for the following product parameters:

Coating type	Coating option 1 OR 2 OR 3 OR no coating allowed
Coating application rate	No variation allowed
Fibre cement board thickness	≥8mm allowed
Fibre cement board density	No variation allowed
Product composition	No variation allowed
Product construction	No variation allowed
Junction	Joint opening width ≤ 8mm
Air gap details	≥ 40mm allowed

5. Limitations

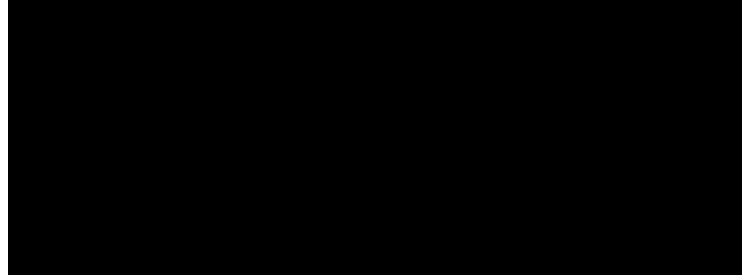
This document does not represent type approval or certification of the product.

SIGNED



Technical Department

APPROVED



Technical Department
On behalf of Warringtonfire

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Title:

CLASSIFICATION OF
REACTION TO FIRE
PERFORMANCE

IN ACCORDANCE WITH
EN 13501-1

Notified Body No:

0833

Product Name:

"ULTIMA A1"

Report No:

WF 434690

Issue No:

1

Prepared for:

Metalline Services Ltd, Hollies Park
Road, Cannock,
Staffordshire,
WS11 1DB

Date:

15th December 2020

In September 2020, the Society of Façade Engineering (SFE) and the Centre for Window and Cladding Technology (CWCT) released further guidance with regards to the existing 2018 Building Regulations. Many queries were raised in relation to the materials used to construct external walls as well as façades since the ban on the use of combustible materials was introduced in November 2018.

Section 6.2 of this document refers directly to “spandrel/infill panels”.

Section 6.2.1 states:

6.2.1 Perimeter edge seal

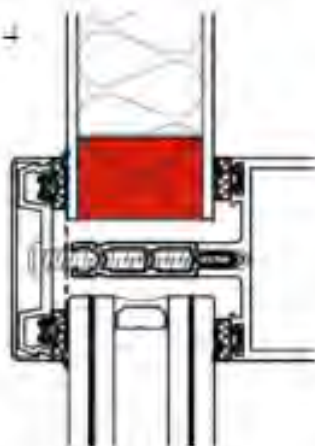
A key component of a spandrel/infill panel is the perimeter edge detail. This is a component which performs multiple functions, all of which are vital to the overall performance of the panel. Not only does it provide a weather-seal, but it is also a thermal break and a key structural component of the panel. Typically, a material such as PVC is used.

A non-compressible spacer is required in order to be able to adequately clamp the panel into the curtain wall/windows frame. The edge of the panel must also be sealed; the edge of the panel is in the drainage zone of the frame and as such may be subject to periodic wetting. Tapes are often used to create this seal.

The spacer material is often selected so as to reduce heat loss and condensation risk at the panel edge, and so it is considered as a thermal break and is therefore exempt from the requirements of regulation 7(2). This applies to spacers used ‘normally’, i.e. a spacer of minimum size, limited to the very edge of the panel, as illustrated in Figure 4 below.


Where the edge spacer must be sealed to prevent moisture entering the panel (e.g. to prevent deterioration or reduction of thermal performance of the products/material within the panel) then the seal might be considered exempt from the requirements of Regulation 7(2).

Figure 4

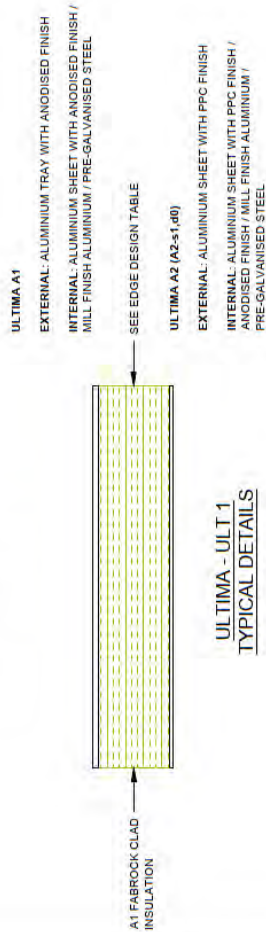


Source: Technical guidance
for interpretation in relation
to the external walls and
specified attachments of
Relevant Buildings in England.

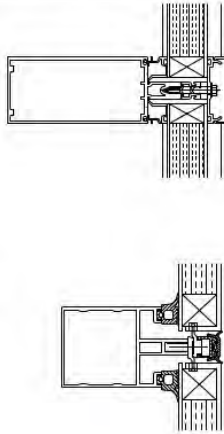
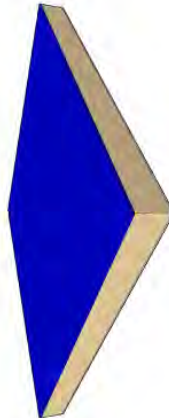
CWCT/SFE September 2020

For further guidance please contact Metalline
Metalline (Services) Limited
Hollies Park Road, Cannock, Staffordshire, WS11 1DB
www.metalline.co.uk |  | sales@metalline.co.uk

ULT1



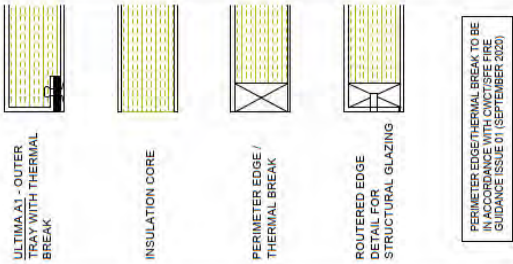
ULTIMA - ULT 1 TYPICAL DETAILS



FOR PANELS USED WITH
STRUCTURAL GLAZING SYSTEMS

FOR PANELS USED WITH
CURTAIN WALLING SYSTEMS

EDGE DESIGN TABLE



METALLINE Metalline Architectural Fabrications Holles Park Road, Cannock, Staffordshire, WS11 1DS www.metalline.co.uk	DO NOT SCALE THIS DRAWING IS FOR INFORMATION ONLY. IT IS NOT TO BE USED FOR CONSTRUCTION. IT IS NOT TO BE USED FOR CONSTRUCTION. IT IS NOT TO BE USED FOR CONSTRUCTION. IT IS NOT TO BE USED FOR CONSTRUCTION.	ULTIMA A1 Non-combustible Aluminium Insulated Spondrel Panels	DRAWING FILE		ULTIMA ULT 1
			TYPICAL DETAILS		
			DATE	07/11/21	SCALE
			DESIGN	CB	NTS
		ML-ULT1-001	REVISION		
			NO.	BY	DATE
			DESCRIPTION		
			DATE		

TECHNICAL DATA SHEET

FABROCK® CWP

Curtain Wall Insulation

**ROCKWOOL stone wool insulation:**

- Rated Euroclass A1 – will not develop toxic smoke or promote flame spread in the event of fire
- Dimensionally stable – maintains thermal performance for lifetime of installation
- Acoustically absorbent – traps sound waves to reduce external noise transfer

ROCKWOOL FABROCK® CWP simultaneously addresses fire resistance, thermal and acoustic performance requirements for a variety of curtain wall systems.

This comprehensive turn-key solution comprises three A1 rated non-combustible products: FABROCK® CWP 410 Core, FABROCK® CWP 411 Edge and FABROCK® Therm 413.

Readily available in a wide range of close tolerance thicknesses, ROCKWOOL FABROCK® CWP is manufactured to bespoke specifications, providing an efficient and proven specification for offsite construction.

Email us to learn more about the comprehensive packages available for specifiers and panel manufacturers:

CoreSolutionsMarketing@rockwool.com



TECHNICAL DATA SHEET

FABROCK® CWP

Curtain Wall Insulation - WER

ROCKWOOL FABROCK® CWP is a range of three products designed for fire rated curtain wall applications.

Product name	FABROCK® CWP 410 Core	FABROCK® CWP 411 Edge	FABROCK® Therm 413	Unit	Test standard
Fire performance					
Reaction to fire - Euroclass	A1	A1	A1	-	EN 13501-1
Thermal performance					
Thermal conductivity (board)	38	39	36	mW/mK	EN 12667
Thermal conductivity (lamella)	-	52	-	mW/mK	EN 12667
Mechanical performance					
Compression strength (ksi) (board)	30	65	15	kPa	EN 826
Compression e-modulus (board - *lamella)	0.5	30*	-	mPa	EN 826
Compression strength (ksi) (lamella)	-	150	-	kPa	EN 826
Tensile strength perpendicular to face (board)	13	17	5	kPa	EN 1607
Tensile strength perpendicular to face (lamella)	-	150	-	kPa	EN 1607
Water repellent performance					
Water absorption (short-term)	<1	<1	<1	kg/m²	EN 1609
Water absorption (long-term)	<3	<3	<3	kg/m²	EN 12087
Specialised information					
Thickness range	On request	On request	-	-	-
Dimensions	On request	On request	-	-	-
Facings	Two sided grinded	One side glass fibre	One side aluminium foil / One side grinded	-	-
Optimised surface for gluing	Yes	-	Yes	-	-
Certification					
Health & safety	EUCB	EUCB	EUCB	-	-

For reaction to fire, thermal, acoustic and mechanical performances of the finished composite panel please consult with the panel manufacturer.

NOTE: Information is up-to-date and correct as at the date of issue. As we cannot control or anticipate the conditions under which our products may be used, each user should review the information in specific context of the planned use. It is the user's responsibility to validate that our products with the properties described in the specification is suitable for use in its application. No express or implied warranties are given other than those implied mandatory by law. This document is the property of ROCKWOOL International A/S, no alteration or modification is allowed without prior written authorization; no liability shall rise from non-authorized alteration.

ROCKWOOL Core Solutions
CoreSolutionsMarketing@rockwool.com

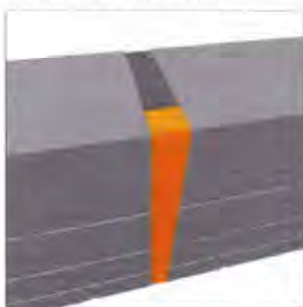
www.rockwool.com/group

November 2021 – Version 1

DESCRIPTION

Arbosil 1071 is a one part Low Modulus Fire Resisting and Acoustic Silicone Sealant which cures on exposure to moisture vapour to form a very elastic silicone rubber. Arbosil 1071 has good adhesion to concrete, brickwork, metals and many other common construction substrates.

MAIN APPLICATIONS



High Movement Fire Seal

Recommended for the sealing of expansion joints and other details in walls or screens to prevent the passage of fire. Recommended for use in sports stadiums where a fire seal is required. Fire resistance of 4 hours has been independently verified.

NB: Not recommended for overpainting and for use against natural stone.

SPECIFICATION COMPLIANCE

BS EN ISO 11600 – F/G – 25 LM
BS 5889 Type A: 1989
Fire Testing to BS 476 Part 20:1987;
Warrington Report No: 122635
Warrington Report No: 123325/A
Acoustic Testing;
AIRO Report L/2913/6
AIRO Report L/2913/7

APPLICATION INSTRUCTIONS

Joint preparation

The joint surfaces must be clean, dry and free from all contamination. The surfaces should be degreased using the appropriate Arbo Cleaner. Primers may be required on some substrates. It is recommended that Adshead Ratcliffe Technical Services Department should be consulted and advice obtained with regard to the choice of primer for specific purposes.

Joint Backing

Where applicable, appropriate joint filler e.g. mineral wool or closed cell polyethylene foam, should be used to provide the correct joint depth (see chart for joint dimensions required for fire integrity and insulation values).

Application

All joint preparation, priming, and sealant application should be carried out in accordance with BS 8000 Part 16, the British Standard for the sealing of joints in buildings using sealants.

Arbosil 1071 is supplied in polyethylene 380ml cartridges and can be applied into the joint using an Arbo Caulking Gun

Joint Size Suitability

Joint Width
Minimum 6mm
Maximum 25mm (single application); for advice on multiple applications please contact Adshead Ratcliffe Technical Services Department.

Joint Depth

Minimum 10mm on porous substrates
Minimum 6mm on non-porous substrates
Maximum 25mm

Width: Depth ratio (within above min/max restrictions)

Please contact Adshead Ratcliffe Technical Services Department. Generally, joints should be as narrow as possible minimize exposure to fire.

PACKAGING

25 x 380ml Polyethylene Cartridges per box. Polyethylene Nozzles are included in each box.

COLOURS

White, Grey (special colour made to order subject to minimum order quantities). Please contact Adshead Ratcliffe Technical Services Department for further information.

STORAGE LIFE

12 months in original unopened packaging stored in a cool, dry place out of direct sunlight.

HEALTH AND SAFETY

No particular hazards with this product but please consult Material Safety Data Sheet for full information.

TECHNICAL DATA

Skin Time at 20° C/65 % RH:	45 minutes
Application Temperature:	+ 5° C to + 50° C
Service Temperature:	- 50° C to + 120° C
Typical Shore Hardness:	20
Cure Rate at 20° C/65 % RH:	1mm/24 hours
Chemical Resistance:	Resistant to most dilute acids and alkalis. Organic solvents may cause the sealant to swell and lose adhesion.
UV Resistance:	Very Good
Service Life:	25 years+
Movement Accommodation:	Butt joints (movement in tension and compression): 50 %. Do not exceed ± 33 % in any one direction. Lap joints (movement in shear): 100 %. Do not exceed ± 66 % in any one direction

ACCESSORIES

Primers

Arbo Primer 2650 (500ml tin). Yield approximately 125 metres per tin
 Arbo Primer 2402 (500ml tin). Yield approximately 200 metres per tin
 Arbo Primer 2172 (500ml tin). Yield approximately 200 metres per tin

Cleaners

Arbo Cleaner No.17- 1 Litre Tin (Xylene based – not suitable for use with plastics or delicate finishes)
 Arbo Cleaner No. 16 - 1 Litre Tin (Alcohol Based)

Ancillary Equipment

Polyethylene Nozzles
 Arbo Caulking Guns

QUANTITY ESTIMATOR

Joint Size (mm)	Metres/Litre
6 x 6	27.8
9 x 6	18.5
12 x 9	9.3
18 x 10	5.6
25 x 10	4.0

FIRE TEST RESULTS SYNOPSIS

Joint Size (mm)	Backing Material	Integrity (minutes)
50 x 15	Rockwool	240
30 x 25	Foam Polyethylene*	240
15 x 10	Mineral Wool	240
20 x 20	Foam Polyethylene*	240
30 x 15	Rockwool	240
35 x 25	Foam Polyethylene*	240
10 x 10	Foam Polyethylene*	240

NB: *Test incorporates seals and backing material on both faces of the construction

Important: The information in this leaflet is given in good faith and based on results gained from experience and tests. However, all recommendations or suggestions are made without guarantee since the conditions of use are beyond our control. Goods are supplied subject to the Company's terms and conditions of sales, a copy of which is available on request.

EWI SYSTEM HOLDERS

Non-combustible thermal insulation





What is ROCKWOOL?

Put simply, ROCKWOOL is made from rock. Our manufacturing process recreates the inside of an active volcano, using a cupola furnace to melt volcanic basalt rock at temperatures of up to 1,500°C.

The liquid rock is channelled into a chamber where it is spun into strands. These strands are collected, then mixed with a small amount of binder and water-repelling agent to form stone wool insulation products.



Advantages

Non-combustible

- ROCKWOOL stone wool achieves the highest 'A1 – Non-combustible' rating under the European Reaction to Fire Classification System
- This means that it doesn't burn and won't contribute to any stage of a fire

Durable

- ROCKWOOL slabs are dimensionally stable and won't shrink or degrade over the lifetime of the building
- The dense outer surface provides a solid face for base coat application, and helps to prevent overdriven fixings
- Offers a high resistance to wind and rain when exposed during installation
- Tried and tested: EWI providers across Europe have been using ROCKWOOL in their systems for over 40 years

Breathable

- The breathable open-cell structure of ROCKWOOL stone wool allows water vapour to pass through, while the randomly oriented water-repellent fibres work to prevent water ingress
- ROCKWOOL stone wool has a vapour resistance similar to that of still air

Thermal Performance

- When tightly butt jointed, the fibres of adjacent slabs will effectively knit together
- This eliminates heat losses that would otherwise be caused by gaps between slabs

Acoustic Performance

- EWI systems incorporating ROCKWOOL slabs can add significant mass to the building envelope, helping to limit the transfer of sound and vibration, while the fibrous nature of the product also helps to stop sound through absorption
- Test evidence demonstrates an improvement to the weighted sound reduction, R_w , of up to 8 dB (substrate-dependent)

External Wall Dual Density Slabs

Product description

External Wall Dual Density Slab is a stone wool insulation specifically developed for use in external wall insulation systems.

Made using a ROCKWOOL-patented 'dual density' manufacturing process, the top layer of each slab has a distinctly higher density than the remainder of the product. This provides a robust outer surface for applying render and accepting fixings, while the resilient underside can accommodate unevenness in the substrate.

To aid installation the top layer is branded with 'THIS SIDE UP', allowing for quick and easy identification of the outer surface.

Dimensions

Length	Width	Thickness
1200mm	600mm	50-250mm (10mm increments)

Performance

Fire

Euroclass A1 – non-combustible

Thermal

Thermal conductivity 0.036 W/mK

Strength

Tensile strength perpendicular to faces ≥ 10 kPa

Compressive ≥ 10 kPa

U-values

U-value (W/m ² K)	External wall slab DD ¹ (mm)	
	New build Steel frame ¹	Refurbishment 215mm block ²
0.30	50	110
0.29	60	110
0.28	60	120
0.27	60	120
0.26	70	130
0.25	70	130
0.24	80	140
0.23	80	140
0.22	90	150
0.21	100	160
0.20	100	170
0.19	110	170
0.18	120	190
0.17	130	200
0.16	140	210
0.15	160	220
0.14	170	240

EWI System on:

¹ 12mm Cement Particle Board, 100mm Steel Frame filled with 100mm ROCKWOOL Flexi, 2 x 12.5mm Plasterboard.

² 215mm Dense Concrete Block, 13mm Plaster.

External Wall HD Slab

Product description

External Wall HD Slab is a stone wool insulation specifically developed for use in external wall insulation systems where a higher density slab required.

Dimensions

Length	Width	Thickness
1200mm	600mm	30-200mm (10mm increments)

Performance

Fire

Euroclass A1 – non-combustible

Thermal

Thermal conductivity 0.038 W/mK (30 – 40mm) / 0.039 W/mK (> 40mm)

Strength

Tensile strength perpendicular to faces ≥ 15 kPa

Compressive ≥ 10 kPa



Double Layering

Insulation thicknesses greater than 250mm can be achieved by installing slabs in two layers.

Where possible both layers should be of the same thickness, e.g. 2 x 150mm to meet 300mm – otherwise, for ease of identification on site, two visually dissimilar thicknesses should be chosen.

Fixing instructions

Installation is started from the left side of the façade at base track level.

When using two different slab thicknesses, the thinner of the two is installed first. To avoid thermal bridging the slabs are installed in a brick bond pattern.

First layer

The first slab to be installed is cut in half (i.e. measuring 600x600mm), as per Figure 1 below. This is to ensure that the second layer is offset by half a slab length. The run is then continued to the right with full size slabs.

Each slab is affixed with adhesive and one centrally located fixing.

Second layer

The second layer is started and continued from left to right using full-size slabs. Each slab is affixed with 5 fixings per board in the pattern shown in Figure 2. There is no need for adhesive between the layers.

Figure 1
First layer



Per board: one centrally located fixing.

Figure 2
Second layer



Per board: one centrally located fixing, and four located 100-150mm diagonally from each corner.
Note: Number of fixings required may increase subject to project-specific wind load calculations.

Having completed the first course of two layers, the second course is then installed in the same way – i.e. the first layer is started with a half board from the left side as per Figure 1, followed by the second layer as per Figure 2.

Packaging

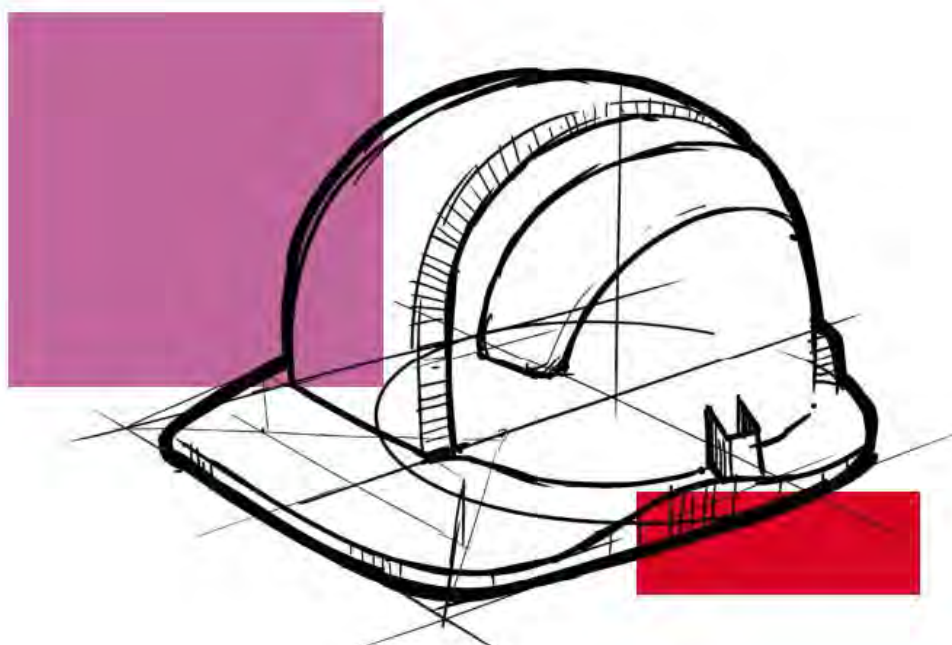
The product is supplied on pallets. For full details of packaging specifications and minimum order quantities, please see the EWI System Holder's Ordering Guide

Handling & Storage

Slabs should be stored indoors or under waterproof covering.

Quality Assurance

ROCKWOOL operates a Quality Management System which complies with the requirements of BS EN ISO 9001:2008 and is registered by BSI-QA under Certificate No. FM 02262.



Sustainability

As an environmentally conscious company, ROCKWOOL promotes the sustainable production and use of insulation and is committed to a continuous process of environmental improvement.

All ROCKWOOL products provide outstanding thermal protection as well as four added benefits:



Fire resistance



Acoustic comfort



Sustainable materials



Durability

Health & Safety

The safety of ROCKWOOL stone wool is confirmed by current UK and Republic of Ireland health & safety regulations and EU directive 97/69/EC: ROCKWOOL fibres are not classified as a possible human carcinogen.

A Material Safety Data Sheet is available and can be downloaded from www.rockwool.co.uk to assist in the preparation of risk assessments, as required by the Control of Substances Hazardous to Health Regulations (COSHH).

Environment

Made from a renewable and plentiful naturally occurring resource, ROCKWOOL insulation saves fuel costs and energy in use and relies on trapped air for its thermal properties.

ROCKWOOL insulation does not contain (and has never contained) gases that have ozone depletion potential (ODP) or global warming potential (GWP).

ROCKWOOL is approximately 97% recyclable. For waste ROCKWOOL material that may be generated during installation or at end of life, we are happy to discuss the individual requirements of contractors and users considering returning these materials to our factory for recycling.



Interested?

For further information, contact the Technical Solutions Team on 01656 868490 or email technical.solutions@rockwool.co.uk

Visit www.rockwool.co.uk to view our complete range of products and services.

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R 131 A101

Glass Fibre Mesh Fabrics

General Description

Glass fiber mesh fabrics combined with specially designed mesh surface treatments can be used in a wide range of applications.

Mesh R 131 is mainly used as one component of external thermal insulation systems. A high quality synthetic coating on the glass yarn protects our mesh against alkaline influences from the adhesives and other materials that are used.

Technical characteristics

Works Standard: 0326 Glass Fibre Mesh Fabrics

Characteristics	Units Description	R 131 A101	
		Warp	Weft
Square Dimension	mm / informative value	3,5	3,8
Standard Width (1)	cm / individual value	100 or 110	
Roll Length (1)	m / individual value	50	
Treated Fabric Thickness	mm / informative value	0,52	
Loom state Fabric Weight	g/m² / informative value	131	
Treated Fabric Weight	g/m² individual value, minimum	160	
Treatment type	alkaliresistant without emollient, obstructing yarn drifting		

(1) Other dimension on request

Tensile strength (TS) and elongation:

Minimum individual tensile strength (N/50 mm) and maximum elongation (%) when reaching minimum tensile strength is ascertained according DIN EN ISO 13934-1 as per below.

	Tensile Strength		Elongation
Deposition method	Nominal value	Individual value	Average value
Standard condition	2200 / 2200	1900 / 1900	3,8 / 3,8
Fast Test (6 hours)	1700 / 1700	1250 / 1250	3,5 / 3,5
Fast Test (24 hours)		50 % / 50 %	
3 ions solution (ETAG 004)		1000 / 1000	
		50 % / 50 %	

Additional Information

- Quality inspection**
 The way of quality inspection, taking of the samples and taking over of the material, is according to 0326 works standard
- Packing:**
 The rolls of fabrics are packed vertically in cardboard, on a wooden pallet. A precise method of packing is mentioned in the works standard for packing
- Storing:**
 Packed rolls are to be stored in dry rooms. Storing temperature is from -10°C to + 50°C

Technical Data Sheet

Properties

- High mechanical strength
- Excellent dimensional stability
- Compatible with all major facade systems



Edited by:

ADFORS Construction Products Europe

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 Sokolovska 106
 CZ – 570 21 Litomysl

www.sg-adfors.com

ADFORS Construction Products Europe reserves the right to change the information given herein without prior notice

Technical Data Sheet № 11

Last update: 22/08/2012



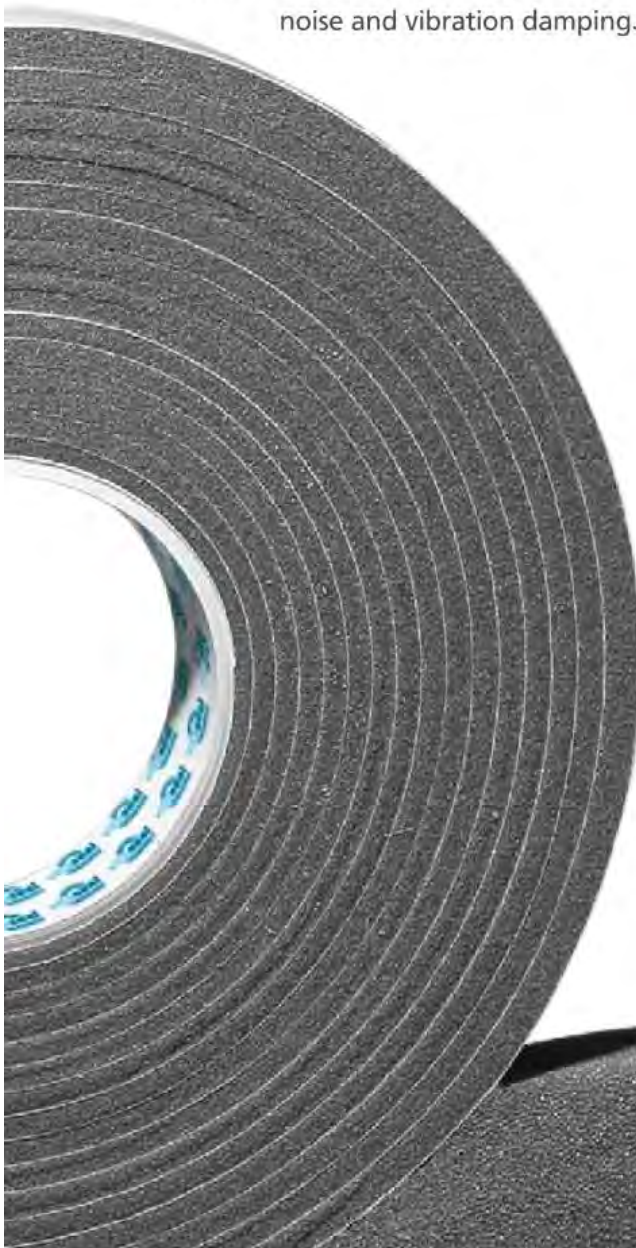


The expanding joint sealing tape



The expanding joint sealing tape

Manufactured by Vita Cellular Foams. VitaSeal is a unique combination of a resilient foam and a water resisting binder. The combination produces a "dry" pre-formed strip seal used to resist weather ingress in fenestration, roofing and construction applications. The viscoelastic properties also offer noise and vibration damping.



VitaSeal is manufactured using an open cell polyurethane foam heavily impregnated with acrylics creating flame retardant properties.

Under high compression the product will create a weather-proof seal, under low compression the product is suitable for draught sealing.

VitaSeal 600 is recommended for use in more extreme weather applications (tested to DIN 52453 Watertight Against Driving Rain) and is fully resistant to UV.

The product is supplied in rolls, pre-compressed to approximately 85%.



Vitaseal HPE has been developed for the more demanding application, especially in timber frame construction, where movement within the structure has to be accommodated whilst ensuring that a weathertight seal remains constant.

The open cell nature of the product ensures good ventilation preventing moisture build up in the joint whilst still providing the thermal barrier and acoustic performance required.

As with the Vitaseal 600, HPE provides good stability to UV ageing and sealing against driving rain.

Improving Standards

In the article on 'Perimeter sealing of doors and windows' published in the NHBC Standards Extra June 2010 it is observed that three key factors come into play to maintain performance and durability being weathertightness, airtightness and insulation. It is recognised that foam tapes with a minimum 600 Pascal rating provide the necessary performance criteria together with the flexibility required for movement to meet today's exacting standards. Further detail may be obtained by following the NHBC link:

<http://www.nhbc.co.uk/NHBCPublications/LiteratureLibrary/Technical/StandardsExtra/filedownload,41029,en.pdf>

Long-life flexibility in multiple use

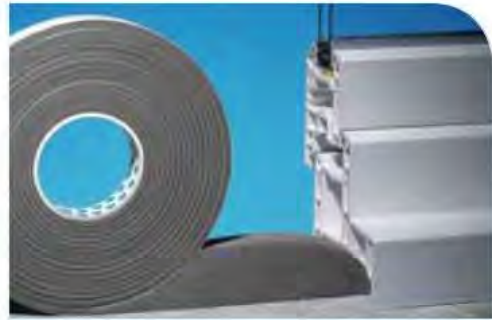
VitaSeal is supplied as a pre-compressed roll, with one side being self-adhesive to assist with initial positioning. Available in a number of different widths and thicknesses. Used in the correct way, VitaSeal is suitable for many different applications when used at the specific compression shown below.



At 10% compression -
Soundproofing and anti-vibration

At a minimum of 50% compression -
Thermal insulation and dust particle insulation.

At 75% compression - Water resistance
(after 75% compression the performance of the joint improves)



Applications:

- Perimeter seals for windows and doors
- Expansion joints
- Side/end laps on roofing sheets
- Joints for portable or sectional buildings
- Abutment seals for conservatories
- Acoustic seal
- Timber buildings
- Ductwork
- Sealing roof lights
- Installation of solar panels
- Caravan and mobile home manufacture

Benefits:

- Quick installation
- Easy to apply
- Improves energy efficiency in buildings
- Expands to find its own level
- Seals against uneven surfaces
- Clean product (in comparison to silicones and mastics)
- Accommodates joint movement
- Allows ventilation of joint
- Easy to quantify usage
- Minimal wastage
- Can be painted after installation
- Only need one product to make watertight



Technical Specification

Material	Polyurethane cellular foam, impregnated with a flame retardant acrylic resin.
Building Classification	Class 1 according to NF P85-570, BG1 according to DIN 18 542 (P-ND504-479).
Fire Resistance	B1, self-extinguishing.
Watertight Against Driving Rain DIN 52453	600 pa minimum, according to the range of use of Vitaseal 600 as described below. Independently tested by AMPA Hanover.
Vapour Resistivity DIN 18542	$\mu < 10$
Tensile Strength ISO 1798	>170 kPa
Elongation at breaking ISO 1798	$>250\%$
Compatibility	Will cause no corrosion with iron, steel, zinc coated sheet, aluminium or copper. Will not corrode PVC, glazing, wood, concrete or tiles.



Product Selector

Gap to be filled (mm)	Tape width into joint depth (mm)	Vitaseal 600 reference to order
1-3	10	600 10 1-3
2-4	10	600 10 2-4
2-4	15	600 15 2-4
3-7	10	600 10 3-7
3-7	15	600 15 3-7
3-7	20	600 20 3-7
3-7	25	600 25 3-7
5-10	15	600 15 5-10
5-10	20	600 20 5-10
5-10	25	600 25 5-10
7-12	15	600 15 7-12
7-12	20	600 20 7-12
8-15	20	600 20 8-15
8-15	30	600 30 8-15
10-18	20	600 20 10-18
10-18	25	600 25 10-18
10-18	30	600 30 10-18



Product Selector

Gap to be filled (mm)	Tape width into joint depth (mm)	Vitaseal HPE reference to order
13-24	30	HPE 30 13-24
13-24	40	HPE 40 13-24
24-40	40	HPE 40 24-40



vita cellular foams
VITA CELLULAR FOAMS (UK) LTD.



email: vitaseal@vcfuk.com
www.vitaseal.com

A Vita Group Product
www.thevitagroup.com

B. Fire Barriers

FF102/50

Key Features:

- For use in up to 50mm cavities
- Weather Proof
- Age Tested
- Up to 120 minutes Fire Rated
- Simple to install



TENMAT's FF102/50 Ventilated Fire Barrier is a high expansion intumescent seal offering industry leading performance as a ventilated cavity fire barrier. The product has undergone extensive fire testing and is suitable for use within the majority of construction types, enabling the versatile system to be specified with confidence and provide the installer with a simple, time saving and site friendly solution.

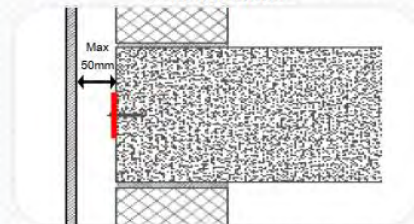
The FF102/50 Ventilated Fire Barrier is a rigid, high expansion intumescent strip encased in aluminium foil. The FF102/50 can be mechanically fixed both horizontally and vertically within ventilated cavities behind rainscreen or cladding systems to act as a cavity fire barrier.

Product Dimensions

6 mm x 75 mm x 1000 mm

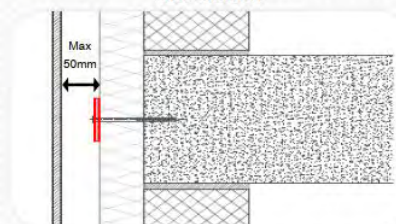
Approved Applications

FF102/50 Fixed to Non-Combustible Constructions



VFB Ref.	Assessed Construction Type	Fire Rating Horizontal	Fire Rating Vertical
FF102/50	Brick, Block, Masonry	120	120
FF102/50	Aerated Concrete Block	120	120

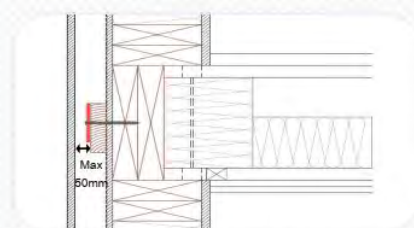
FF102/50 Fixed onto Existing Cavity Insulation



VFB Ref.	Assessed Construction Type	Fire Rating Horizontal	Fire Rating Vertical
FF102/50	Min. Fibre on Concrete	90	90
FF102/50	Min. Fibre on Timber Frame	30	60

For details on approved Mineral Fibre Insulation types, please consult **TENMAT**.

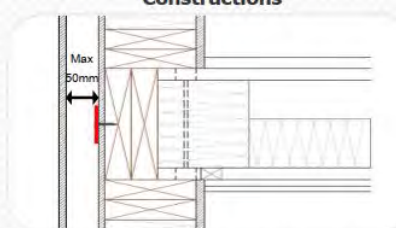
FF102/50 Fixed to Timber Batten



VFB Ref.	Assessed Construction Type	Fire Rating Horizontal	Fire Rating Vertical
FF102/50	Timber Batten on T. Frame	30	30

Cavities greater than 50mm can be reduced to 50mm by the installation of a suitable OSB, Timber or Non-Combustible packer (consult **TENMAT** for details).

FF102/50 Fixed to Combustible Timber Constructions



VFB Ref.	Assessed Construction Type	Fire Rating Horizontal	Fire Rating Vertical
FF102/50	Timber Frame	30	60

Fitting Instructions

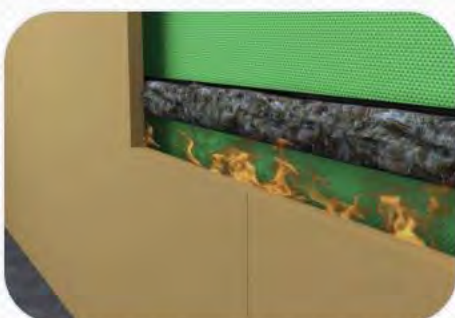
TENMAT's FF102/50 Ventilated Fire Barrier is a particularly versatile and extensively fire tested Ventilated Fire Barrier which can be installed in a wide range of construction types. The product is simply mechanically fixed in position to leave up to a maximum 44mm air gap. Check with **TENMAT** if a greater air gap is required.



- Fix FF102/50 with non-combustible nails or screws.
- Maximum screw head diameter is 11.5mm (trumpet/countersunk type head only).
- Product must be fixed at maximum 250mm centres.



- Fixings must be along centre line of the Fire Barrier.
- Ensure label side is facing out into cavity.
- Adjacent lengths must be tightly butted.



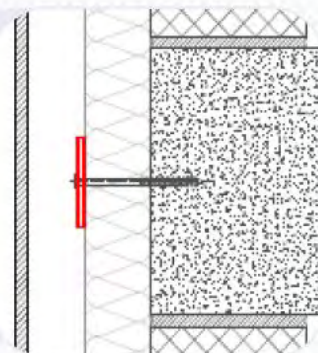
- Maximum remaining air gap to the back of the cladding panel is 44mm.
- Ensure Fire Barrier is free to expand in a fire situation.

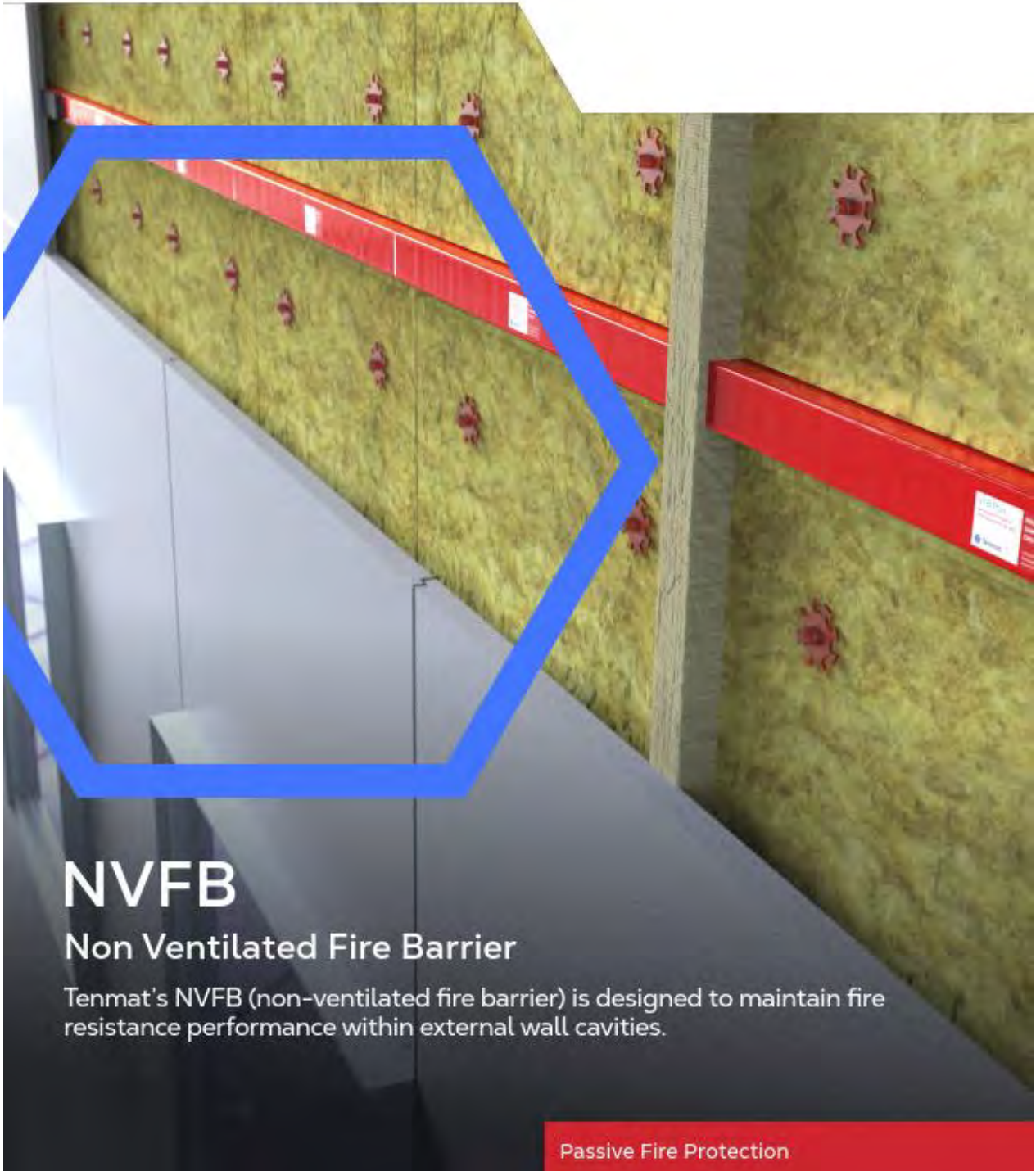
When fixing FF102/50 through existing cavity insulation, ensure fixing embeds into solid substrate.

Recommended Fixing Type:

- EJOT FPS-E 8.0 for aerated block
- EJOT FBS-E 6.3 for concrete

Other fixing types can be used. Contact your fixings supplier or alternatively contact **TENMAT**.





Product Description

Tenmat's NVFB Non-Ventilated Cavity Fire Barriers, are manufactured from stone mineral wool with an A1 Reaction to Fire Rating and are designed to maintain fire resisting performance to external wall cavities.

The NVFB is capable of providing effective fire resistance, for integrity (E) and insulation (I) for up to 120 minutes (EI120) depending upon the orientation of the NVFB and the construction of the external walls.

Tenmat NVFB is supplied cut to size to suit the cavity width. It is supplied as plain stone mineral wool as standard and can also be supplied with foil encapsulation or with an integral DPC.

The NVFB is designed for use within cavities up to 600mm wide and only requires 5mm of compression when fitting.

Product Details

- Cavity Fire Barrier for use at: Compartment Floor, Compartment/Party Walls & Around Openings
 - Fire Resistance Classification to EN 13501-2
 - A1 Reaction to Fire
 - Fire Rated up to 120 minutes integrity and insulation (EI120)
 - Suitable for cavities up to 600mm
 - Suitable for use vertically and horizontally
 - Tested for use in conjunction with masonry support brackets
 - Tested with SFS Systems with calcium silicate fibre cement boards
 - Provided in 1 metre lengths
 - Standard thickness/depth of 100mm
 - Available in a reduced thickness/depth of 82mm
 - Optional integral DPC to prevent moisture migration
 - Supplied plain as standard, optional foil encapsulation available
 - No maintenance required after installation
-

Sizes

100mm deep (+5mm for compression fit) x 1000mm with width to suit cavity.

Non-standard 82mm depth available upon request.



Approved Applications

Non-Ventilated Fire Barriers for vertical external wall cavities.

Fire Test Evidence

UL International Classification Report-4789845955/C

Inner Leaf Substrate Type (facing cavity) with appropriate fire resistance	Outer Leaf Substrate Type (facing cavity) with appropriate fire resistance	Orientation	Insulation Type Within Cavity	To suit cavity widths (in mm)	Compression required	Minimum Thickness of NVFB (mm)	Product Fire Resistance Rating		
							Integrity (E)	Insulation (I)	Classification (EI)
Rigid Walls - min. 100mm thick									
100mm Masonry or Concrete walls	100mm Masonry or Concrete walls	Vertical	None	10-200	5mm	100	120	120	120
100mm Masonry or Concrete walls	100mm Masonry or Concrete walls	Vertical	None	201-600	5mm	82	120	30	30
SFS System with calcium silicate cement fibre board									
SFS System Walls*	100mm Masonry or Concrete walls	Vertical	75mm thick Rockwool DuoSlab	10-600	5mm	82	120	30	30
SFS System Walls*	150mm Masonry or Concrete floor	Horizontal	75mm Rockwool DuoSlab	10-595	5mm	82	120	60	60
Rigid Floors - min. 150mm thick									
150mm concrete/ masonry floor	150mm concrete/ masonry floor	Horizontal	None	10-100	5mm	100	120	120	120
150mm concrete/ masonry floor	150mm concrete/ masonry floor	Horizontal	None	101-200	5mm	100	120	90	90
150mm Masonry or Concrete floor	Masonry or Concrete	Horizontal	None	201-450	5mm	82	120	30	30
150mm Masonry or Concrete floor	Masonry or Concrete floor	Horizontal	None	451-595	5mm	82	60	30	30
Rigid Floors with Masonry Support Brackets									
150mm Masonry or Concrete with masonry support brackets	100mm Masonry or Concrete	Horizontal	None	200	5mm	82	120	120	120
150mm Masonry or Concrete with masonry support brackets	100mm Masonry or Concrete	Horizontal	None	201-450	5mm	82	120	30	30

*NVFB can be supplied with optional DPC layer for use with external masonry walls

SFS system build up 135mm overall thickness, comprising 90mm Metsec C stud, clad internally with 2 x 15mm Knauf Fire Panel, clad externally with 1 x 12mm RCM Y-Wall and minimum 75mm Rockwool Duo Slab.

The supporting construction must be classified in accordance with EN13501-2 for the required fire resistance period.

Technical Information

Property	Units	Value
Reaction to Fire Classification EN 13501-1		A1

Sizes

Cavity Size (mm)	Product Width (mm) including 5mm compression	Fitting Option Number	Barrier Support Type	No. of support (brackets) fixings per metre	Maximum Bracket Centres (mm)	Face Fixed Fixing Centres (mm)
10 to 75	15-80	1	Screw	N/A	N/A	250
76-90	81-95	2	MP Bracket	2	500	N/A
91-215	96-220	3	MP Bracket	2	500	N/A
216-275	221-280	4	MP Bracket	3	350	N/A
276-450	281-455	5	HP Bracket	2	500	N/A
200-450 (Masonry Support Brackets)	205-455	6	As required for cavity size	As required for cavity size	As required for cavity size	As required for cavity size

Note:

Where an NVFB with an integral DPC is required, Face fixing is not possible and brackets must be used and can be cut to size as required.



Installation Considerations

NVFB cavity barriers should be installed in a continuous run. Where this is not possible, details should be agreed with the projects principal designer and or fire engineer.

Horizontal cavity barriers should be installed adjacent and tightly abutted to any vertical cavity barriers, the vertical NVFB cavity barriers should be installed first. NVFB cavity barriers may be cut to length as required, adjacent lengths must be tightly abutted together.

Cavity barrier fixing brackets, both multi purpose, (MP bracket) or high performance (HP bracket) must not penetrate through the face of the cavity barrier. Screws for direct fixing and fixings to secure brackets are not supplied by Tenmat.

The brackets used to fix the NVFB cavity barrier must be installed with the spike inserted centrally (horizontally) to the rock mineral wool. The use of tape is not required over the joints between the lengths of NVFB.

The NVFB must be installed following the installation methods described below. The NVFB must not be penetrated by any other mechanical or electrical services.

Pre Installation

The principal designer must approve the use of any cavity barrier, whether open state or full fill, in conjunction with the products fire classification reports, taking full account of the whole construction of the external wall systems and components, including any requirements of Building Regulations and or NHBC Standards.

Before a Tenmat NVFB cavity barrier is recommended, by Tenmat, the following information is required to ensure that the suggested product is considered suitable for the intended application, by Tenmat, within the construction as indicated by the client.

- 1) Project name, location and postcode.
- 2) Building height and use (as per ADB V1/2 2020).
- 3) Fire resistance period/rating required. Integrity and Insulation (EI).
- 4) Composition and construction of external walls, both inner and outer substrates.
- 5) Total external wall cavity size. (Maximum distance from outer face of inner substrate to inner face of inner substrate including tolerances/ profiles).
- 6) Type and thickness of cavity insulation if present.
- 7) What ventilation gap is required horizontally? (Note: NVFB does not maintain a ventilation gap, if this is required then a Tenmat VFB / Open State Cavity Barrier should be considered)
- 8) Are non-vented cavity barriers required vertically and horizontally?
- 9) Quantity required to complete project?
- 10) When will materials be required?
- 11) Name and role of person completing form.

When the above information is obtained then this can be cross referenced with the full range of Tenmat cavity barriers to ensure that the product recommended, by Tenmat, is considered suitable for consideration by the principal designer.

General Considerations For The Principle Designer

Ideally the cavity barrier should be installed uninterrupted in a continuous line, the product is tested without interruptions with the exception of masonry support brackets (see specific detail).

The principal designer must sanction any interruptions, which may include items such as brackets, rails or battens, that may affect the continuous line of the cavity barrier. The principal designer must consider the combustibility, melting points and the shape of any interruptions, that are likely to prevent the cavity barrier performing as tested or as expected in the projects design.

If there are interruptions/obstructions that prevent the cavity barrier being fitted in a continuous line, and with sanction from the principal designer, the product may be cut with a sharp knife and tightly butted up against any obstructions and then restarted on the opposite side of the obstruction, the obstruction must not create a void which is not filled.

The cavity barrier should not be penetrated by anything other than the mechanical fixings which are used to fix the cavity barrier to the building.

The cavity barrier should be installed onto a flat surface, with no gaps behind the cavity barrier.

The Tenmat technical team should be consulted in any instance where the principal designer is uncertain as to any issues which may impede the ability of the cavity barrier to perform as expected.

Ensure the installation area is free from dust, oil and any corrosive material.

Check the mounting substrate is solid and free from cracks and degradation before beginning.

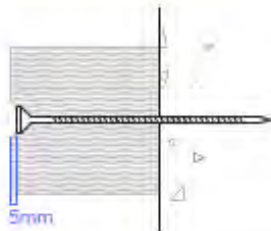
Fitting Instructions

Option 1

NVFB – Product width across cavity 15mm up to 80mm wide, directly faced fixed

Note:

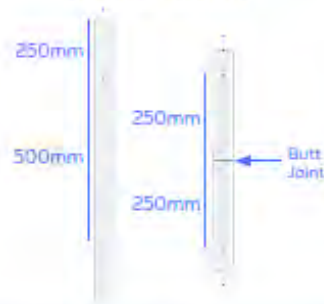
Where an NVFB with an integral DPC is required, Face fixing is not possible and brackets must be used and can be cut to size as required.



Use stainless steel countersunk head screws, with a maximum head diameter of 11.5mm and with a length suitable for the cavity barrier and the substrate. Ensure that the countersunk screw head does fully penetrate the face of the cavity barrier, the screw head should sit at least 5mm behind the face of the cavity barrier. Care should be taken not to compress the surface more than 10mm as this may effect the performance of the cavity barrier.

Position the first screw fixing through the centre line of the face of the cavity barrier at a maximum 250mm from one end, continue to face fix through at maximum 500mm centres (2 screws per linear meter), ensuring that the final fixing is a maximum 250mm from the end of the cavity barrier. This will ensure that face fixings are positioned at 500mm centres across the continuous run of cavity barrier.

Vertical Install



Horizontal Install



Where sections of cavity barrier are less than 1 linear meter in length, ensure that face fixings are positioned at a maximum 250mm from each end. For cut sections of cavity barrier less than or equal to 500mm in length only one fixing is required.

Vertical Install



Horizontal Install

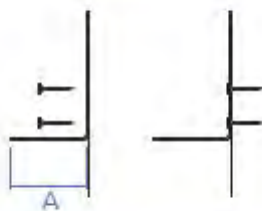


Option 2

NVFB - Product width across cavity from 81mm up to 95mm, fixed using 2 multi purpose (MP) 65mm brackets.



MP brackets are supplied with 2 fixing spikes, one is 65mm long (A), the other is 160mm long (B), with a central pre drilled section for securing the bracket to the substrate. The compression allowed for is 5mm, care should be taken to ensure that the end of the bracket will not come into contact with the outer substrate when compression is applied to the NVFB. If required the bracket can be cut down in length.



For cavity barriers 81mm-95mm wide (across cavity) use 2 MP brackets and the 65mm long spike (A). To secure the bracket use 5mm \varnothing stainless steel screws, with a maximum head diameter of 13mm and with a length and type suitable for the substrate. Ensure that the screw head sits as flush as possible with the substrate so that the NVFB sits tight against the substrate leaving no gaps. Fix through both of the fixing holes.

Fix 2 number MP brackets, per linear meter, to the substrate at maximum 250mm from the end of the cavity barrier, with a maximum spacing between brackets of 500mm. Where sections of cavity barrier are less than 1 linear meter in length, ensure that MP brackets are positioned at a maximum 250mm from each end. For cut sections of cavity barrier less than or equal to 500mm in length only one MP bracket is required.

Vertical Install

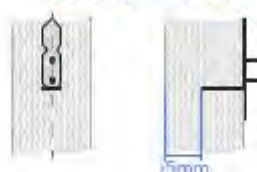


Horizontal Install



Push the cavity barrier onto the bracket spike, the brackets should impale the NVFB to approximately mid barrier depth and must not protrude through the face of the cavity barrier, remembering to allow for the final compression against the outer substrate also. The cavity barrier should be pushed fully onto the bracket spike and sit flush with the substrate, at the rear of the cavity barrier, ensuring that there are no gaps behind the cavity barrier.

Vertical Install



Horizontal Install

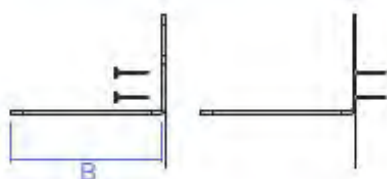


Option 3

NVFB- Product width across cavity from 96mm up to 220mm fixed using 2 multi purpose (MP) 160mm brackets.



MP brackets are supplied with 2 fixing spikes, one spike is 65mm long (A), the other is 160mm long (B), with a central section for securing the bracket to the substrate. The compression allowed for is 5mm, care should be taken to ensure that the end of the bracket will not come into contact with the outer substrate when compression is applied to the NVFB.



For cavity barriers 96mm-220mm wide (across cavity) use 2 MP brackets and the 160mm long spike (B). The 160mm spike will require cutting to size, if used in barriers less than 175mm wide, to ensure that the spike does not pierce through the face of the cavity barrier, the bracket should be cut to provide a minimum projection through the barrier to 3/4 of the cavity barrier width and to a maximum of 25mm behind the face of the cavity barrier.

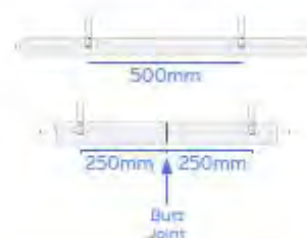
To secure the bracket use 5mm Ø stainless steel screws, with a maximum head diameter of 13mm and with a length and type suitable for the substrate. Ensure that the screw head sits as flush as possible with the substrate so that the NVFB sits tight against the substrate leaving no gaps. Fix through both of the fixing holes.

Fix 2 number MP brackets, per linear meter, to the substrate at maximum 250mm from the end of the cavity barrier, with a maximum spacing between brackets of 500mm. Where sections of cavity barrier are less than 1 linear meter in length, ensure that MP brackets are positioned at a maximum 250mm from each end. Where the cavity barrier is less than or equal to 500mm in length 1 MP bracket may be used.

Vertical Install



Horizontal Install



Push the cavity barrier onto the bracket spike, the brackets should impale the NVFB to approximately mid barrier depth and must not protrude through the face of the cavity barrier, remembering to allow for the final compression against the outer substrate also. The cavity barrier should be pushed fully onto the bracket spike and sit flush with the substrate, at the rear of the cavity barrier, ensuring that there are no gaps behind the cavity barrier.

Vertical Install



Horizontal Install

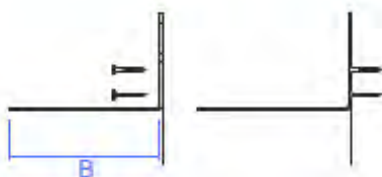


Option 4

NVFB -Product width across cavity from 221mm up to 280mm fixed using 3 multi purpose (MP) 160mm brackets.



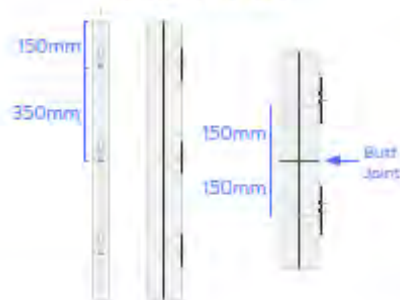
MP brackets are supplied with 2 fixing spikes, one spike is 65mm long (A), the other is 160mm long (B), with a central section for securing the bracket to the substrate. For cavity barriers 221mm-280mm wide (across cavity) use 3 MP brackets and the 160mm long spike (B).



To secure the bracket use 5mm \varnothing stainless steel screws, with a maximum head diameter of 13mm and with a length and type suitable for the substrate. Ensure that the screw head sits as flush as possible with the substrate so that the NVFB sits tight against the substrate leaving no gaps. Fix through both of the fixing holes.

Fix 3 number MP brackets, per linear meter, to the substrate at maximum 150mm from the end of the cavity barrier, with a maximum spacing between brackets of 350mm. Where sections of cavity barrier are less than 1 linear meter in length, ensure that MP brackets are positioned at a maximum 150mm from each end. Where the cavity barrier is less than 350mm in length 1 MP bracket may be used.

Vertical Install



Horizontal Install



Push the cavity barrier onto the bracket spike, the brackets should impale the NVFB to approximately mid barrier depth and must not protrude through the face of the cavity barrier, remembering to allow for the final compression against the outer substrate also. The cavity barrier should be pushed fully onto the bracket spike and sit flush with the substrate, at the rear of the cavity barrier, ensuring that there are no gaps behind the cavity barrier.

Vertical Install

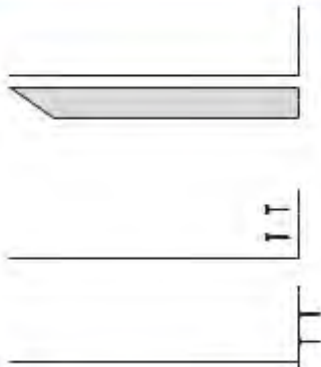


Horizontal Install



Option 5

NVFB -Product width across cavity from 281mm-455mm wide fixed using 2 High Performance (HP) 328mm brackets.



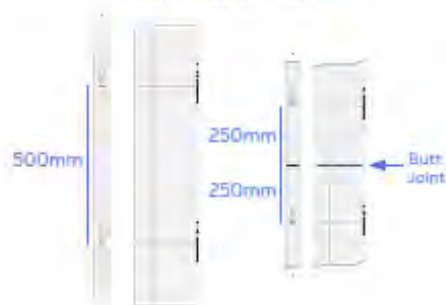
HP brackets are supplied with a single fixing spike, at 328mm long with 6mm Ø pre drilled fixing holes and a 90° return angle for securing the bracket to the substrate. For cavity barriers 281mm-455mm wide (across cavity) use 2 HP brackets and the 328mm long spike.

The 328mm spike will require cutting to size, if used in barriers less than 350mm wide, to ensure that the spike does not pierce through the face of the cavity barrier when compressed, the bracket should be cut to provide a minimum projection through the barrier to 3/4 of the cavity barrier width and to a maximum of 25mm behind the face of the cavity barrier.

To secure the bracket use 5mm Ø stainless steel screws, with a maximum head diameter of 13mm and with a length and type suitable for the substrate. Ensure that the screw head sits as flush as possible with the substrate so that the NVFB sits tight against the substrate leaving no gaps. Fix through both of the fixing holes.

Fix 2 number HP brackets, per linear meter, to the substrate at maximum 250mm from the end of the cavity barrier, with a maximum spacing between brackets of 500mm. Where sections of cavity barrier are less than 1 linear meter in length, ensure that MP brackets are positioned at a maximum 250mm from each end. Where the cavity barrier is less than or equal to 500mm in length 1 HP bracket may be used.

Vertical Install



Horizontal Install



Push the cavity barrier onto the bracket spike, the brackets should impale the NVFB to approximately mid barrier depth and must not protrude through the face of the cavity barrier, remembering to allow for the final compression against the outer substrate also. The cavity barrier should be pushed fully onto the bracket spike and sit flush with the substrate, at the rear of the cavity barrier, ensuring that there are no gaps behind the cavity barrier.

Vertical Install



Horizontal Install



Option 6

NVFB installed in conjunction with masonry support brackets, use options 3, 4 and 5 above as required for NVFB bracket fixing details.

Any cutting of the NVFB on site to suit tolerances, shall be done accurately and kept to a minimum. Ensure that the minimum 5mm extra for the compression is maintained.

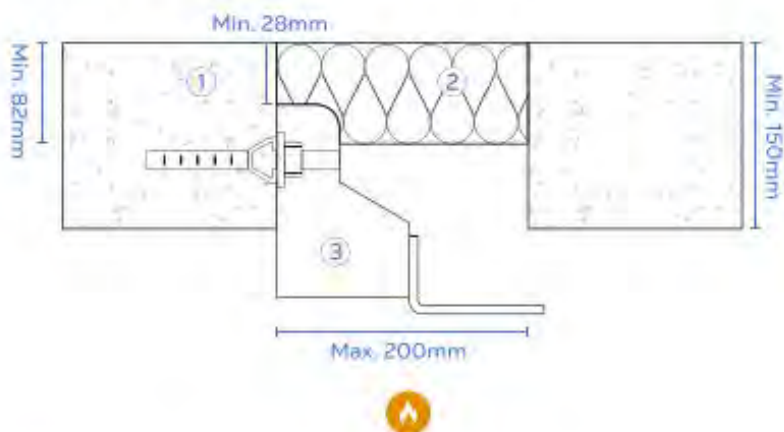
Ensure there is a minimum of 28mm from the top of the masonry support bracket to the top of the floor slab/NVFB.

Mark where the brackets meet the NVFB and cut a notch into the NVFB. Making the notch as small as is practicable.

Compress the NVFB and push into the cavity, ensuring the top of the NVFB sits flush with the top surface of the floor slab.

When extending the length of the NVFB, ensure the adjacent lengths have their joints tightly abutted together and are aligned flush with each other to give the appearance of a continuous strip with no gaps.

Diagram of Tested Detail



- ① 150mm thick lightweight concrete floor
- ② Tenmat NVFB
- ③ Ancon masonry MDC/P support system

Tools / Fittings

- PPE as required by installers employer
 - Masonry drill
 - Screwdriver
 - Saw/Knife for cutting product
 - Measuring tape
 - Access equipment as required
 - Stainless steel fixings suited to the substrate
-

Intended Use

As a cavity barrier, within external wall cavities at the junction of compartment floors, compartment/party walls and around openings, to maintain fire resistance performance of cavities of up to 600mm, in fire conditions.

Maintenance


No active maintenance required, where alterations are made around the product it should be checked visually to ensure that the product is still installed as per the approved original design and fitting instructions at the time of original installation.

Storage

- To be stored in a dry location
- Take care not to exceed safe working loads and heights for storage shelves and racks

NVFB

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M17 1TD United Kingdom


fpsales@tenmat.com

tenmat.com



Part of the
Diamorph Group

Advanced materials.
tenmat.com

Tenmat warrants the materials it produces will conform to Tenmat specifications and approved drawings where applicable. It is entirely the customer's responsibility to make the final product choice and satisfy themselves of the suitability of the product for the intended application, carrying out testing where required. For construction projects, all products which the customer is intending to use on a particular project must be approved in writing by the customer's building designer, system designer or design control professional, to ensure compliance with the latest regulations.

The information contained in Tenmat data sheets is presented in good faith. Tenmat Limited makes passive fire protection product suggestions based solely upon and limited to the information made available to Tenmat. Tenmat possesses knowledge of fire test data and offers manufacturers installation advice. Within reason, Tenmat is skilled at offering opinion concerning the installations in question, and can comment on interfaces with other construction materials, but this is not a recommendation or decision. Decisions on overall building fire strategy are not made by Tenmat. Tenmat products have been tested for a wide range of construction types, and they must be only used in accordance with Tenmat test evidence. Each specific Tenmat product must be installed into a construction that matches the corresponding test report. Tenmat product performance requires safe and proper handling and correct installation. For construction projects, all products which the customer is intending to use on a particular project must be approved in writing by the customer's building designer, system designer or design control professional, to ensure compliance with the latest regulations. Tenmat can provide the relevant fire test evidence on request.

V1 21.1

C. Breathable Membrane

FleetwoodArchitectural
Aluminium

Fleetwood Architectural Aluminium
Fleetwood House
480 Bath Road, Slough
Berkshire, SL1 6BB
Tel: 01753 576 680



Technical Submittal

Project Title :	
Technical Submittal Title:	Breather membrane– Effisus
Reference :	
Revision:	
Company :	
For The Attention Of :	
Location of use:	
Date Submitted :	
Submitted By :	
<p>Please find attached technical submittal for Effisus breather membrane,</p> <p>Technical data including test results and fire reaction classification reports tested as a full system.</p> <p>The Effisus Breather FR obtained class A2-s1, d0 as a system including adhesives and tapes and Class A1 standalone on test standard EN13501 and Class A (or class 1) on ASTM E84. The accessories that are part of this system (Breather FR) are our Effisus 2Adjoin DF and Effisus 2Bond DS.</p>	
Approval Required By:	
To Be Completed By The Main Contractor	
Comments:	
Signed:	
Dated:	

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CLASSIFICATION OF REACTION TO FIRE IN ACCORDANCE WITH UNE-EN 13501-1:2019

V/F
Page 1 of 4

Sponsor: **UPWAY SYSTEMS (Effisus Brand)**
Rua Dr. José Oliveira Mendes, nº44
4760-912 Vila Nova de Famalicão
Portugal



Prepared by: **LGAI Technological Center, S.A.
(APPLUS)**
Campus UAB
Ronda de la Font del Carme, s/n
E - 08193 Bellaterra (Barcelona)

Product name: **Effisus Breather FR membrane**

Classification report nº: **21/23931-157-2**

Date of issue: **22nd January, 2021**

1.- INTRODUCTION

This classification report defines the classification assigned to Effisus Breather FR membrane in accordance with the procedures given in the UNE-EN 13501-1:2019 standard.

2.- DETAILS OF CLASSIFIED PRODUCT

2.1.-General

The product, Effisus Breather FR membrane, is defined as fiberglass fleece membrane.

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2.2.-Product description

In accordance with the technical specifications provided by the petitioner:

Product trade name: Effisus Breather FR membrane

Fiberglass fleece, thickness of $0,21 \pm 0,021$ mm, superficial density of 220-230 g/m², density of 1071 kg/m³ (value calculated in the laboratory), white colour and smooth appearance.

Manufacturer: UPWAY SYSTEMS Lda (Effisus Brand), Rua Dr. José Oliveira Mendes, nº44, 4760-912 Famalicão, Portugal.

3.-REPORT AND RESULTS IN SUPPORT OF THIS CLASSIFICATION

3.1- Reports

Name of Laboratory	Name of sponsor	Report ref. no.	Test method and date
Applus – LGAI	UPWAY SYSTEMS (Effisus Brand)	21/23931-157-1	UNE-EN ISO 1182:2011 15-01-2021
			UNE-EN ISO 1716:2011* 18-01-2021

* Due to classification standard EN 13501-1:2018 call up test standard EN ISO 1716:2011, we do not test the current version of it.

3.2- Results of the Tests

Test method	RESULTS			
	CRITERIA CLASS A1	Nº TEST	AVERAGE	COMPLIANCE
UNE-EN ISO 1182:2011	$\Delta T \leq 30^{\circ}\text{C}$ (for T_i)	5	21,8	YES
	$\Delta m \leq 50\%$		4,4	YES
	$t_i = 0$ s		0	YES
UNE-EN ISO 1716:2011	$\text{PCS} \leq 2,0$ MJ/kg	3	0,48	YES

4.- CLASSIFICATION AND FIELD OF APPLICATION

4.1- Reference of classification

This classification has been carried out in accordance with UNE-EN 13501-1:2019: "Classification in terms of the behaviour to fire of construction products and building elements. Part 1: Classification made from the data gathered during fire reaction tests".

4.2- Classification

The product, Effisus Breather FR membrane, in relation to its reaction to fire behaviour is classified:

A1

The additional classification in relation to smoke production is:

-

The additional classification in relation to flaming droplets / particles is:

-

Fire Behaviour		Smoke Production		Flaming droplets
A1	-	s	-	r d -

REACTION TO FIRE CLASSIFICATION : A1

This classification is only valid for the final conditions of use described in the present report.

4.3- Field of application

- This classification is valid for the following product parameters:

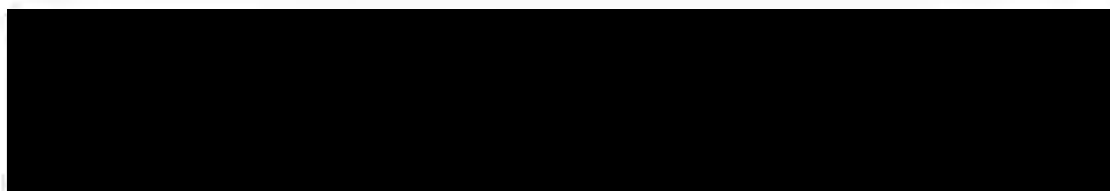
The classification is only valid for the product characteristics shown.

- The classification is valid for the following final use applications:

The product Effisus Breather FR membrane was designed for protection of façades against moisture, driving rain and wind avoiding corrosion, insulation deterioration and mould growth on the façade elements.

4.4.- LIMITATIONS

This classification document does not represent type approval or certification of the product.



Laboratory Manager
LGA Technological Center S.A. (APPLUS)

Technician Responsible of Euroclasses
LGA Technological Center S.A. (APPLUS)

The results refer exclusively to the samples tested at the time and under the conditions indicated. At the customer's request, the agreed decision rule to declare conformance to the specification or standard, is by following a simple binary decision rule. In this case, the upper limit of the probability value of false acceptance or false rejection, according to ILAC G8, is 50%.

Applus+ guarantees that this task has been carried out in compliance with the requirements of our Quality and Sustainability System, and furthermore, that the contractual terms and legal regulations have been complied with. In the framework of our improvement programme, we would appreciate any comments you may deem appropriate. These should be addressed to the manager who signs this document, or to the Quality Director of Applus+, at the following address: gesti@lga.com, clientes@applus.com



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IPAC is a signatory to the EA MLA and
ILAC MRA (European Cooperation for
Accreditation) and ILAC (International
Laboratory Accreditation Cooperation) for
testing

Laboratório de Fumo e Fogo

FIRE REACTION TESTS

UP-WAY SYSTEMS

CLASSIFICATION REPORT Nº LFF.2018.177



f

0 Document Control and Identification

0.1 Document Identification

Project	---
Document Name	Classification Report Nr LFF.2018.177
Document File Name	---

0.2 Version Control

Version	Edition	Revision	Date	Description	Approved by
1	1	0	2018-12-27	Original version	JMG

0.3 Author(s)

Name	Initials
Anabela Martins – Laboratory Technician	AM

0.4 Reviser(s)

Name	Initials
José Mesquita Guimarães – Technical Director of the Laboratory	JMG

0.5 Laboratory Technician(s)

Name	Initials
Bruno Nogueira – Laboratory Technician	BN
Anabela Martins – Laboratory Technician	AM

0.6 Distribution list

Name	Initials	Entity
Laboratório de Fumo e Fogo	LFF	INEGI
---	---	UP-WAY SYSTEMS

INEGI – Instituto de Ciência e Inovação em Engenharia Mecânica e Engenharia Industrial
 Campus da FEUP | Rua Dr. Roberto Frias, 400 | 4200-465 Porto | PORTUGAL
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This presented results refer exclusively to tested specimens.
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 1543-06

0.7 – Identification

Sponsor: Up-Way Systems

Address: Rua José Oliveira Mendes, n.º44
4760-912 Vila Nova Famalicão

Request: Classification according to standard NP EN 13501-1: 2007+A1: 2013

Product Name: Effisus Breather FR

Request Reference: PE30180878

Request Date: 2018-09-15

Report Date: 2018-12-27

A

1 - Introduction

This report concerns the classification of a material, provided by Up-Way Systems, with the reference "Effisus Breather FR", using test data from reaction to fire tests, in accordance with the procedures given in EN 13501-1:2007 + A1:2013.

2 - Details of classified product

2.1 - General

Product name: Effisus Breather FR

Type of product: Waterproofing membrane.

2.2 - Product Description: The material is a wall lining membrane made of a fiberglass fleece and a water based compound. It is aimed at waterproofing buildings facades, when used behind a closed or open rain screen cladding system, fixed to a substrate (insulation, cement particle board or other) by adhesive taping or mechanical fixing.

Reception Date: 2018-12-11

Test Date: 2018-12-19, 2018-12-20 and 2018-12-26

3 - Reports and results in support of this classification

3.1 - Reports

Name of the laboratory	Name of the sponsor	Report Ref. Number	Test method
INEGI - LFF	Up-Way Systems	LFF.2018.177.01	EN ISO 1716:2010
INEGI - LFF	Up-Way Systems	LFF.2018.177.02	EN 13823:2010 A1 November 2014

3.2 – Results

Test method	Parameter	Number of tests	Results	Compliance with the parameters
EN ISO 1716:2010	Gross heat of combustion	3	2,03 MJ/kg	Compliant
EN 13823:2010 A1 November 2014	FIGRA	3	2.4 W/s	Compliant
	THR _{loss}		0.6 MJ	Compliant
	Smoke production		≤1	Compliant
	Flaming droplets		d0	Compliant

4 – Classification

4.1 – Reference of classification

This classification has been carried in accordance to EN 13501-1:2007+A1 issued in 2013.

4.2 - The product 'Effisus Breather FR', in relation to its reaction to fire behaviour, has been classified as follows:

Fire behaviour		Smoke Production			Flaming droplets	
A2	-	s	1	,	d	0

4.3 – Field of application

This classification is valid for the following parameters:

Thickness: 0.2 mm;

Colour: Black or white;

Other properties: Fiber glass surface on both sides.

This classification is valid for the following end use applications:

Substrate: Not applicable.

Methods and means of fixing: Elfixus adhesive tapes.

Joints: No joints were used.

Other aspects of end use conditions: Waterproofing, vapour permeable membrane

5 – Limitations

All the information on this document regarding the product description and end use has been supplied by the sponsor at no responsibility by INEGI's laboratory.

INEGI's testing laboratory has played no part in sampling the product for the tests, although it holds appropriate references, supplied by the manufacturer to provide for the traceability of the tested samples.

This classification document does not represent any type of approval or certification of the product.

This classification document is valid for 5 (five) years.

Porto, December 27, 2018





Laboratory Technical Director



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Building science & innovation

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EFFISUS BREATHER FR MEMBRANE



EN 13859-2

DESCRIPTION

The Effisus Breather FR Membrane is a waterproofing and vapour permeable membrane made of a special fiberglass fleece and a water based compound, that makes it eco-friendly and completely fire resistant. The Effisus Breather FR Membrane guarantees optimum protection of façades with closed and open rainscreen cladding systems, curtain wall, cavity and masonry, leaf weatherboarding panels, tile/slate and timber frame cladding against wind, damp and driving rain.

TECHNICAL DATA

Essential characteristics	Method	Result
Thickness	EN ISO 12572	0.21 ± 0.006 mm
Length	–	93.45 m
Width	–	1.07 m
Reaction to Fire	ASTM E84 EN 13501-1:2007+A1:2009	Class A (or Class 1) A2 - s1, d0
Resistance to water penetration	EN 1928/EN 13111	W2, pass
Density of vapour flow rate, g (kg/(m ² .s))	EN ISO 12572	8.31 × 10 ⁻⁶ ± 2.81 × 10 ⁻⁷
Water vapour transmission properties (sd-value) (m)	EN ISO 12572	0.013 ± 0.001
Tensile Strength MD/XD (N/50mm)	EN 12311-1	2015 ± 0.37 / 1725 ± 0.28
Elongation at Break MD/XD (%)	EN 12311-1	4.00 ± 0.38 / 3.00 ± 0.36
Nail tear resistance MD/XD (N)	EN 12310-1	328.06 ± 32.44 / 255.42 ± 46.44
Flexibility at low temperature (-40 °C)	EN 1109	No cracks
Artificial ageing by long term exposure to the combination of UV radiation and elevated temperature and heat	Elongation* (%)	5.0 ± 0.22 / 4.00 ± 0.32
	Tensile Strength* (N/50mm)	2800 ± 205 / 2210 ± 209
	Resistance to water penetration*	W2, pass

* In accordance with Annex C of EN 13859-2 (EN 12311-1).

* In accordance with Annex C of EN 13859-2 (EN 1928/EN 13111).

OTHERS

Protects the structure against the elements during the construction phase. Protects the building against condensation and humidity, improving facade resistance to fire. It is available in white and black colour.

Version

V 1.9 – AO – 08/01/2019

INSTALLATION AND CONSUMPTION – EFFISUS BREATHER FR MEMBRANE

1. Summary

The Effisus FR Membrane is a Wall lining waterproofing membrane and highly tear resistant. The Effisus FR Membrane guarantees optimum protection for the structure behind the external cladding against wind, damp and driving rain.

2. Usage Scope

In General: Wall lining membrane.

3. Presentation and Product Details

3.1 Effisus Breather FR Membrane

Available roll width: 1.27m.

Roll length: 78.74m.

Thickness: 0.21mm.

Color: White.

Characteristics: see Table.

Essential characteristics		Method	Result
Thickness		EN ISO 12572	0.21 ± 0.006 mm
Length		-	78.74
Width		-	1.27 m
Reaction to Fire	System	ASTM E84	Class A (or Class 1)
		EN 13501-1	A2 – s1, d0
	Membrane	EN 13501-1	A1
Resistance to water penetration		EN 1928/EN 13111	W2, pass
Density of vapour flow rate, g (kg/(m ² .s))		EN ISO 12572	8.31 x 10 ⁻⁶ ± 2.81 x 10 ⁻⁷
Water vapour transmission properties (sd-value) (m)		EN ISO 12572	0.013 ± 0.001
Tensile Strength MD/XD (N/50mm)		EN 12311-1	2015 ± 0.37 / 1725 ± 0.28
Elongation at Break MD/XD (%)		EN 12311-1	4.00 ± 0.38 / 3.00 ± 0.36
Nail tear resistance MD/XD (N)		EN 12310-1	328.06 ± 32.44 / 255.42 ± 46.44
Flexibility at low temperature (- 40 °C)		EN 1109	No cracks
Artificial ageing by long term exposure to the combination of UV radiation and elevated temperature and heat		Elongation ^a (%)	5.0 ± 0.22 / 4.00 ± 0.32
		Tensile Strength ^a (N/50mm)	2800 ± 205 / 2210 ± 209
		Resistance to water penetration ^b	W2, pass

^a in accordance with Annex C of EN 13859-2 (EN 12311-1).

^b in accordance with Annex C of EN 13859-2 (EN 1928/EN 13111).

4. Accessories

4.1 Adhesive Tapes

Adhesive tapes for moisture proof sealing of Effisus Breather FR Membranes overlapping.

The tapes are suitable for bonding Effisus Breather FR Membrane to smooth, non porous and porous substrates.

4.1.1 Effisus 2Bond DS Tape (sealing membrane edges)

Pure advanced microsealant with removable siliconized release liner on each side. Designed to perimetral seal the Effisus Breather FR on building perimeter and connections to porous surfaces creating a tight, permanent and waterproof membrane.

Suitable for fixing Effisus Breather FR to a wide range of surfaces including concrete, masonry, EPDM, TPE, most PVC, coated and non-coated aluminium and metal surfaces, polyethylene and polypropylene membranes, wood, CSPE/Hypalon, CPE, SBS, APP modified, asphalt BURs, coal tar BURs, tiles, PE/PA/PP, etc.

Quick and easy to apply using the Effisus Setup EC Cleaner or a non residue cleaner on smooth surfaces.

Roll width: 25mm.

Roll length: 15.25m.

Colour: Grey.

4.1.2 Effisus 2Adjoin DF Tape (Fixing to the structure / Membrane Overlaps)

Flexible multi-purpose adhesive tape for airtight bonds.

A double sided airtight and moisture resistant sealing tape.

Suitable for sealing overlaps between Effisus Breather FR Membrane and fixing to aluminum and metal studs and most of the silicate calcium boards.

Suitable for windtight and moisture proof sealing of external membranes.

With a release paper.

Roll width: 25mm.

Roll length: 20m.

Colour: Colourless with a polypropylene reinforcement.

4.2 Accessories: Others

4.2.1. Effisus Coat Primer NP

Primer to prepare surfaces before the bonding of the Effisus Breather FR Membrane.

In porous, damp or when applying with temperatures within 5 °C e -10 °C, use this primer for surface treatment before the use of Effisus 2Bond DS Tape.

4.2.2 Effisus Setup PR Cleaner

Before applying the adhesive clean smooth surfaces.

5. Production, marketing and technical solution

Up-Way Systems is the Effisus Breather FR Membranes and accessories supplier.

Under industrial control, laboratory testing of the manufactured goods are performed and continuously recorded. This control is subject to external periodic inspection.

6. Installation Instructions

6.1 General Guidelines

It is the end user's responsibility to ensure the quality of the installation, by following the installation instructions in this document and by periodically checking the installed materials.
Upon request, Up-Way Systems is available to train working staff.

6.1.1 Storage

The Effisus Breather FR Membrane rolls and system accessories should be stored on hard, clean and dedicated stand, in a place that can protect them from extreme weather conditions, and be kept within temperatures of 5°C and 20°C.

6.1.2 Installation conditions

Effisus Breather FR Membrane carefully transported and applied, avoiding substrate sharp edges and risks of tearing. The Effisus Breather FR Membrane should be applied using the accessories recommended in this document. The bonding should be made on dry, ungreased, clean and dust free supports.

In case of rainfall (rain, snow, intense fog and if any risk of condensation is present), the adhesive setting must be stopped.

6.2 Effisus Breather FR Membrane Fixing

6.2.1 Effisus 2Bond DS

Effisus Breather FR Membrane should be sealed continually on all perimeter (building edges/perimeter) to the substrate using the Effisus 2Bond DS Tape.

Shortly after the membrane has been applied with the Effisus 2Bond DS tape, it should be mechanically fixed.

If there is any risk of sliding or stress introduced on the membrane, this should be mechanically fixed at membrane edges.

6.2.2 Effisus 2Adjoin DF

Effisus Breather FR Membrane should be secured to the insulation or calcium board using the Effisus 2Adjoin DF Tape, with a maximum spacing between securing lines of approx. 0.5m.

The membrane should always be mechanically fixed at the earliest to avoid membrane tear.

Note: The membrane perforations should be sealed as 6.4.1.

6.3 Overlapping Joints

Upper layers should always overlap lower layers to facilitate the easier shedding of rain and allow the regular water flow. Horizontal joints should overlap by 100mm minimum.

Vertical joints should overlap by 150mm minimum and be staggered or offset wherever possible (see Figure 1).

Joints should be sealed with 2 bands or strips of Effisus 2Adjoin DF Tape, width 25mm

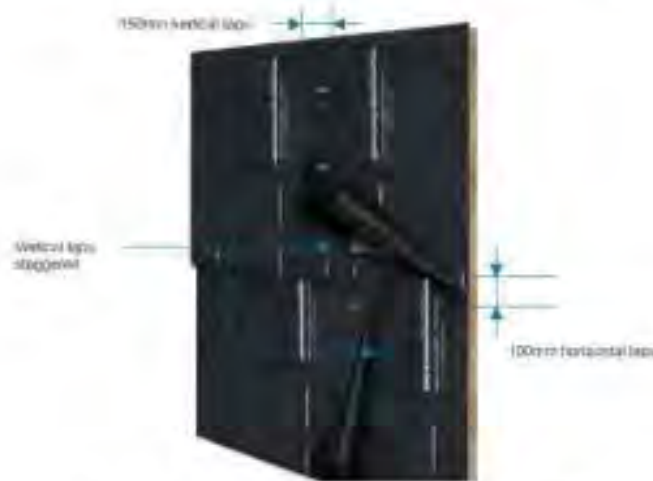


Fig. 2 – Effisus Breather FR Membrane – Overlapping Joints

6.4 Other Details

6.4.1 Perforations on Effisus Breather FR

Any nail / screw perforation should be done with Effisus 2Bond DS Tape. Depending of the diameter and length, Effisus recommends one or two patches of Effisus 2Bond DS Tape.

To seal cables, pipes and other perforations, Effisus has a variety of solutions that can be used to seal it, such as standards solutions to uniform and common dimensions. For projects with high requirements or unusual shapes, Effisus developed customized solutions capable to absorb the most difficult perforations in any type of project.

Note: For more information about this Effisus Solutions please contact Effisus Technical Department.

6.5 Bonds Effisus Vapour FR – Effisus Breather FR Membranes

The bonding between Effisus Vapour FR with Effisus Breather FR Membrane could be done using Effisus 2Bond DS Tape or Effisus Bonding KF+P Adhesive.

6.6 Bond between Effisus Breather FR Membrane – Effisus Ecofacade Membrane

The bonding between an Effisus Ecofacade Breather FR Membrane and an Effisus Ecofacade Membrane could be done using Effisus 2Bond DS Tape or Effisus Bonding KF+P Adhesive.

7. Repairs

Any repairing should be made using Effisus Breather FR Membranes and system accessories, under approval from Up-Way Systems.

8. Compatibility

The Effisus Breather FR Membranes are compatible with the materials using in classical construction, however, if in doubt perform a compatibility test and consult with Up-Way Systems.

Any time that the Effisus Breather FR Membranes are to be used in aggressive atmospheres (ateliers, laboratories, ...) Up-Way Systems must be consulted.

9. Performance

Accessories Consumption				
Product	Colour	Delivery	Consumption	Storage
Effisus Coat NP Primer	Black	4,5kg Can	At an application width of 5cm: 10-15g/m, depending on substrate	Cool, dry, frost-proof, protect from direct sunlight. Keep container tightly closed.
Effisus Setup PR Cleaner	Clear	1l Can 5l Can	35m ² /litre	Cool, dry, frost-proof, protect from direct sunlight. Keep container tightly closed.

10. Test Results and Certification

The technical details are presented in this document.

The Effisus Breather FR membranes has CE certification and DoP based on EN 13859-2, Flexible sheets for waterproofing. Definitions and characteristics of underlays. Underlays for walls (EN 1928, EN 13111, EN ISO 12572, EN 12311-1, EN 12310-1, EN 1109 and artificial ageing).

The Effisus Breather FR obtained class A2 – s1, d0 as a system and Class A1 stand alone on Test Standard EN13501 and Class A (or class 1) on ASTM E84.

For further information contact Up-Way Systems.

Version

V 1.8 – PM – 09/03/2021

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Technical Data



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Nominal density		1200kg/m ³
Bending Strength (Modulus of Rupture)		8.8Mpa
Modulus of Elasticity (MoE)		4.0Mpa
Thermal Conductivity		0.12W/mk
Moisture Content		≤9%
Moisture Movement (EMC to Saturated)		0.06%
Fire Rating		BS 476 Part 4 Non-Combustible, A1 Classification
Biological Resistance		Highly resistant
Frost resistance		4 star
Surface Condition	Front face Back face	Smooth Textured
Durability (life expectancy – minimum)		30 years
Standard board size		2400 x 1200mm, 1200 x 1200mm, (9mm & 12mm)

Thickness (mm)	6	9	12
Weight (kg/m ²)	7.3	11.1	14.6
Sound insulation (dB) ¹	24	29	31

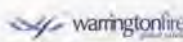
Dimensional Tolerance
Length
Width
Thickness

±3mm
±2mm
±0.5mm

Imperial and other sizes are available on request.
1200 x 1200 x 9mm & 1200 x 1200 x 12mm available.

Product Testing and Certification
Y-wall is tested to BS 476 Part 4.
Y-wall conforms to BS EN12467.
Y-wall tested by Warrington Fire research.
60 & 90 mins external through wall solution.
Fire Rating A1 Classification.

Recommended Fixing
4.8mm x 38mm wing tip self drilling fixing.



Premier Inn, Walsall Waterfront:
9mm Y-wall is used as the fire rated sheathing board, total quantity used 1,800m².

Call

or email info@rcmltd.biz

Roofing and Cladding Materials Limited

Unit 27 Rosevale Road
Parkhouse Industrial Estate West
Newcastle under Lyme
Staffordshire ST5 7EF

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website: www.rcmltd.biz



Agrément Certificate

14/5109

Product Sheet 1

CALCIUM SILICATE SHEATHING BOARD

Y-WALL

This Agrément Certificate Product Sheet⁽¹⁾ relates to Y-wall⁽²⁾, for use externally as a structural and non-structural sheathing board behind facade/rainscreen cladding applied to lightweight steel and timber frames, and also as an internal lining in domestic and non-domestic buildings.

(1) Hereinafter referred to as 'Certificate'.

(2) Y-wall is a registered trademark.

CERTIFICATION INCLUDES:

- factors relating to compliance with Building Regulations where applicable
- factors relating to additional non-regulatory information where applicable
- independently verified technical specification
- assessment criteria and technical investigations
- design considerations
- installation guidance
- regular surveillance of production
- formal three-yearly review.



KEY FACTORS ASSESSED

Strength and stability — the board has sufficient strength to resist the loads likely to be encountered in service and can contribute to the racking resistance of the structure (see section 6).

Behaviour in relation to fire — the board has a reaction to fire classification of A1 in accordance with BS EN 13501-1 : 2007 (see section 7).

Resistance to moisture — the board has adequate resistance to moisture (see section 9).

Durability — the board will have a life equal to that of the building in which it is installed (see section 11).



The BBA has awarded this Certificate to the company named above for the product described herein. This product has been assessed by the BBA as being fit for its intended use provided it is installed, used and maintained as set out in this Certificate.

On behalf of the British Board of Agrément

Date of Second issue: 5 March 2021

Originally certificated on 10 April 2014

Chief Executive Officer

The BBA is a UKAS accredited certification body – Number 113.

The schedule of the current scope of accreditation for product certification is available in pdf format via the UKAS link on the BBA website at www.bbacerts.co.uk
Readers MUST check the validity and latest issue number of this Agrément Certificate by either referring to the BBA website or contacting the BBA directly.

Any photographs are for illustrative purposes only, do not constitute advice and should not be relied upon.

British Board of Agrément
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Watford
Herts WD25 9BA

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clientservices@bbacerts.co.uk
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Regulations

In the opinion of the BBA, Y-wall, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements of the following Building Regulations (the presence of a UK map indicates that the subject is related to the Building Regulations in the region or regions of the UK depicted):



The Building Regulations 2010 (England and Wales) (as amended)

Requirement:	A1	Loading
Comment:		The board is acceptable. See section 6 of this Certificate.
Requirement:	B2(1)(2)	Internal fire spread (linings)
Requirement:	B3(2)(3)(4)	External fire spread (structure)
Comment:		The board can contribute to satisfying these Requirements. See sections 7.1 to 7.3 of this Certificate.
Regulation:	7(1)	Materials and workmanship
Comment:		The board is acceptable. See section 11 and the <i>Installation</i> part of this Certificate.
Regulation:	7(2)	Materials and workmanship
Comment:		The board is unrestricted by this Regulation; however, its use is restricted on timber-framed walls. See sections 7.1 to 7.3 of this Certificate.



The Building (Scotland) Regulations 2004 (as amended)

Regulation:	8(1)	Durability, workmanship and fitness of materials
Comment:		The use of the board satisfies the requirements of this Regulation. See section 11 and the <i>Installation</i> part of this Certificate.
Regulation:	9	Building standards – Construction
Standard	1.1(a)(b)	Structure
		The board is acceptable, with reference to clause 1.1.1 ⁽¹⁾⁽²⁾ . See section 6 of this Certificate.
Standard:	2.4	Cavities
Comment:		The board can contribute to satisfying this Standard with reference to clauses 2.4.2 ⁽¹⁾⁽²⁾ and 2.4.4 ⁽¹⁾ . See sections 7.1 to 7.3 of this Certificate.
Standard:	2.5	Internal linings
Comment:		The board will contribute to an external wall satisfying the requirements of this Standard, with reference to clauses 2.2.1 ⁽¹⁾⁽²⁾ , 2.2.2 ⁽¹⁾ , 2.2.3 ⁽¹⁾ , 2.2.4 ⁽¹⁾ , 2.2.6 ⁽¹⁾ , 2.2.8 ⁽¹⁾ , 2.3.2 ⁽¹⁾ and 2.5.1 ⁽¹⁾ . See sections 7.1 to 7.3 of this Certificate.
Standard:	7.1(a)	Statement of sustainability
Comment:		The board can contribute to satisfying the relevant requirements of Regulation 9, Standards 1 to 6, and therefore will contribute to a construction meeting a bronze level of sustainability as defined in this Standard.
Regulation:	12	Building standards applicable to conversions
Comment:		All comments given for this product under Regulation 9, Standards 1 to 6, also apply to this Regulation, with reference to clause 0.12.1 ⁽¹⁾⁽²⁾ and Schedule 6 ⁽¹⁾⁽²⁾ .

(1) Technical Handbook (Domestic).

(2) Technical Handbook (Non-Domestic).



The Building Regulations (Northern Ireland) 2012 (as amended)

Regulation:	23(a)(i)(iii)(b)(i)	Fitness of materials and workmanship
Comment:		The board is acceptable. See section 11 and the <i>Installation</i> part of this Certificate.
Regulation:	30	Stability
Comment:		The board is acceptable. See section 6 of this Certificate.
Regulation:	34	Internal fire spread – linings
Regulation:	35(4)	Internal fire spread – structure
Comment:		The board can contribute to satisfying these Regulations. See sections 7.1 to 7.3 of this Certificate.

Construction (Design and Management) Regulations 2015

Construction (Design and Management) Regulations (Northern Ireland) 2016

Information in this Certificate may assist the client, designer (including Principal Designer) and contractor (including Principal Contractor) to address their obligations under these Regulations.

See sections: 3 *Delivery and site handling* (3.1) and 12 *General* (12.1) of this Certificate.

Additional Information

NHBC Standards 2021

In the opinion of the BBA, Y-wall, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements in relation to *NHBC Standards*, Chapters 6.2 *External timber-framed walls*, 6.3 *Internal walls*, 6.9 *Curtain walling and cladding*, 6.10 *Light steel framed walls and floors* and 8.2 *Wall and ceiling finishes*.

CE marking

The Certificate holder has taken the responsibility of CE marking the product in accordance with harmonised European Standard BS EN 12467 : 2012.

Technical Specification

1 Description

1.1 Y-wall is a calcium silicate sheathing board manufactured from a mixture of Portland cements, lime, calcium silicate, mica and cellulose, which satisfies the requirement of Category A, Class 2 boards to BS EN 12467 : 2012.

1.2 The board is available with the following nominal dimensions:

Thickness (± 0.5 mm)	9, 12, 15
Length (± 3 mm)	2400, 2800, 3050
Width (± 2 mm)	1200
Weight ($\text{kg}\cdot\text{m}^{-2}$)	11.1, 14.6, 18.2.

1.3 Ancillary items used in conjunction with the board but outside the scope of this Certificate:

- Zinc coated wing tip screws with minimum 500 hours salt-spray resistance, 4.80 mm shank diameter, 38 mm in length, with a 10 mm diameter countersunk head screw, used to attach the board to steel frame substrate at 300 mm centres to board edges and intermediate support

- Ceramic coating screws with minimum 500 hours salt-spray resistance, 4.20 mm shank diameter, 42 mm in length, with a 10 mm diameter countersunk head screw, used to attach the board to timber frame substrate at 300 mm centres on board edges and intermediate support
- Fasteners (for use with timber frame) — 50 mm long nails with 2.8 mm diameter smooth shaft
- For marine environments consult Certificate holder.

2 Manufacture

2.1 The Y-wall board is manufactured from wet sheet, prior to a process of autoclave and surface finishing.

2.2 As part of the assessment and ongoing surveillance of product quality, the BBA has:

- agreed with the manufacturer the quality control procedures and product testing to be undertaken
- assessed and agreed the quality control operated over batches of incoming materials
- monitored the production process and verified that it is in accordance with the documented process
- evaluated the process for management of nonconformities
- checked that equipment has been properly tested and calibrated
- undertaken to carry out the above measures on a regular basis through a surveillance process, to verify that the specifications and quality control operated by the manufacturer are being maintained.

3 Delivery and site handling

3.1 Y-wall boards are stacked on timber pallets. Each pack contains a label incorporating the manufacturer's name, product name, thickness, width, length, batch number, number of boards per pallet, pallet weight, recommended storage and handling method.

3.2 The boards must be stored in a ventilated and dry environment on a flat, level surface protected from contamination. To avoid excessive flexing of the boards, long edges must be supported when lifting and handling. The Certificate holder's instructions on site handling and storage must be followed.

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on Y-wall.

Design Considerations

4 General

4.1 Y-wall is suitable for use as an external structural or non-structural sheathing board or as an internal lining board applied to timber frame and lightweight steel frame walls with stud centres at maximum 600 mm.

4.2 The board satisfies Category A⁽¹⁾ Class 2 requirements in accordance with BS EN 12467 : 2012.

(1) Sheets which are intended for applications where they may be subjected to heat, high moisture and severe frost.

4.3 The frame to which the board is fixed must be structurally sound, and designed and constructed in accordance with the requirements of the relevant national Building Regulations and Standards, namely:

- timber-frame — in accordance with BS EN 1995-1-1 : 2004 and its UK National Annex, and preservative treated in accordance with BS EN 351-1 : 2007
- steel-frame — in accordance with BS EN 1993-1-1 : 2005 and BS EN 1993-1-3 : 2006 and their UK National Annexes.

4.4 Any external finishes/cladding must be such that the cavity behind satisfies the minimum cavity width required by *NHBC Standards 2021*, Chapter 6.9.

5 Practicability of installation

The board is designed to be installed by a competent builder, or a contractor, experienced with this type of product.

6 Strength and stability



6.1 The frame to which the board is fixed must be structurally sound and constructed in accordance with the requirements of the relevant national Building Regulations and Standards.

6.2 For non-structural sheathing applications, the designer must ensure that the steel frame/timber frame has adequate strength to resist all lateral, and any other, loads on their own. No contribution may be assumed from the boards in this regard. The structure, with or without Y-wall board, must be able to take the full wind actions and racking loads and be capable of sustaining the weight of the boards. The adequacy of the structural frame is outside the scope of this Certificate and must be verified by a suitably qualified and experienced individual.

6.3 For structural sheathing applications, the performance characteristics of the Y-wall boards as specified in sections 6.5 and 6.6 may be used for design, where the board is contributing to the wind resistance of the structure. The adequacy of the supporting structural frame is outside the scope of this Certificate and must be verified by a suitably qualified and experienced individual. Wind actions should be calculated in accordance with BS EN 1991-1-4 : 2005. The higher pressure coefficients applicable to corners of the building must be used.

6.4 A suitably qualified and experienced individual must check the design and method of installation of the boards.

6.5 The design pull-through value of Y-wall board, calculated by applying a safety factor of 3.0 to the mean failure pull-through values (determined by tests in accordance with BS EN 1383 : 2016) for the 4.2 mm diameter shaft, 10.4 mm diameter head, length 32 mm self-driving screws⁽¹⁾, is given in Table 1.

Table 1 Pull-through values⁽¹⁾ – timber frame

Mean failure value (N)	Design value (N)
976	325

(1) For fasteners other than those specified, the Certificate holder's advice must be sought.

6.6 When evaluated for racking resistance in accordance with BS EN 1995-1-1 : 2004 (following the racking strength and stiffness test⁽¹⁾ in accordance with BS EN 594 : 2011), a timber-frame wall panel⁽²⁾ with a 9 mm thick Y-wall board fixed with nails⁽³⁾ to the face of the timber frame at 150 mm centres to the perimeter and at 300 mm centres to the internal studs, was found to have a characteristic racking resistance of 1.0 kN·m⁻¹ with no vertical load applied, and 2.17 kN·m⁻¹ with 5 kN vertical load applied, to each stud.

(1) Racking test carried out on panel with timber-frame of overall dimensions 2400 by 2400 mm.

(2) Studs: timber grade C16, minimum size 38 by 89 mm and spaced at a maximum of 600 mm.

(3) Nails: shaft diameter 2.8 mm, and 50 mm length.

7 Behaviour in relation to fire



7.1 The reaction to fire classification for the boards is A1 in accordance with BS EN 13501-1 : 2007.

7.2 This classification may not be achieved by a system utilising the board in other constructions in combination with other materials, such as insulation, and the performance of such constructions should be confirmed in accordance with the requirements of the documents supporting the national Building Regulations.

7.3 The board is classified as non-combustible and is not subject to any restriction on building height or proximity to boundaries. See also sections 7.1 and 7.2, above.

7.4 Designers should refer to the relevant national Building Regulations and guidance for detailed conditions of use, particularly in respect of requirements for fire resistance, cavity barriers, service penetrations and combustibility limitations for other materials and components used in the overall wall construction (for example, thermal insulation and cladding).

7.5 Where the product is incorporated in a wall construction where fire resistance is required by the documents supporting the national Building Regulations, the fire resistance should be confirmed by tests or assessments by a suitably accredited laboratory.

8 Thermal insulation

The design thermal conductivity (λ value) of Y-wall board given in BS EN 12524 : 2000 is $0.23 \text{ W}\cdot\text{m}^{-1}\cdot\text{K}^{-1}$, and as such will not have a significant effect on the thermal transmittance (U value) of the wall construction.

9 Resistance to moisture

9.1 The design water vapour resistivity of Y-wall board can be taken as $164 \text{ MN s}\cdot\text{g}^{-1}\cdot\text{m}^{-1}$.

9.2 Walls must have suitable weather protection on the outside, and a vented cavity. The product should be treated as conventional sheathing board with regard to detailing and damp-proofing at openings, eaves and sole plate, and the fixing of wall ties. Where required by design, the addition of a breather membrane must be in accordance with BS 5250 : 2011.

9.3 The outer weatherproofing should have adequate resistance to wind-driven rain, particularly in regions classified as severe exposure.

10 Maintenance and repair

10.1 As the boards have suitable durability, will normally be confined within the building structure and, in most cases, will be covered with finishes, maintenance is not required.

10.2 Under normal conditions of use, the boards are unlikely to suffer damage but, if damage does occur, repairs can be carried out in accordance with the Certificate holder's instructions.

11 Durability



11.1 The durability of the board is satisfactory. Provided the board is used in accordance with this Certificate and the Certificate holder's instructions, and is fixed to satisfactory, stable and durable structures by fully trained operatives, it should have a service life equal to that of the structure in which it is installed.

11.2 Care should be taken when designing, detailing and constructing buildings to ensure that moisture does not accumulate within the board.

Installation

12 General

12.1 Y-Wall board can be cut with a fine-tooth hand saw or power saw, ensuring suitable dust-control measures are taken (eg protective safety glasses, gloves and respiratory masks) and observing all necessary health and safety regulations. Damaged boards must not be used.

12.2 The level of supervision during installation of the board and the associated structure, must be sufficient to ensure the quality of workmanship.

12.3 Framing grade timber studs or galvanized steel framework should be provided at a maximum 600 mm centres for single-layer partitions.

12.4 The frame to which the board is fixed must be structurally sound and constructed in accordance with the requirements of the relevant national Building Regulations and Standards (see sections 4.3 and 4.4).

12.5 Fasteners should be a minimum of 12 mm from board edges, and spaced at a maximum of 300 mm. The screws must not be over-tightened.

13 Tests

13.1 Tests were carried out and the results assessed to determine:

- modulus of rupture
- apparent density
- dimensional tolerance
- mechanical characteristics – bending strength (mor)
- water impermeability
- resistance to freeze/thaw cycling
- resistance to heat/rain cycling
- resistance to warm water soak
- resistance to soak/dry cycling
- racking strength on timber
- reaction to fire classification
- pull through strength of fixings.

13.2 A test for water vapour transmission was carried out in accordance with BS EN ISO 12572 : 2001.

13.3 A fire test for non combustibility was carried out to BS EN ISO 1182 : 2010, and heat of combustion to BS EN ISO 1716 : 2010.

13.4 A racking test for board installed onto timber frame panels was carried out to BS EN 594 : 2011.

14 Investigations

14.1 The manufacturing process was evaluated, including the methods adopted for quality control, and details were obtained of the quality and composition of materials used.

14.2 An assessment was made of test reports relating to the reaction to fire classification of the product to BS EN 13501-1 : 2007.

14.3 An assessment was made on durability requirements for Category A boards according to BS EN 12467 : 2012, for:

- density
- dimensional variation
- resistance to freeze/thaw
- resistance to warm water soak
- resistance to soak/dry cycling
- resistance to heat/rain cycling
- water impermeability
- mechanical characteristics – bending strength (MOR).

14.4 An assessment was made of data relating to:

- structural racking resistance.

14.5 An assessment was made of the practicability of installation.

Bibliography

BS 5250 : 2011 + A1 : 2016 *Code of practice for control of condensation in buildings*

BS EN 351-1 : 2007 *Durability of wood and wood-based products — Preservative-treated solid wood — Classification of preservative penetration and retention*

BS EN 594 : 2011 *Timber structures — Test methods — Racking strength and stiffness of timber frame wall panels*

BS EN 1383 : 2016 *Timber structures — Test methods — Pull-through resistance of timber fasteners*

BS EN 1991-1-4 : 2005 + A1 : 2010 *Eurocode 1 : Actions on structures — General actions — Wind actions*

BS EN 1993-1-1 : 2005 + A1 : 2014 *Eurocode 3 : Design of steel structures — General rules and rules for buildings*
NA + A1 : 2014 to BS EN 1993-1-1 : 2005 + A1 : 2014 UK National Annex to *Eurocode 3 : Design of steel structures — General rules and rules for buildings*

BS EN 1993-1-3 : 2006 + A1 : 2014 *Eurocode 3 — Design of steel structures — General rules — Supplementary rules for cold-formed members and sheeting*

NA + A1 : 2014 to BS EN 1993-1-3 : 2006 + A1 : 2014 UK National Annex to *Eurocode 3 — Design of steel structures — General rules — Supplementary rules for cold-formed members and sheeting*

BS EN 1995-1-1 : 2004 + A2 : 2014 *Eurocode 5 : Design of timber structures — General*
NA to BS EN 1995-1-1 : 2004 + A1 : 2014 UK National Annex to *Eurocode 5 — Design of timber structures — General — Common rules and rules for buildings*

BS EN 12467 : 2012 + A2 : 2018 *Fibre-cement flat sheets — Product specification and test methods*

BS EN 12524 : 2000 *Building materials and products — Hygrothermal properties — Tabulated design values*

BS EN 13501-1 : 2007 *Fire classification of construction products and building elements — Classification using test data from reaction to fire tests*

BS EN ISO 1182 : 2010 *Reaction to fire tests for products — Non-combustibility test*

BS EN ISO 1716 : 2010 *Reaction to fire tests for building products — Determination of the gross heat of combustion (calorific value)*

BS EN ISO 12572 : 2001 *Hygrothermal performance of building materials and products — Determination of water vapour transmission properties*

15 Conditions

15.1 This Certificate:

- relates only to the product/system that is named and described on the front page
- is issued only to the company, firm, organisation or person named on the front page – no other company, firm, organisation or person may hold claim that this Certificate has been issued to them
- is valid only within the UK
- has to be read, considered and used as a whole document – it may be misleading and will be incomplete to be selective
- is copyright of the BBA
- is subject to English Law.

15.2 Publications, documents, specifications, legislation, regulations, standards and the like referenced in this Certificate are those that were current and/or deemed relevant by the BBA at the date of issue or reissue of this Certificate.

15.3 This Certificate will remain valid for an unlimited period provided that the product/system and its manufacture and/or fabrication, including all related and relevant parts and processes thereof:

- are maintained at or above the levels which have been assessed and found to be satisfactory by the BBA
- continue to be checked as and when deemed appropriate by the BBA under arrangements that it will determine
- are reviewed by the BBA as and when it considers appropriate.

15.4 The BBA has used due skill, care and diligence in preparing this Certificate, but no warranty is provided.

15.5 In issuing this Certificate the BBA is not responsible and is excluded from any liability to any company, firm, organisation or person, for any matters arising directly or indirectly from:

- the presence or absence of any patent, intellectual property or similar rights subsisting in the product/system or any other product/system
- the right of the Certificate holder to manufacture, supply, install, maintain or market the product/system
- actual installations of the product/system, including their nature, design, methods, performance, workmanship and maintenance
- any works and constructions in which the product/system is installed, including their nature, design, methods, performance, workmanship and maintenance
- any loss or damage, including personal injury, howsoever caused by the product/system, including its manufacture, supply, installation, use, maintenance and removal
- any claims by the manufacturer relating to CE marking.

15.6 Any information relating to the manufacture, supply, installation, use, maintenance and removal of this product/system which is contained or referred to in this Certificate is the minimum required to be met when the product/system is manufactured, supplied, installed, used, maintained and removed. It does not purport in any way to restate the requirements of the Health and Safety at Work etc. Act 1974, or of any other statutory, common law or other duty which may exist at the date of issue or reissue of this Certificate; nor is conformity with such information to be taken as satisfying the requirements of the 1974 Act or of any statutory, common law or other duty of care.



CORTEX®
EPDM membrane system

SAFETY DATA SHEET

Non-Flammable CORTEX Primer

According to Regulation (EC) No 1907/2006, Annex II, as amended by Regulation (EU) No 453/2010

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name Non-Flammable CORTEX Primer

1.2. Relevant identified uses of the substance or mixture and uses advised against

Identified uses Adhesive.

Uses advised against No specific uses advised against are identified.

1.3. Details of the supplier of the safety data sheet

Supplier OBEX PROTECTION LTD
SEVERN HOUSE
BROMYARD ROAD
CROWN EAST
WORCESTER
WR2 5TR

E: sales@obexuk.com

1.4. Emergency telephone number

Emergency telephone +44 01905 337800 (9am – 5pm Mon – Fri)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Physical hazards Not Classified

Health hazards Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 Carc. 2 - H351 STOT SE 3 - H336

Environmental hazards Not Classified

Human health

Vapours and spray/mists in high concentrations are narcotic. Symptoms following overexposure may include the following: Headache, Fatigue, Dizziness, Nausea, vomiting.

2.2. Label elements

Pictogram



Signal word

Warning

Hazard statements	H315 Causes skin irritation. H319 Causes serious eye irritation. H336 May cause drowsiness or dizziness. H351 Suspected of causing cancer.
Precautionary statements	P260 Do not breathe vapours. P280 Wear protective gloves/ protective clothing/ eye protection/ face protection. P281 Use personal protective equipment as required. P284 [In case of inadequate ventilation] wear respiratory protection. P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P313 Get medical advice/ attention. P501 Dispose of contents/ container in accordance with national regulations.
Contains	DICHLOROMETHANE

2.3. Other hazards

SECTION 3: Composition/information on ingredients

3.2. Mixtures

DICHLOROMETHANE		60-100%
CAS number: 75-09-2	EC number: 200-838-9	REACH registration number: 01-2119480404-41-0007
Classification Acute Tox. 4 - H302 Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 Carc. 2 - H351 STOT SE 3 - H336		

ZINCDIBENZYLDITHIOCARBAMATE		<1%
CAS number: 14726-36-4	REACH registration number: 01-2119543708-31-0002	
M factor (Acute) = 1	M factor (Chronic) = 1	
Classification Aquatic Acute 1 - H400 Aquatic Chronic 1 - H410		

The full text for all hazard statements is displayed in Section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information	Remove affected person from source of contamination.
Inhalation	Move affected person to fresh air at once.
Ingestion	DO NOT induce vomiting. Get medical attention immediately.
Skin contact	Remove contaminated clothing immediately and wash skin with soap and water.
Eye contact	Rinse immediately with plenty of water. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 15 minutes. Get medical attention if irritation persists after washing. Show this Safety Data Sheet to the medical personnel.

4.2. Most important symptoms and effects, both acute and delayed

General information	The severity of the symptoms described will vary dependent on the concentration and the length of exposure.
Inhalation	Vapours may cause drowsiness and dizziness. Irritation of nose, throat and airway.
Ingestion	May cause chemical burns in mouth and throat.
Skin contact	Prolonged skin contact may cause redness and irritation.

Eye contact Severe irritation, burning and tearing.

4.3. Indication of any immediate medical attention and special treatment needed

Notes for the doctor No specific recommendations. If in doubt, get medical attention promptly.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media Extinguish with foam, carbon dioxide, dry powder or water fog.

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture

Specific hazards The product is non-combustible. Toxic gases or vapours. No unusual fire or explosion hazards noted.

Hazardous combustion products Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours. Oxides of carbon. Oxides of nitrogen.

5.3. Advice for firefighters

Protective actions during firefighting Containers close to fire should be removed or cooled with water. Do not allow water to contact any leaked material.

Special protective equipment for firefighters Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions Wear protective clothing as described in Section 8 of this safety data sheet.

6.2. Environmental precautions

Environmental precautions Do not discharge into drains or watercourses or onto the ground.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up Eliminate all sources of ignition. No smoking, sparks, flames or other sources of ignition near spillage. Provide adequate ventilation. Absorb spillage with non-combustible, absorbent material.

6.4. Reference to other sections

Reference to other sections Wear protective clothing as described in Section 8 of this safety data sheet.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions Eliminate all sources of ignition. Vapours may accumulate on the floor and in low-lying areas. Static electricity and formation of sparks must be prevented. Avoid inhalation of vapours and spray/mists.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions Keep away from heat, sparks and open flame. Store in closed original container at temperatures between 5°C and 25°C.

Storage class Chemical storage.

7.3. Specific end use(s)

Specific end use(s) The identified uses for this product are detailed in Section 1.2.

SECTION 8: Exposure Controls/personal protection

8.1. Control parameters

Occupational exposure limits

DICHLOROMETHANE

Long-term exposure limit (8-hour TWA): WEL 100 ppm(Sk) 350 mg/m³(Sk)

Short-term exposure limit (15-minute): WEL 300 ppm(Sk) 1060 mg/m³(Sk)

WEL = Workplace Exposure Limit

Ingredient comments WEL = Workplace Exposure Limits

DICHLOROMETHANE (CAS: 75-09-2)

Ingredient comments	WEL = Workplace Exposure Limits
DNEL	Consumer - Dermal; Short term systemic effects: 353 mg/m ³ Workers - Dermal; Short term systemic effects: 706 mg/m ³
PNEC	- Fresh water; 0.54 mg/l - Sediment (Freshwater); 4.47 mg/kg - Intermittent release; 0.27 mg/l - Sediment (Marinewater); 1.61 mg/kg - Marine water; 0.194 mg/l - STP; 26 mg/l - Soil; 0.583 mg/kg

8.2. Exposure controls

Protective equipment



Appropriate engineering controls

Provide adequate ventilation. Avoid inhalation of vapours. Observe any occupational exposure limits for the product or ingredients.

Eye/face protection

The following protection should be worn: Chemical splash goggles or face shield.

Hand protection

It is recommended that gloves are made of the following material: Nitrile rubber. It should be noted that liquid may penetrate the gloves. Frequent changes are recommended. For exposure up to 8 hours, wear gloves made of the following material: Viton rubber (fluoro rubber).

Other skin and body protection

Wear suitable protective clothing as protection against splashing or contamination. Wear apron or protective clothing in case of contact.

Hygiene measures

Use engineering controls to reduce air contamination to permissible exposure level. Wash hands after handling.

Respiratory protection

If ventilation is inadequate, suitable respiratory protection must be worn. In confined or poorly-ventilated spaces, a supplied-air respirator must be worn. Wear a respirator fitted with the following cartridge: Gas filter, type AX.

Environmental exposure controls

Keep container tightly sealed when not in use.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Appearance	Coloured liquid.
Colour	Various colours.
Odour	Characteristic.
Odour threshold	Not available.
pH	Not available.
Melting point	Not available.
Initial boiling point and range	39-40°C @
Evaporation rate	Not available.
Evaporation factor	Not available.
Flammability (solid, gas)	Not available.
Other flammability	Not available.
Vapour pressure	Not available.
Vapour density	Not available.
Relative density	1.12 @ 20°C
Bulk density	Not available.
Solubility(ies)	Insoluble in water.
Partition coefficient	Not available.
Decomposition Temperature	Not available.
Viscosity	Kinematic viscosity > 20.5 mm ² /s.
Explosive properties	Not available.
Explosive under the influence of a flame	Not considered to be explosive.
Oxidising properties	Not available.
Comments	Information given is applicable to the product as supplied.

9.2. Other information

Other information	No information required.
Refractive index	Not available.
Particle size	Not available.
Molecular weight	Not available.
Volatility	Not available.
Saturation concentration	Not available.
Critical temperature	Not available.

SECTION 10: Stability and reactivity**10.1. Reactivity**

Reactivity	There are no known reactivity hazards associated with this product.
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10.2. Chemical stability

Stability Stable at normal ambient temperatures and when used as recommended.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions Not applicable. Not relevant.

10.4. Conditions to avoid

Conditions to avoid Avoid freezing.

10.5. Incompatible materials

Materials to avoid Flammable/combustible materials. Strong acids. Strong alkalis.

10.6. Hazardous decomposition products

Hazardous decomposition products Does not decompose when used and stored as recommended.

SECTION 11: Toxicological information**11.1. Information on toxicological effects****Toxicological information on ingredients.****DICHLOROMETHANE****Acute toxicity - oral**

Acute toxicity oral (LD₅₀ mg/kg) 2,000.0

Species Rat

Acute toxicity - inhalation

Acute toxicity inhalation (LC₅₀ vapours mg/l) 86.0

Species Rat

ATE inhalation (vapours mg/l) 86.0

SECTION 12: Ecological Information**12.1. Toxicity****Ecological information on ingredients.****DICHLOROMETHANE**

Acute toxicity - fish LC50, 96 hours, 96 hours: > 93 mg/l, Pimephales promelas (Fat-head Minnow)

Acute toxicity - aquatic invertebrates EC₅₀, 48 hours: 27 mg/l, Daphnia magna

Acute toxicity - aquatic plants

Revision date: 08/06/2016

Revision: 21

IC₅₀, 72 hours: 550 mg/l, Algae

12.2. Persistence and degradability

12.3. Bioaccumulative potential

Partition coefficient Not available.

Ecological information on ingredients.DICHLOROMETHANE

Bioaccumulative potential The product is not bioaccumulating.

Partition coefficient Not available.

12.4. Mobility in soil

Mobility The product contains volatile organic compounds (VOCs) which will evaporate easily from all surfaces.

Ecological information on ingredients.DICHLOROMETHANE

Mobility The product contains volatile organic compounds (VOCs) which will evaporate easily from all surfaces.

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment This product does not contain any substances classified as PBT or vPvB.

Ecological information on ingredients.DICHLOROMETHANE

Results of PBT and vPvB assessment This product does not contain any substances classified as PBT or vPvB.

12.6. Other adverse effects

Other adverse effects Not applicable.

Ecological information on ingredients.DICHLOROMETHANE

Other adverse effects Not applicable.

SECTION 13: Disposal considerations13.1. Waste treatment methods

General information Waste should be treated as controlled waste. Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

Disposal methods Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority. Avoid the spillage or runoff entering drains, sewers or watercourses.

SECTION 14: Transport information14.1. UN number

UN No. (ADR/RID) 2810

UN No. (IMDG) 2810

UN No. (ICAO) 2810

UN No. (ADN) 2810

14.2. UN proper shipping name

Proper shipping name (ADR/RID) TOXIC LIQUID, ORGANIC, N.O.S.

Proper shipping name (IMDG) TOXIC LIQUID, ORGANIC, N.O.S.

Proper shipping name (ICAO) TOXIC LIQUID, ORGANIC, N.O.S.

Proper shipping name (ADN) TOXIC LIQUID, ORGANIC, N.O.S.

14.3. Transport hazard class(es)

ADR/RID class	6.1
ADR/RID classification code	T1
ADR/RID label	6.1
IMDG class	6.1
ICAO class/division	6.1
ADN class	6.1

Transport labels



14.4. Packing group

ADR/RID packing group	III
IMDG packing group	III
ADN packing group	III
ICAO packing group	III

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant
No.

14.6. Special precautions for user

EmS	F-A, S-A
ADR transport category	2
Emergency Action Code	2X
Hazard Identification Number (ADR/RID)	60
Tunnel restriction code	(E)

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulations The Control of Substances Hazardous to Health Regulations 2002 (SI 2002 No. 2677) (as amended).
Control of Pollution Act 1974.

EU legislation	Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended).
Guidance	Approved Classification and Labelling Guide (Sixth edition) L131.
Authorisations (Title VII Regulation 1907/2006)	No specific authorisations are known for this product.

15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

SECTION 16: Other information

	Compliance
Revision date	09/03/2018
Revision	21
Supersedes date	08/06/2016
SDS status	Approved.
Hazard statements in full	H302 Harmful if swallowed. H315 Causes skin irritation. H319 Causes serious eye irritation. H336 May cause drowsiness or dizziness. H351 Suspected of causing cancer. H400 Very toxic to aquatic life. H410 Very toxic to aquatic life with long lasting effects.
Store Between	Store Between 5°C - 25°C
Contains SVHC	NO



info@gaa.design

SUITE 1, FIRST FLOOR, AQUASULIS, 10-14 BATH ROAD, SLOUGH, SL1 3SA

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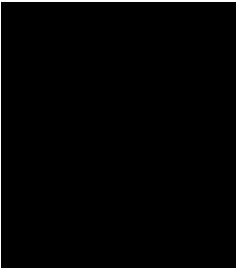
fsb⁸⁸
MEMBER

OMS  ISO
9001:2015
REGISTERED

OMS  ISO
14001:2015
REGISTERED

Design Release Schedule

Spectrum House, 22-42 Freshwater Road Dagenham RM8 1EH

Project Reference	23004
Document Number	23004-GAA-XX-XX-RP-A-0001
Suitability	S2 - For Information
Revision Number	P01
Date	27/03/2023
Written By	
Checked By	
Reviewed By	
Approved By	

Revision Record

Revision	Description	Date Issued	Originator
P01	First Issue	27/03/2023	■
P02	Updated timeline & Drawing schedule	28/04/23	■

Design Release Schedule

Introduction

The site is situated at 22-42 Freshwater Road Chadwell Heath, Dagenham, Essex RM8 1RU.

Spectrum House is 6-storey residential block.

The scope includes a Full Planning Application (FPA) and Building Regulation compliance made in terms of the building safety act 2022 for remedial work to the external cladding of the fifth and sixth floors of the building, which has a total of six floors. These floors were an addition to the building comprising a timber frame and non-compliant cladding.

An intrusive survey has been undertaken to establish the existing dry wall build up.

The work comprises the removal of existing non-compliant cladding and replacing with compliant cladding, and the removal of all windows non-compliant solid spandrel panels and replacing with compliant solid panels.

Limitations of this schedule

This design release schedule (DRS) offers a guide and target date for the release of the information by GAA Design for the Application part 2 (assessing the costs) to the Building Safety Fund (BSF), and a concurrent FPA to the local authority (Barking & Dagenham).

There may be several factors that affect the actual delivery dates, and this schedule is not to be taken as a performance document. It is issued for guidance only to assist the design team, subject to the following constraints:

01: Base data

The drawing and detail packages prepared by GAA Design comprising the deliverables for this schedule derive from data supplied to GAA Design, and comprise historical third-party Architectural drawings, the engineered timber frame layouts, photographic records and the intrusive survey undertaken for the purposes of the scope of work.

02: GAA Design deliverables

Use of the drawing and detail packages prepared by GAA Design comprising the deliverables for this schedule are contingent on the input of Fire Engineer and Structural Engineer's input, and measurements on site to confirm and verify all information.

Design Release Schedule

Full Planning Application

Drawing Number	Description	Release date
OS Map	FPA Location Plan	31/03/23
Design Statement	Planning statement and definitions	31/03/23
Existing Plans	FPA General Arrangement Package	31/03/23
2001	FPA Proposed 5 th floor plan	31/03/23
2002	FPA Proposed 6 th floor plan	31/03/23
2003	FPA Proposed Roof plan	31/03/23
2101	FPA Proposed North & South Elevations	31/03/23
2102	FPA Proposed East & West Elevations	31/03/23
2201	FPA Schematic Details at (i) typical cladding condition & (ii) window spandrel	31/03/23

Building Regulation Compliance

Drawing Number	Description	Release date
2001	5 th and 6 th floor plans	28/04/23
2101	Elevations	28/04/23
2801-2803 2901-2907	1. Typical head, jambs and cill details 2. Vertical conditions at typical cladding 3. Horizontal condition at typical cladding 4. Typical balcony Screen details 5. Typical window Spandrel details	28/04/23
0401	5 th and 6 th Floor Fire Strategy plans	28/04/23
0402	Elevations Fire Strategy	28/04/23
0001	Outline Specification	28/04/23

The number of details is assumed at this stage and will be finalised once the key details needed for Building control plans are agreed, and after a full review by the Fire Engineer and Structural Engineer.

All Fire design details, layouts and strategies will be contingent upon the Fire Engineer's design report and any relevant specifications.

Until all this information has been incorporated documentation will be issued for information only.

NOTE that work may only commence on site upon the granting of Planning Permission, and Notification of intent to start work received by the LPA BC or Approved Inspector whichever is the case.




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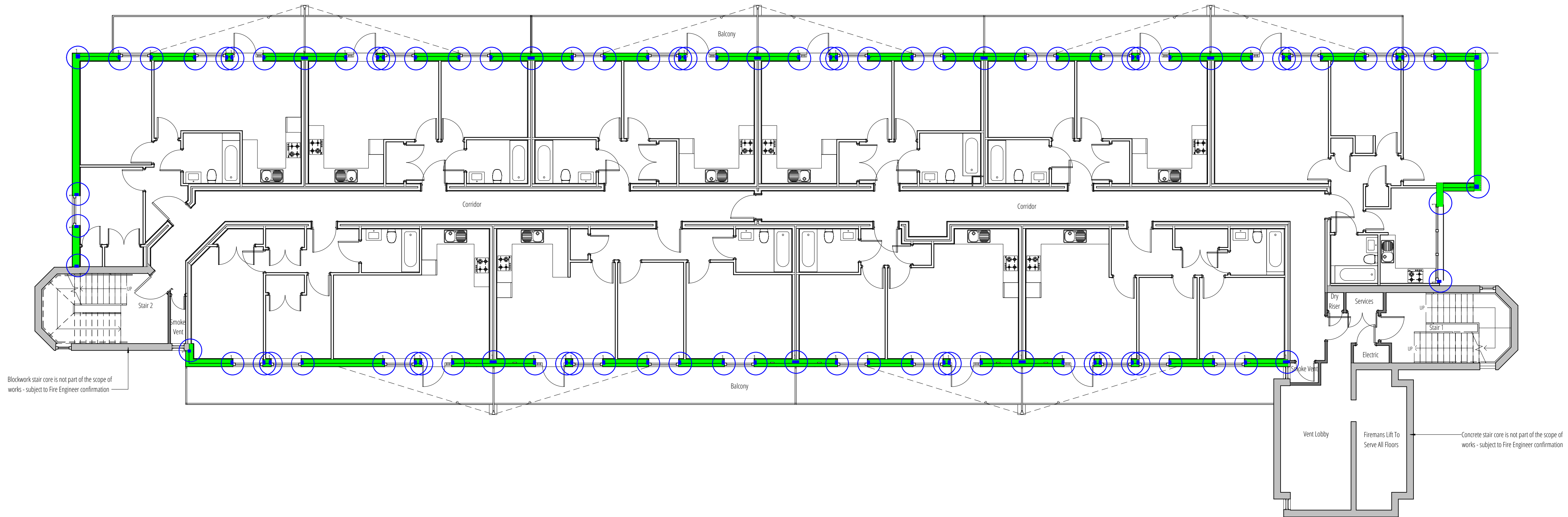
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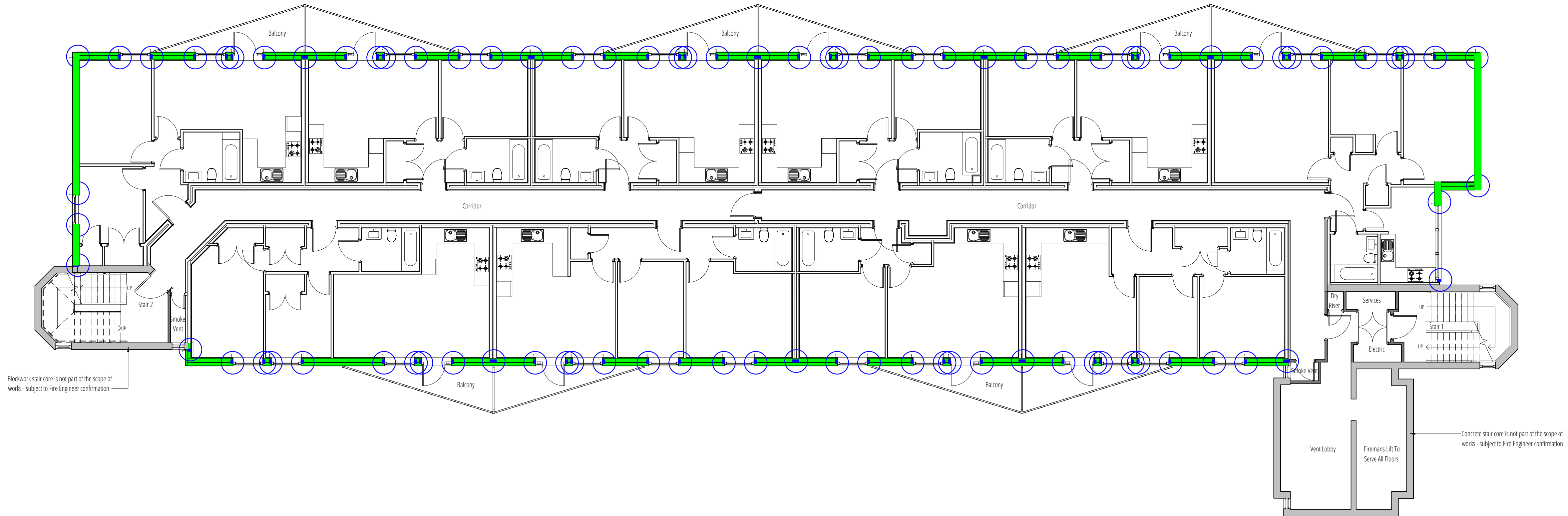
fsb^{cb}
MEMBER





Fifth Floor Fire Strategy Plan

1 : 100



Sixth Floor Fire Strategy Plan

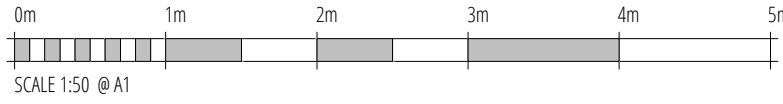
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FIRE STRATEGY LEGEND

- EXTERNAL WALL FR60
- CLOSED STATE FIRE BARRIER TO FIRE ENGINEER'S APPROVAL

ALL CAVITY FIRESTOPS AND BARRIERS ARE TO BE INSTALLED TO CLADDING AND FIRESTOP MANUFACTURERS DETAILS AND RECOMMENDATIONS AND THE APPROVAL OF THE FIRE ENGINEER



PROJECT NAME
Spectrum House

DRAWING TITLE
Fire Strategy Plan

PROJECT NUMBER
23004

SCALE

STAGE
For Review and Comment

DOCUMENT NUMBER
23004-GAA-A1-05-DR-A-0401

DATE
28/04/2023

STATUS
S3

REV. NO.
P01

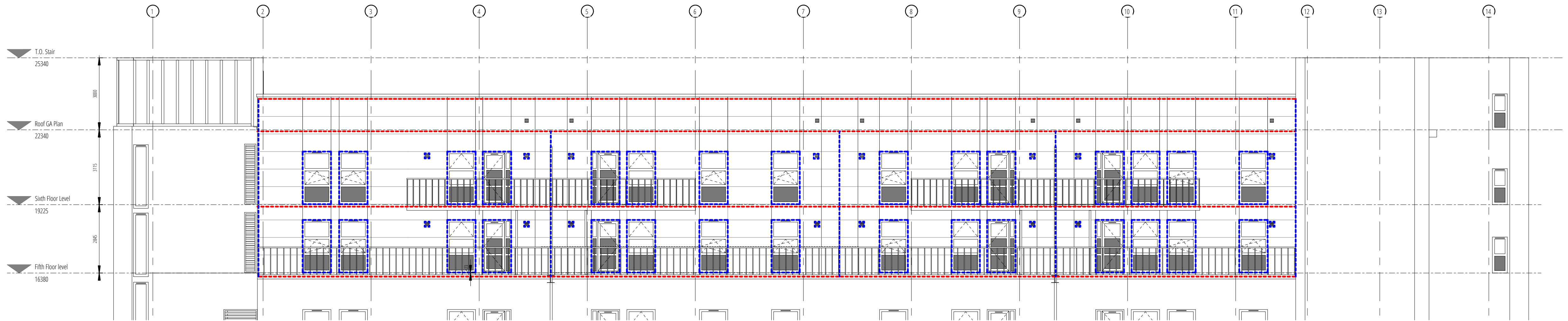
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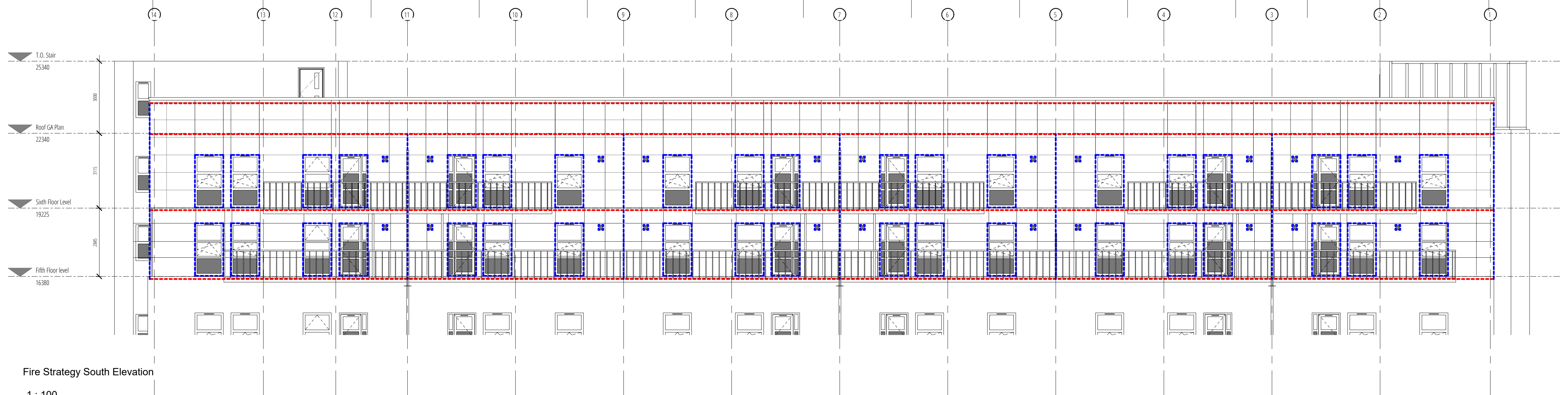
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APPROVED
SB

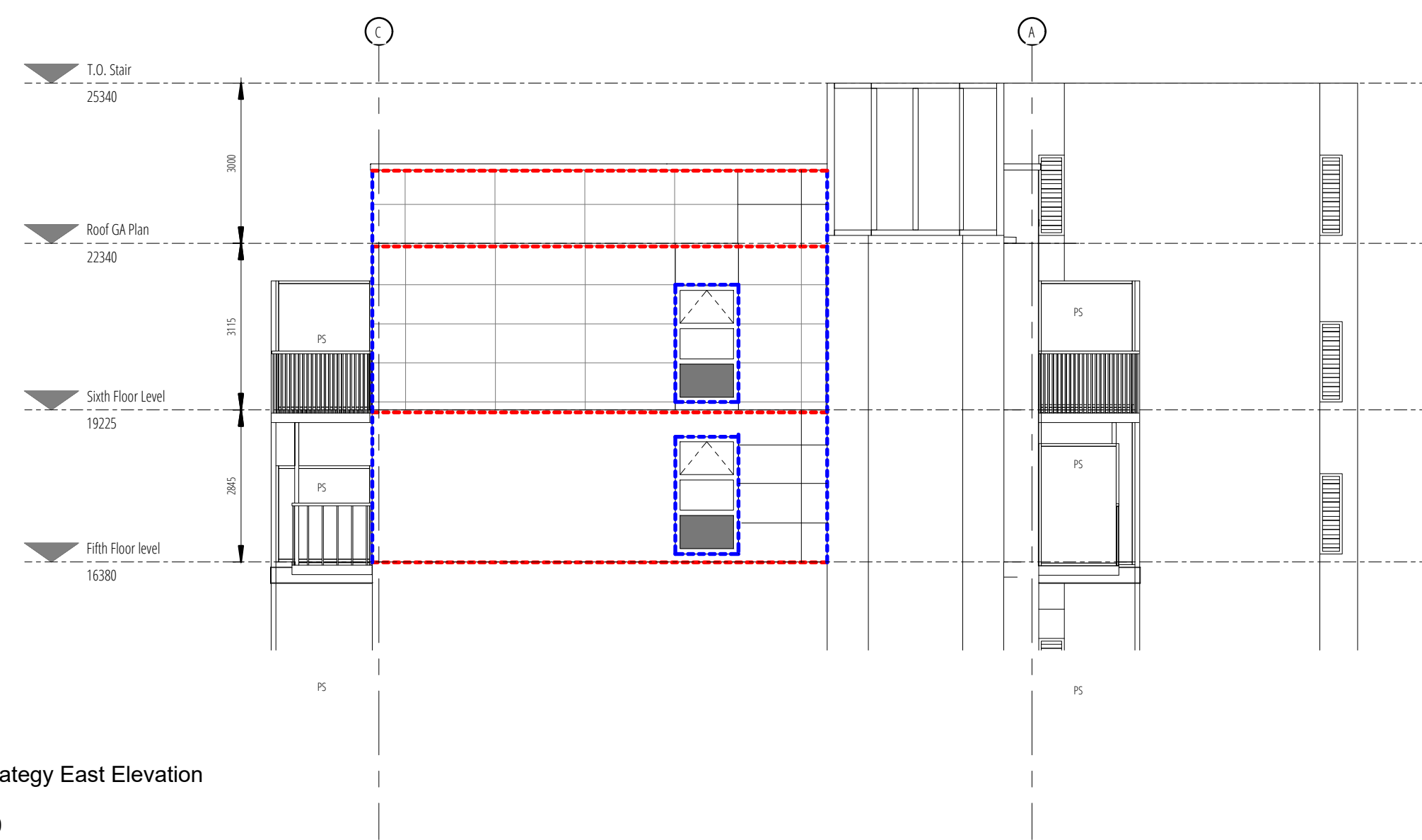




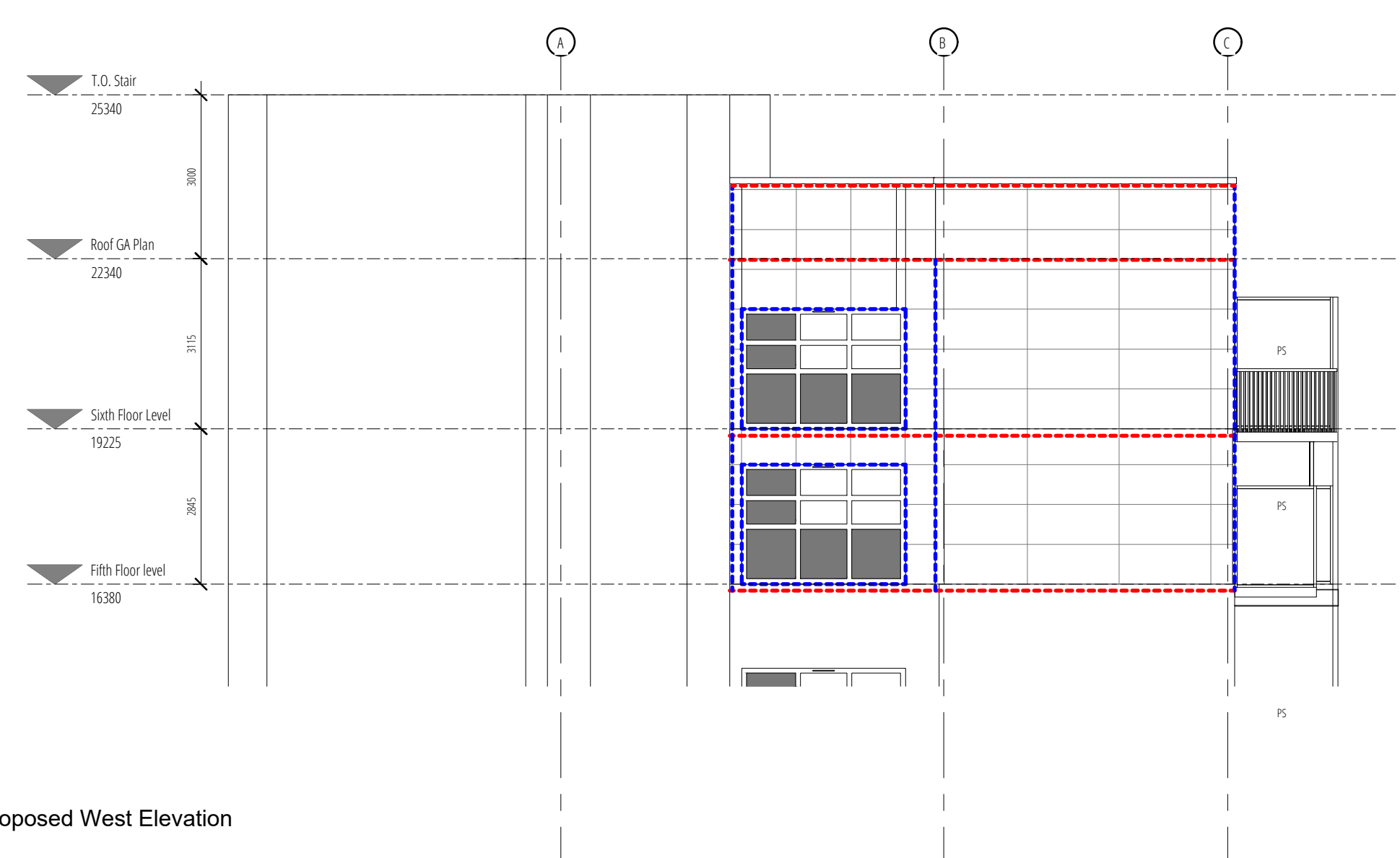
Fire Strategy North Elevation
1 : 100



Fire Strategy South Elevation
1 : 100



Fire Strategy East Elevation
1 : 100



Proposed West Elevation
1 : 100

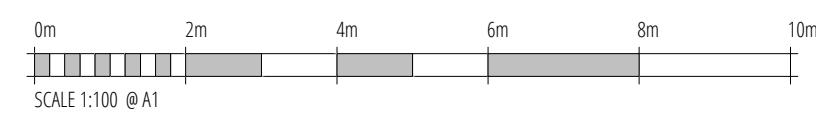
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---	CLOSED STATE FIRE BARRIER TO FIRE ENGINEER & SPECIALIST SUB CONTRACTOR APPROVAL

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PROJECT NAME
Spectrum House

DRAWING TITLE
Fire Strategy Elevations

PROJECT NUMBER
23004

SCALE
1:100

STAGE
For Review and Comment

DOCUMENT NUMBER
23004-GAA-A1-ZZ-DR-A-0402

DATE
28/04/2023

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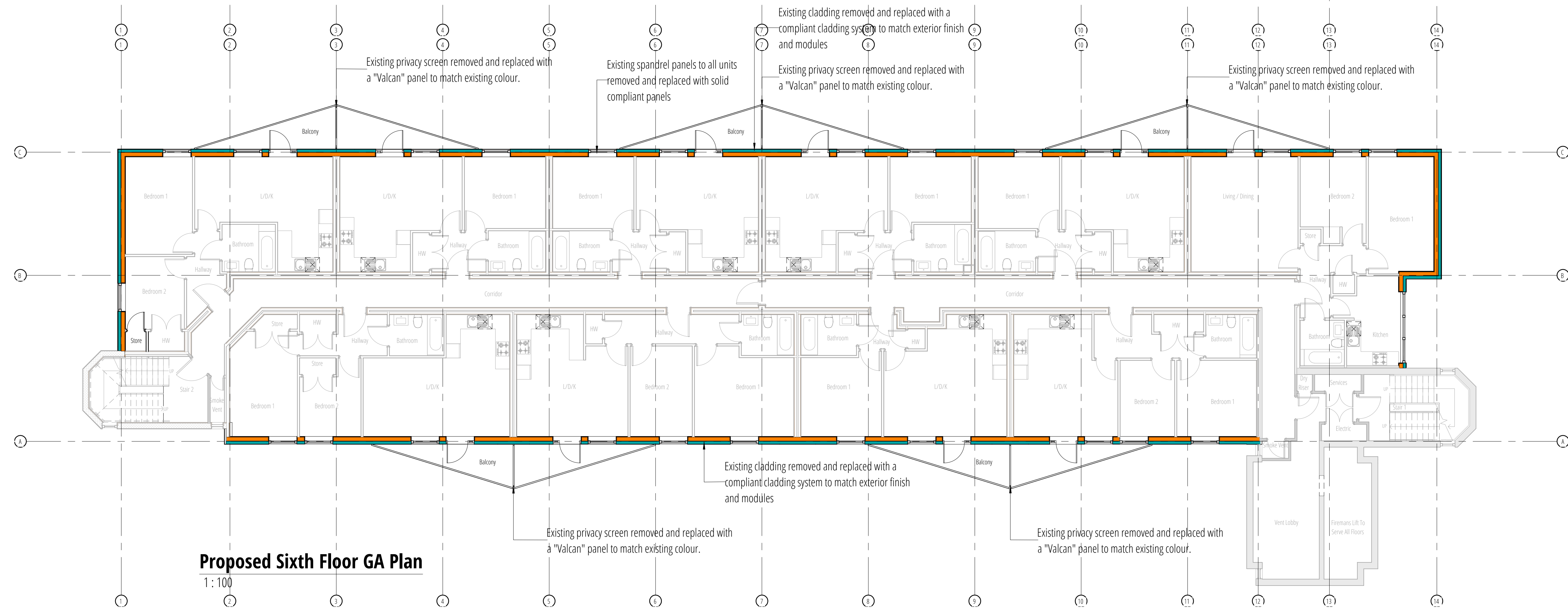
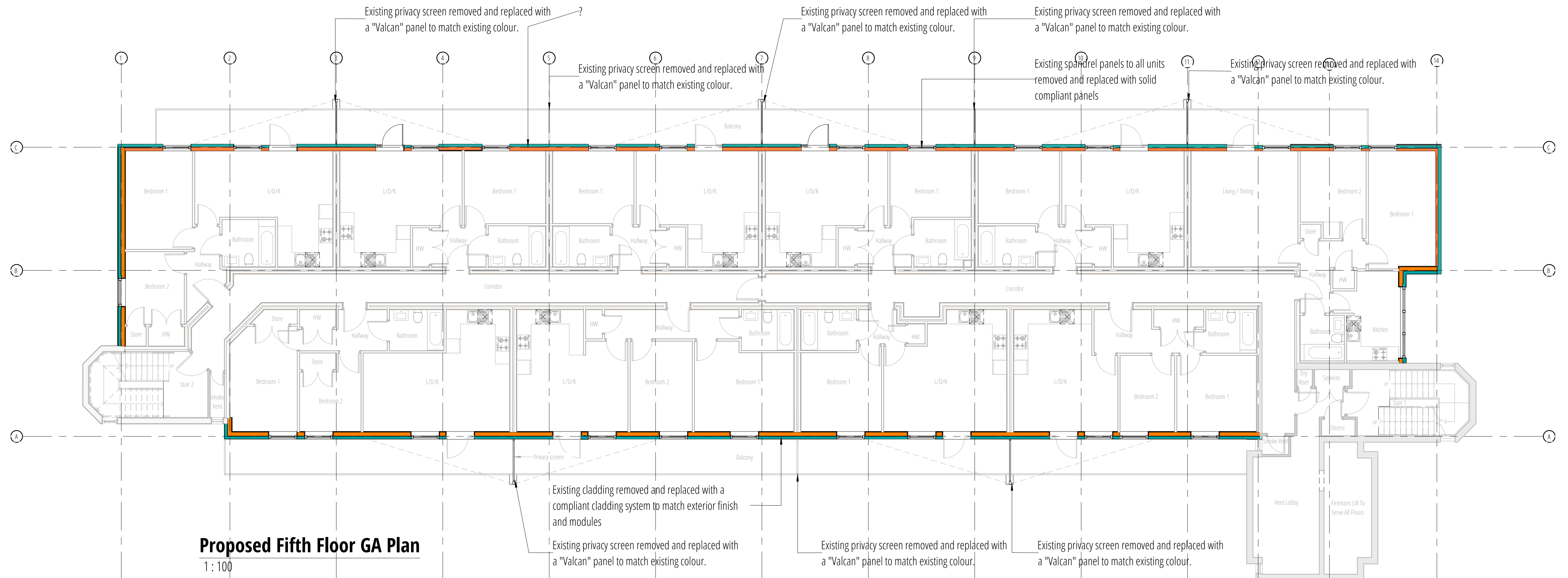
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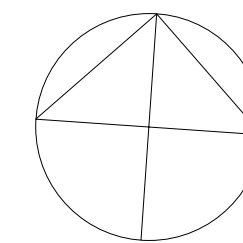
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SCALE 1:100 @ A1

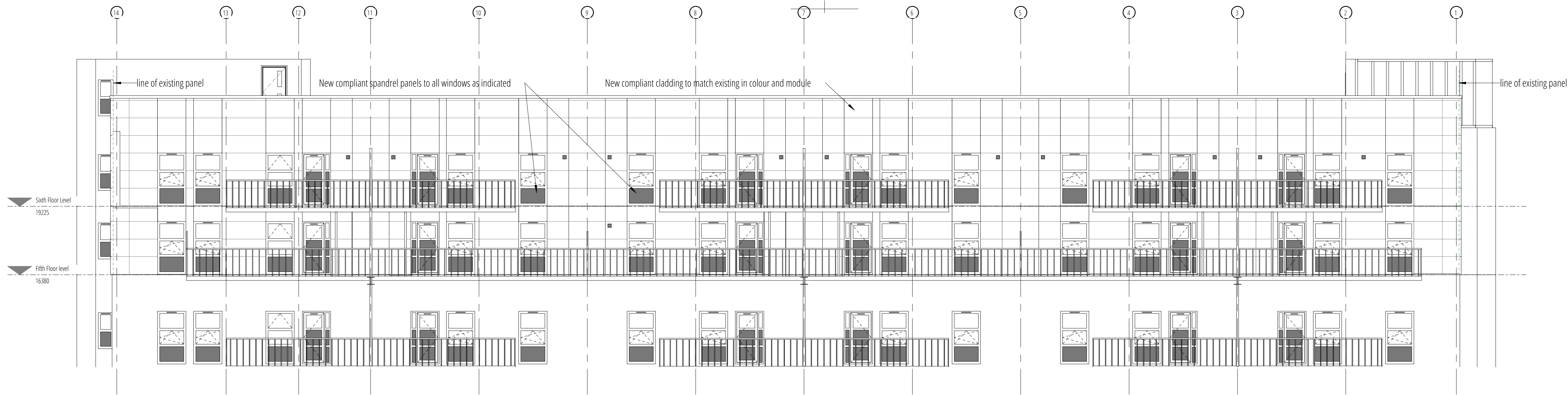


PROJECT NAME
Spectrum House
DRAWING TITLE
Fifth & Sixth floor plans
PROJECT NUMBER SCALE
23004

STAGE
For Review and Comment

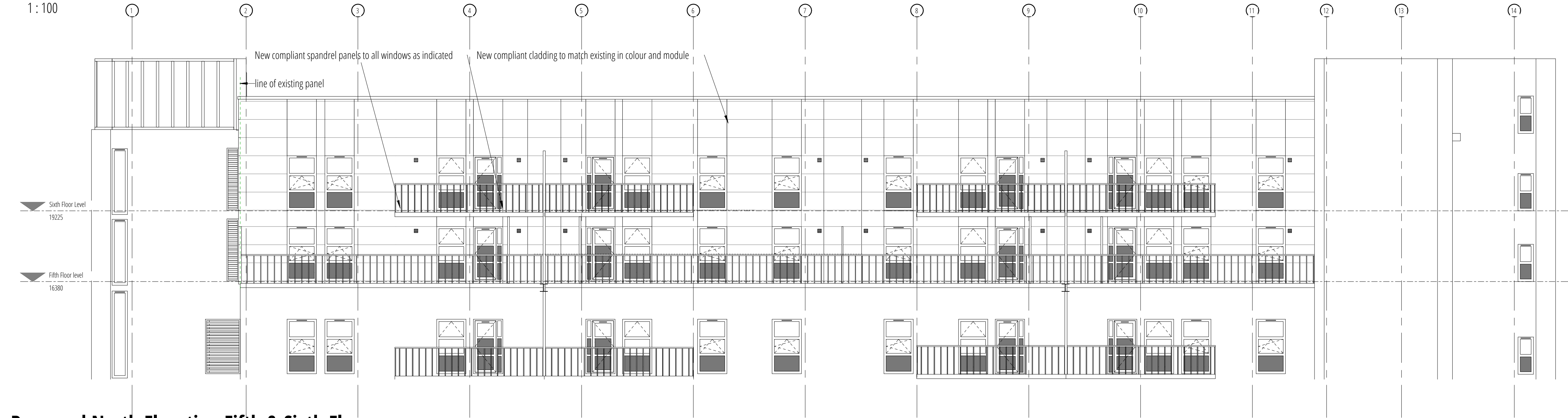
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DATE
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STATUS REV.NO.
S3 P01
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REVIEWED APPROVED
SB SB





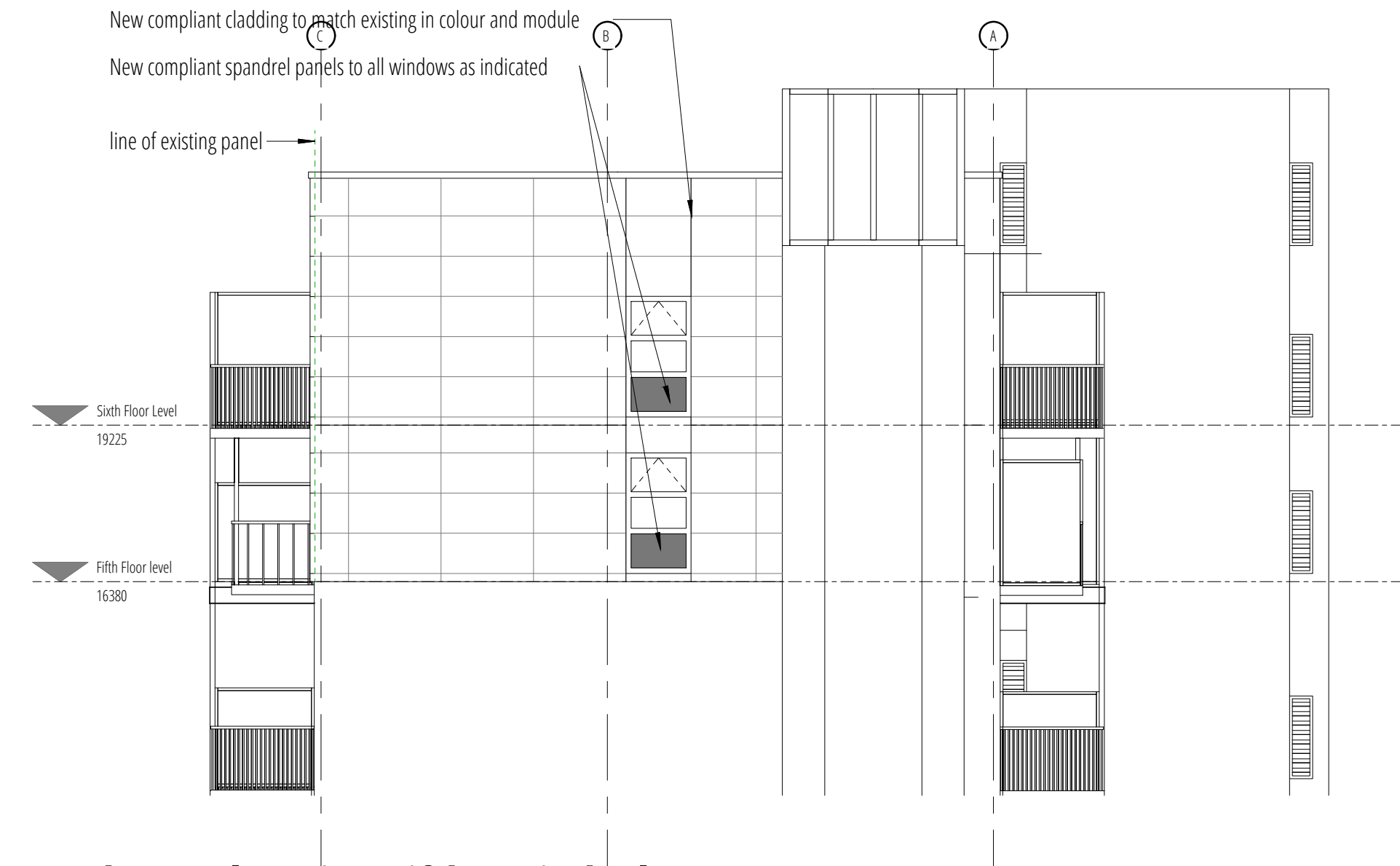
Proposed South Elevation Fifth & Sixth Floors

1 : 100



Proposed North Elevation Fifth & Sixth Floors

1 : 100

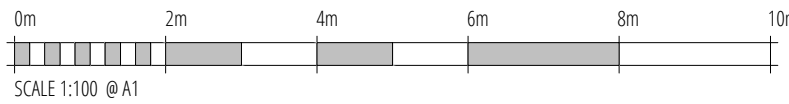


Proposed East Elevation Fifth & Sixth Floors

1 : 100

Existing West Elevation Fifth & Sixth Floors

1 : 100



PROJECT NAME
Spectrum House
DRAWING TITLE
South & East Elevations Existing & Proposed
PROJECT NUMBER
23004
SCALE
STAGE
For Review and Comment

DOCUMENT NUMBER
23004-GAA-A1-ZZ-DR-A-2101
DATE
28/04/2023
STATUS
S3
REV. NO.
P01
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SB
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Existing privacy screen infill panels removed and replaced with "Valcan" panel to match existing colour - panel fixed to existing frame/fixings.

Tenmat NVFB Non-ventilated Cavity fire barrier to BCO and Fire Engineers requirements and installed to manufacturers details and recommendations.

Vitrafix VF1 Aluminum helping hand rail carrier system brackets with Cortex EDPM membrane strip to face of brackets behind cladding panels and thermal insulator vertical strips to rear face of brackets to sheathing board.

Effisus Fire rated breather membrane bonded to sheathing board.

Existing Trespa cladding panels, vertical timber battens, breather membrane and OSB Sheathing Board to be carefully removed - existing insulation and framing to be made good where required before installation of new external facade.

Valcan 12mm Ceramapanel compressed fibre-cement cladding panels - 10mm joint width between panels.

90mm Rockwool DD or eq. A1 FR Insulation board fixed to sheathing board through breather membrane.

9mm Y-Wall or eq. Cement Particle sheathing board.

Plan Detail 01 - Privacy Screen and Party Wall

1 : 5

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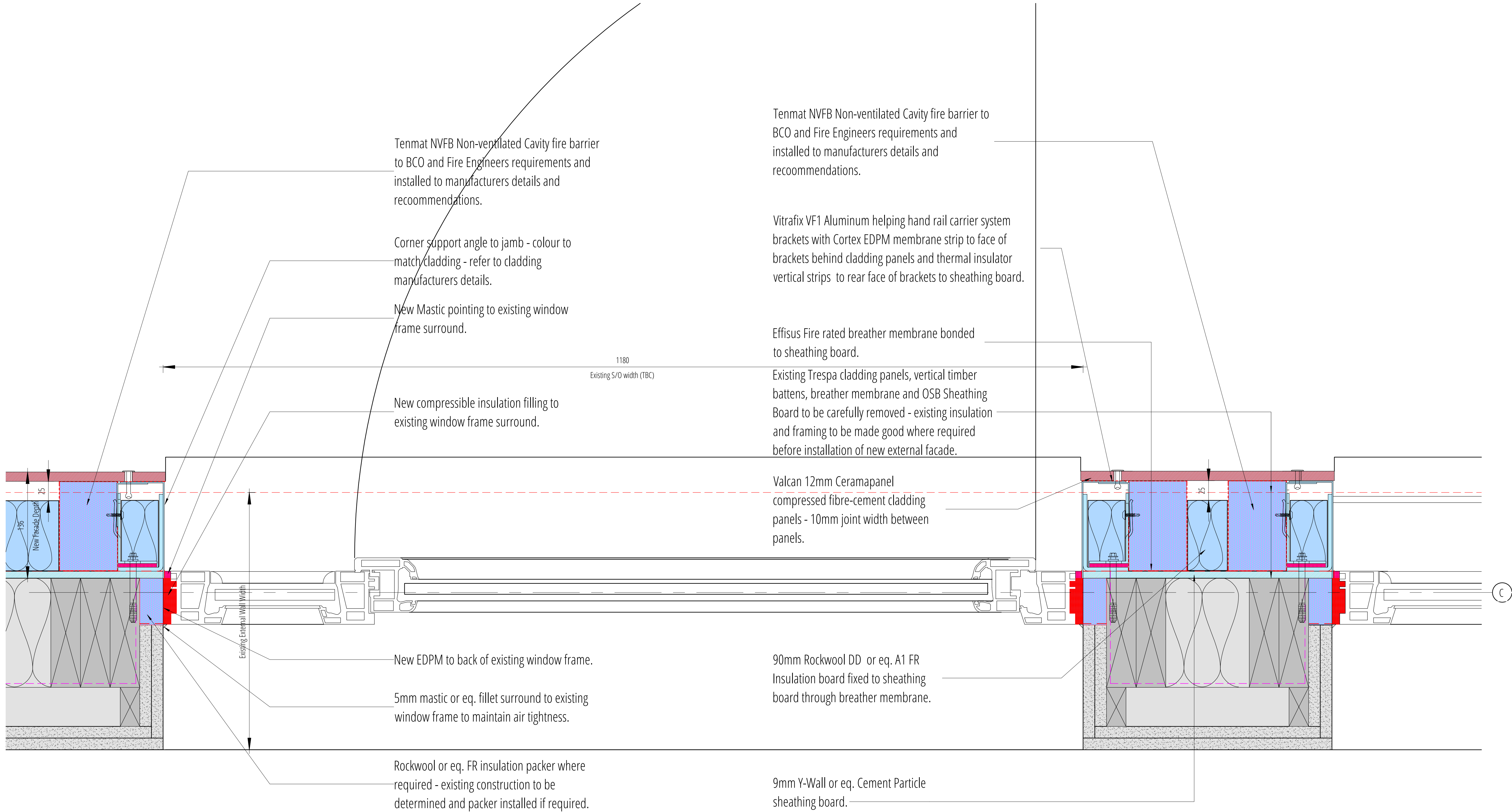
PROJECT NAME
Spectrum House
DRAWING TITLE
Plan Details
PROJECT NUMBER
23004
SCALE
1:5

STAGE
For Review and Comment

DOCUMENT NUMBER
23004-GAA-XX-XX-DR-A-2801
DATE
28/04/2023
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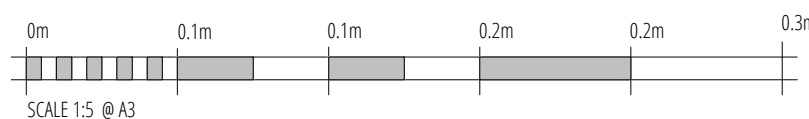
Plan Detail 02 - Typical Balcony Door

1 : 5

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PROJECT NAME
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DRAWING TITLE
Plan Details

PROJECT NUMBER SCALE
23004 1:10

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For Review and Comment

DOCUMENT NUMBER
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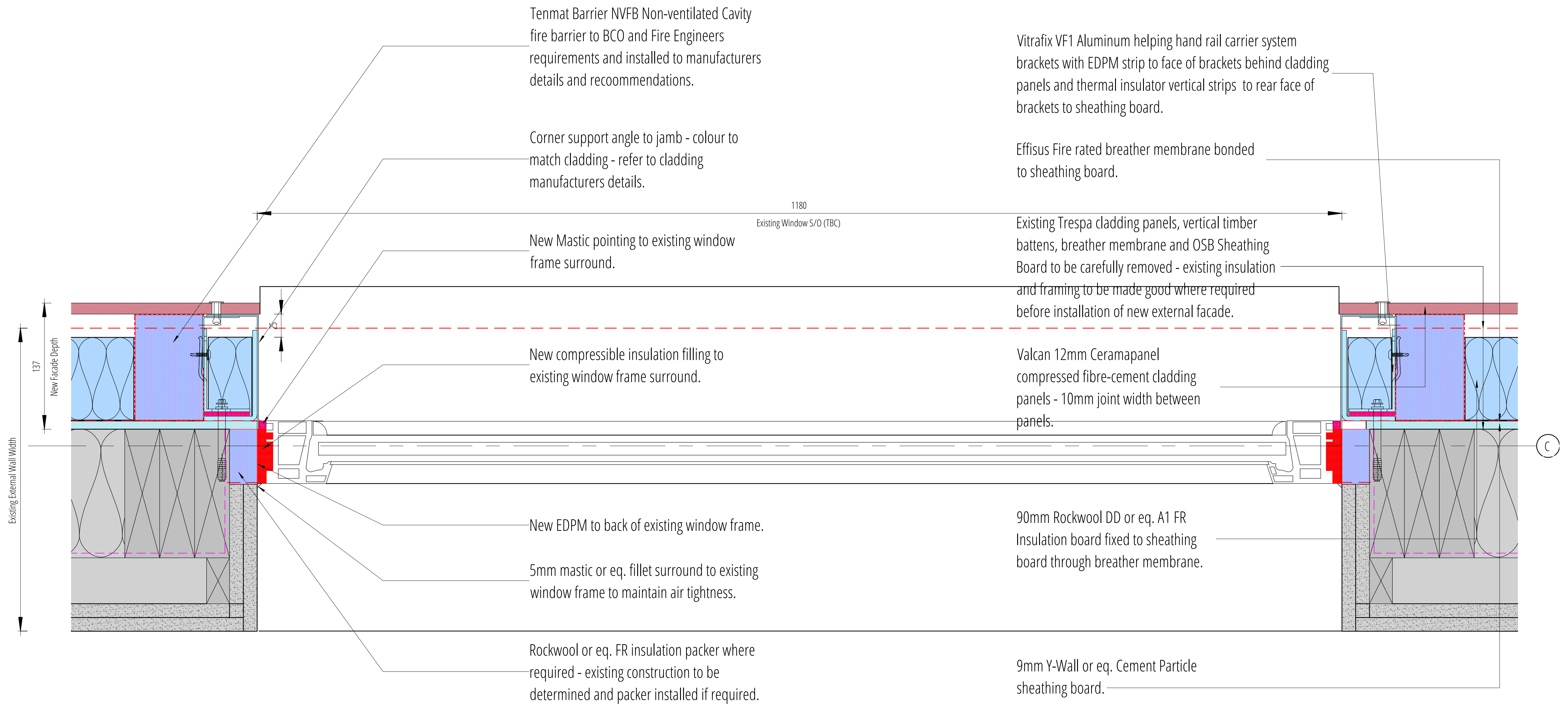
DATE
28/04/2023

STATUS Rev.No.
S3 P01

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REVIEWED APPROVED
SB SB

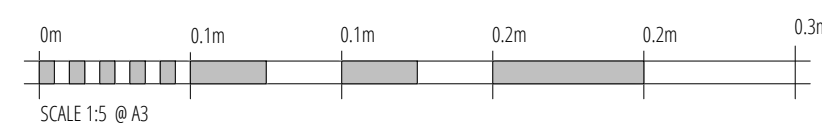




Plan Detail 03 - Typical Window

1 : 5

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PROJECT NAME
Spectrum House
DRAWING TITLE
Plan Details
PROJECT NUMBER
23004
SCALE
1:5

STAGE
For Review and Comment

DOCUMENT NUMBER
23004-GAA-XX-XX-DR-A-2803
DATE
28/04/2023
STATUS
S3
Rev.No.
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PROJECT NUMBER	SCALE
23004	1:20

STATUS	REV.NO.	REVIEWED	APPROVED
S3	P01	SB	SB



1:20

1:20

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Existing Trespa cladding panels, vertical timber battens, breather membrane and OSB Sheathing Board to be carefully removed - existing insulation and framing to be made good where required before installation of new external facade.

All areas greyed out are existing building construction.

Existing privacy screen infill panels removed and replaced with "Valcan" panel to match existing colour - panel fixed to existing frame/fixings.

Valcan 12mm Ceramapanel compressed fibre-cement cladding panels - 10mm joint width between panels.

9mm Y-Wall or eq. Cement Particle sheathing board.

Effisus Fire rated breather membrane bonded to sheathing board.

Tenmat VFB 120/120 Open State Cavity fire Stop/Barrier to BCO and Fire Engineers requirements and installed to manufacturers details and recommendations - stop to provide 25mm ventilation gap between Intumescent face of stop and rear of cladding panels.

Vitrafix VF1 Aluminum helping hand rail carrier system brackets with EDPM strip to face of brackets behind cladding panels and thermal insulator vertical strips to rear face of brackets to sheathing board.

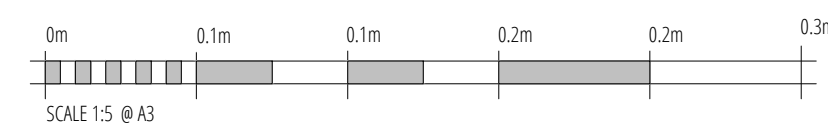
Expamet or eq. S/S Insect mesh.

Fifth Floor level
16380

Rockwool or eq. Fire rated rigid insulation upstand with PPC metal upstand facing.

Section A-A - G.A.Section 2 - Detail 1

1 : 5



PROJECT NAME
Spectrum House

DRAWING TITLE
Section A-A Details

PROJECT NUMBER SCALE
23004 1:5

STAGE
For Review and Comment

DOCUMENT NUMBER
23004-GAA-XX-XX-DR-A-2902

DATE
28/04/2023

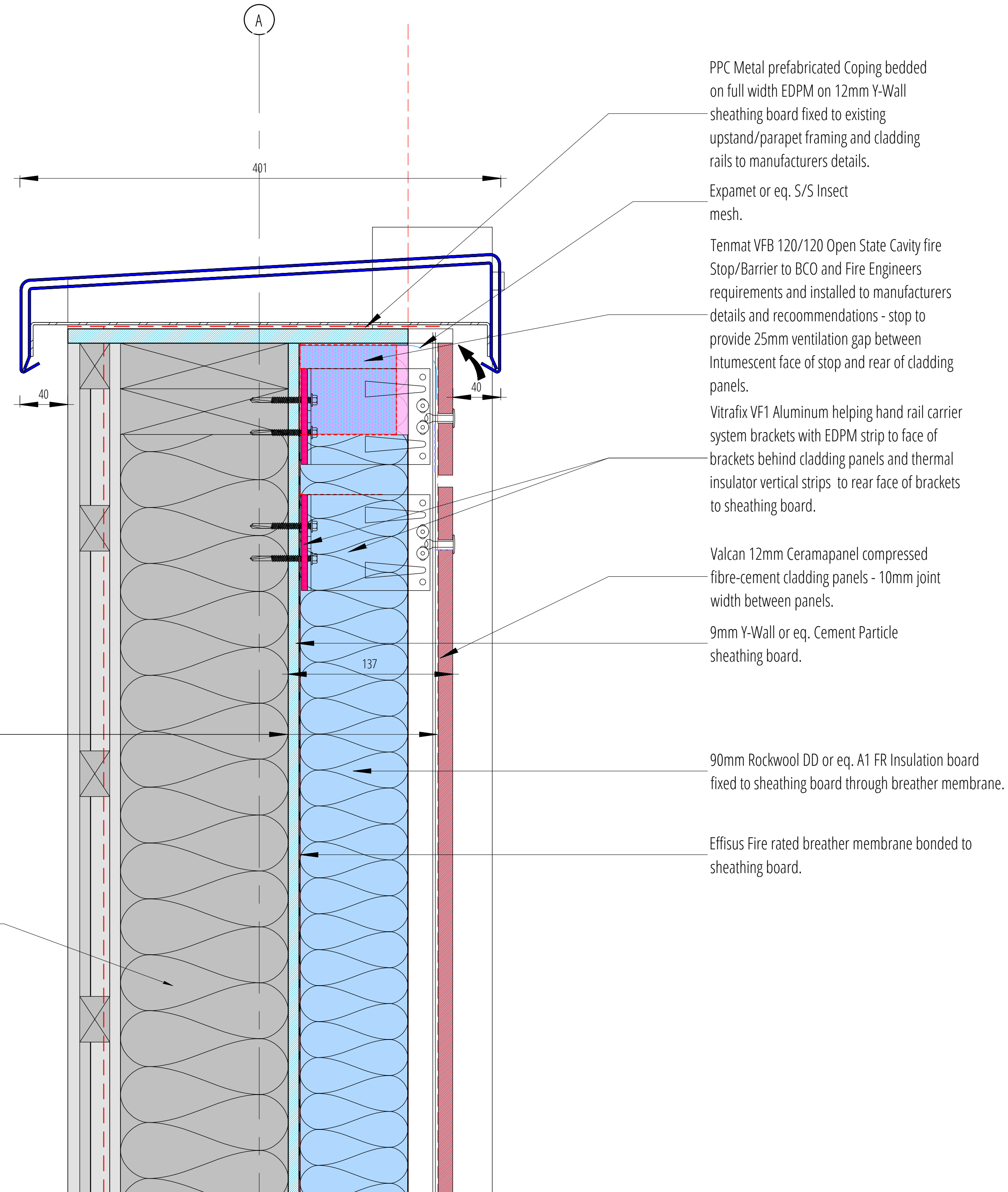
STATUS Rev.No.
S3 P01

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MIS BV

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SB SB



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Section A-A - G.A. Section 2 - Detail 3

1 : 5

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0m 0.1m 0.1m 0.2m 0.2m 0.3m
SCALE 1:5 @ A3

PROJECT NAME
Spectrum House

DRAWING TITLE
Section A-A Details

PROJECT NUMBER SCALE
23004 1:5

STAGE
For Review and Comment

DOCUMENT NUMBER
23004-GAA-XX-XX-DR-A-2904

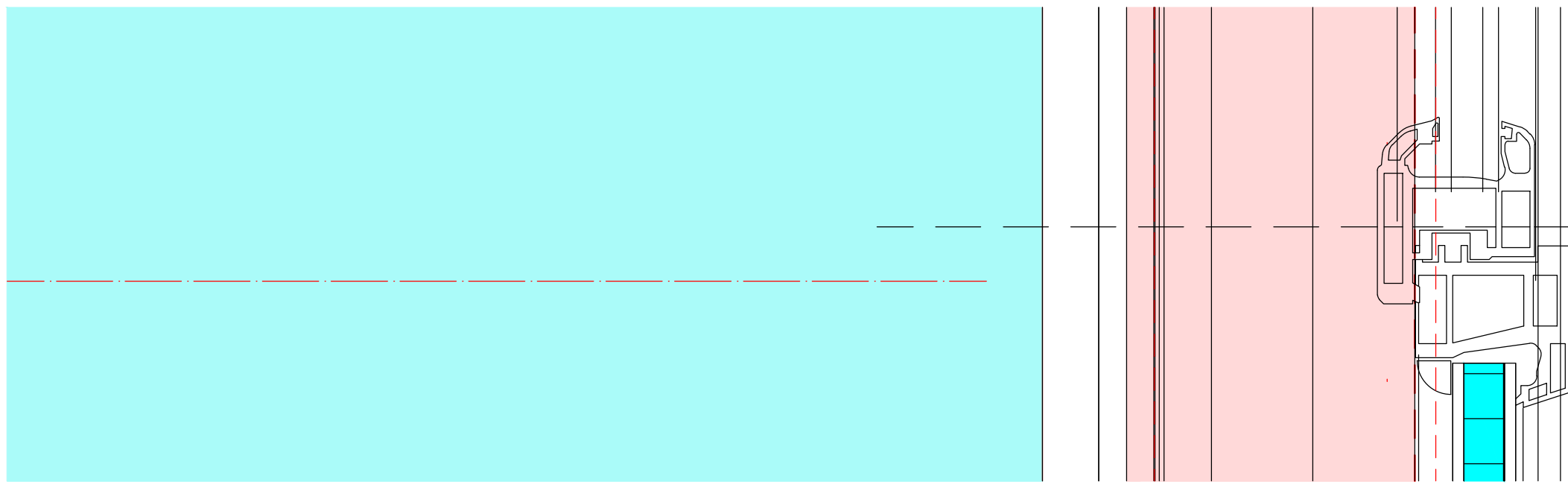
DATE
28/04/2023

STATUS Rev.No.
S3 P01

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MIS BV

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SB SB

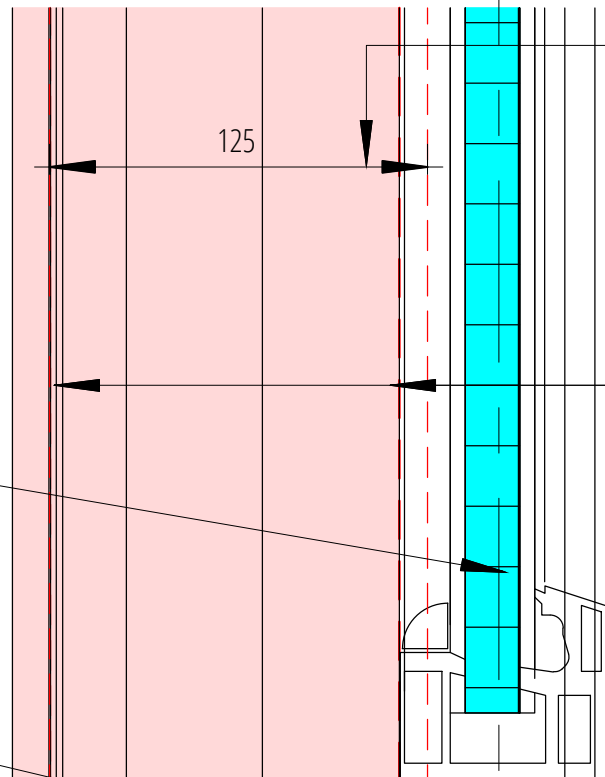
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Existing privacy screen infill panels removed and replaced with "Valcan" panel to match existing colour - panel fixed to existing frame/fixings.

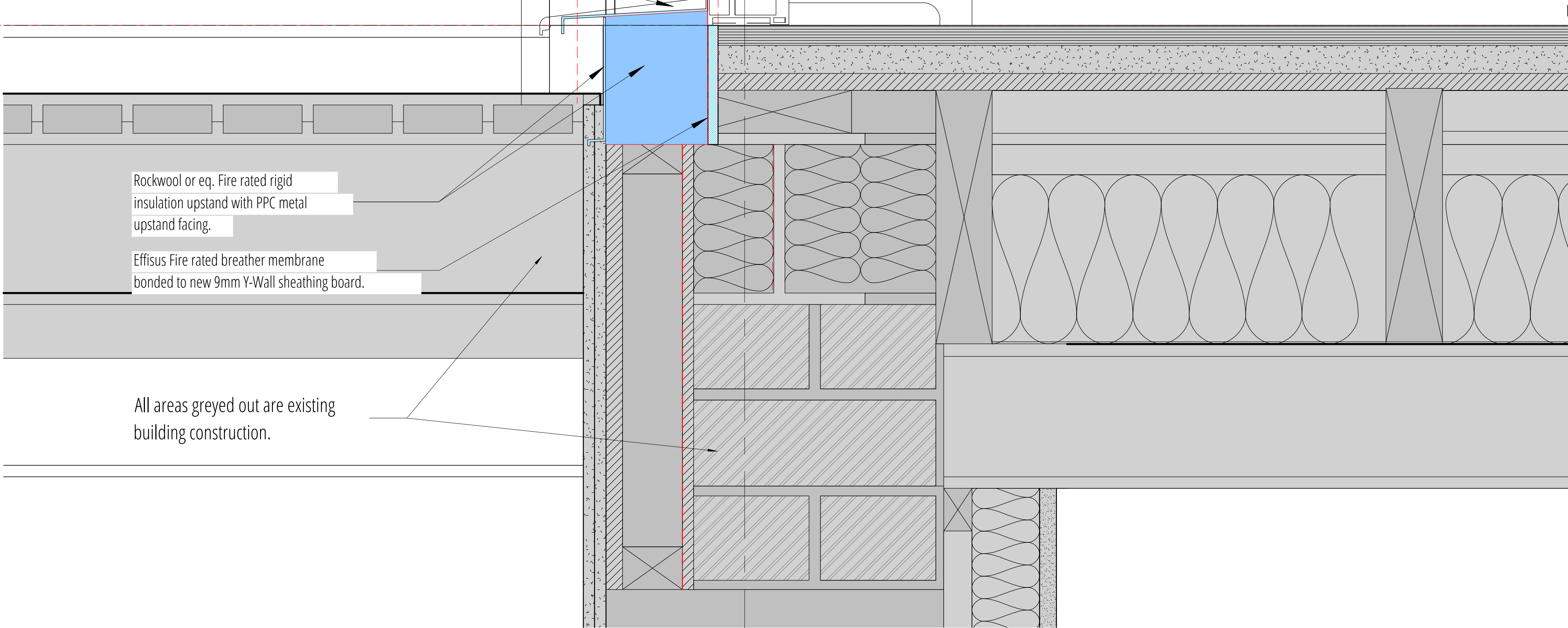
Existing spandrel panel carefully removed from frame and replaced with 36mm Metalline "Ultima" PPC aluminium clad FR insulated spandrel panel - repair/replace all fire and mastic seals to maintain FR rating.

New PPC metal sill bedded on EDPM on new preformed rigid insulation upstand.



Existing Trespa cladding panels, vertical timber battens, breather membrane and OSB Sheathing Board to be carefully removed - existing insulation and framing to be made good where required before installation of new external facade.

Corner support angle to jamb - colour to match cladding - refer to cladding manufacturers details.

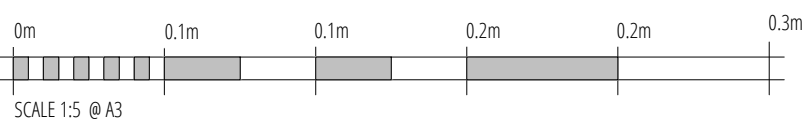


Fifth Floor level
16380

Section A-A - G.A.Section 1 - Detail 1

1 : 5

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PROJECT NAME
Spectrum House

DRAWING TITLE
Section A-A Details

PROJECT NUMBER SCALE
23004 1:5

STAGE
For Review and Comment

DOCUMENT NUMBER
23004-GAA-XX-XX-DR-A-2905

DATE
28/04/2023

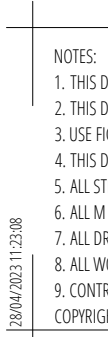
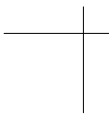
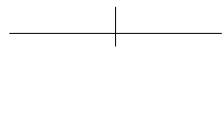
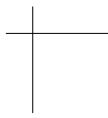
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Corner support angle to jamb -
colour to match cladding - refer to
cladding manufacturers details.

Existing spandrel panel carefully removed from frame and
replaced with 36mm Metalline "Ultima" PPC aluminium clad
FR insulated spandrel panel - repair/replace all fire and
mastic seals to maintain FR rating.

Existing Trespa cladding panels, vertical timber battens,
breather membrane and OSB Sheathing Board to be carefully
removed - existing insulation and framing to be made good
where required before installation of new external facade.

Rockwool or eq. Fire rated rigid insulation
upstand with PPC metal upstand facing -
acting as cavity fire barrier.

Vitrafix VF1 Aluminum helping hand rail carrier system
brackets with EDPM strip to face of brackets behind
cladding panels and thermal insulator vertical strips to
rear face of brackets to sheathing board.

Expanet or eq. S/S Insect mesh.

Effisus Fire rated breather membrane bonded to
sheathing board.

Vitrafix VF1 Aluminum helping hand rail carrier system
brackets with EDPM strip to face of brackets behind
cladding panels and thermal insulator vertical strips to
rear face of brackets to sheathing board.

Tenmat VFB 120/120 Open State Cavity fire
Stop/Barrier to BCO and Fire Engineers
requirements and installed to manufacturers details
and recommendations - stop to provide 25mm
ventilation gap between Intumescent face of stop
and rear of cladding panels.

9mm Y-Wall or eq. Cement Particle sheathing
board.

Tenmat NVFB Non-ventilated Cavity fire barrier
to BCO and Fire Engineers requirements and
installed to manufacturers details and
recommendations.

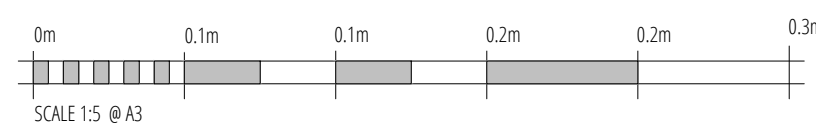
Corner support angle to jamb -
colour to match cladding - refer to
cladding manufacturers details.

Section A-A - G.A.Section 1 - Detail 2

1 : 5

C

Sixth Floor Level
19225



PROJECT NAME
Spectrum House
DRAWING TITLE
Section A-A Details
PROJECT NUMBER
23004
SCALE
1:5

STAGE
For Review and Comment

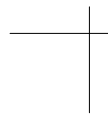
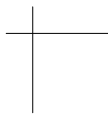
DOCUMENT NUMBER
23004-GAA-XX-XX-DR-A-2906
DATE
28/04/2023
STATUS
S3
Rev.No.
P01

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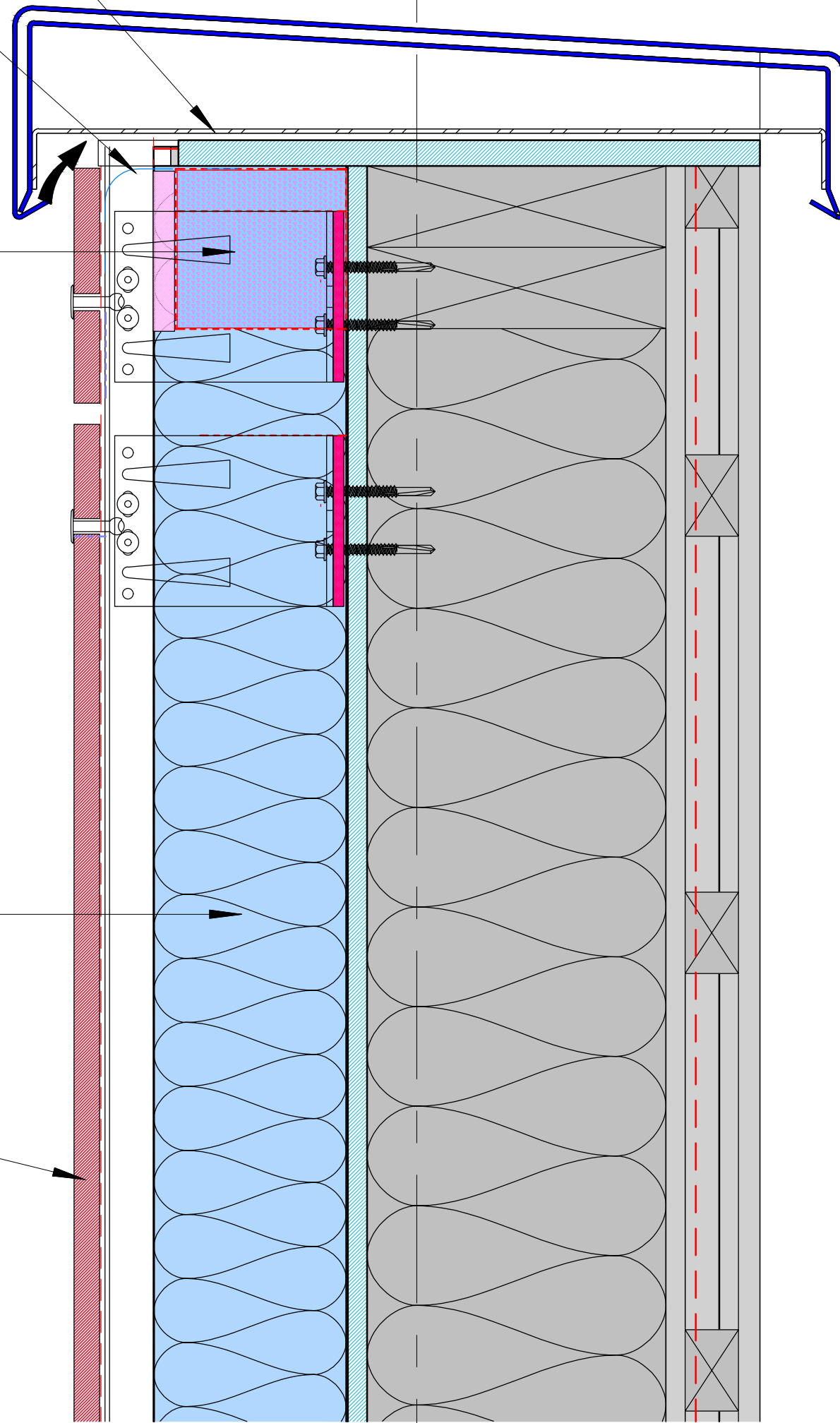
PPC Metal prefabricated Coping bedded on full width EDPM on 12mm y-Wall sheathing board fixed to existing upstand/parapet framing and cladding rails to manufacturers details.

Expamet or eq. S/S Insect mesh.

Tenmat VFB 120/120 Open State Cavity fire Stop/Barrier to BCO and Fire Engineers requirements and installed to manufacturers details and recoommendations - stop to provide 25mm ventilation gap between Intumescent face of stop and rear of cladding panels.

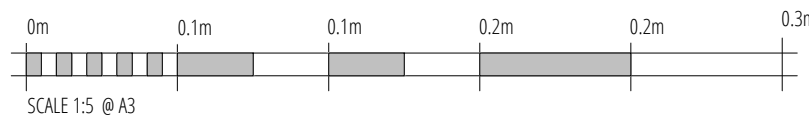
90mm Rockwool DD or eq. A1 FR Insulation board fixed to sheathing board through breather membrane.

Valcan 12mm Ceramapanel compressed fibre-cement cladding panels - 10mm joint width between panels.



Section A-A - G.A.Section 1 - Detail 3

1 : 5



PROJECT NAME
Spectrum House

DRAWING TITLE
Section A-A Details

PROJECT NUMBER SCALE
23004 1:5

STAGE
For Review and Comment

DOCUMENT NUMBER
23004-GAA-XX-XX-DR-A-2907

DATE
28/04/2023

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BUILDING SAFETY FUND - PROJECT TEAM APPOINTMENTS SCHEDULE

Application Number:	P23735
Building Name:	Spectrum Building
Unique Reference Number:	Dagenham_18
Last Modified:	23/05/2023

Project Team Appointments Schedule

[illegible]