



Extensions^{plus}

engineered by **ultraframe**

System Overview and Building Regulations (Jhai)*

Version 2 | Jan 2016

*England and Wales



Extensions^{plus} is a range of domestic extensions that are **pre-approved to Building Regulations***. These pre-approved extensions allow your customers to get a stunning new extension - **FAST**

- Typically 5 times more profit per installation, when compared to a standard conservatory
- Off site manufactured to make the extension quicker to build and install on site
- Fast track Building Regulation approvals* - Red tape reduced to a minimum - less hassle, less cost
- Choose from a solid panel roof, one with real tiles/slates or a glass roof
- The Daily Mail states "The home increases by 15% after a proper extension is added, great value!"

Please read this brochure very carefully to ensure you sell, design and specify your extension correctly. On the opposite page are the 3 basic designs your customers can choose from:

Mottram^{plus}

GLASS ROOF

Harlington^{plus}

LIVINROOF (WITH SOME GLAZED PANELS)

Tatton^{plus}

REALROOF TILED

Contacts

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Jhai Ltd

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Jhai Ltd

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– Completed application forms
Ultraframe@jhai.co.uk
0800 121 6062

Loggia super insulated columns are the cornerstone of each design. A minimum of 4 large columns - 2 at the corners and 2 abutments - are needed plus a varying number of small inline columns, dependent on style / design.

To ensure your extension meets Building Regulations use U-Design's thermal calculator to determine pelmet width & the number of inline columns.

All windows and doors must have a minimum U-value of 1.0. Base, foundations, floors etc MUST be constructed to current Building Regulation standards to ensure the completed extension complies.

Ultraframe's U-Design software is the final arbiter on specification and thermal performance.

*This 'fast track' method using Jhai only applies to England and Wales. The traditional compliance route needs to be followed in Scotland & N. Ireland.

Mottram^{plus}

Loggia Glazed Extension

Thermal Performance

A++ <0.5 W/m ² K	A++
A+ 0.5-0.7 W/m ² K	
A 0.7-0.9 W/m ² K	
B 0.9-1.1 W/m ² K	
C 1.1-1.3 W/m ² K	
D 1.3-1.5 W/m ² K	
E 1.5-1.7 W/m ² K	

Based on a weighted U-value of the complete structure with windows & doors of U-value 1.0 W/m²K

Columns

A minimum of 2 large corner columns and 2 large abutment columns plus a number of in-line columns which vary depending upon extension style / design.

Roof Choice

Classic PVC - 1.2 'U' value glass.
Quantal Aluminium - 1.2 'U' value glass.
Minimum depth of perimeter pelmet ceiling - 600mm wide, filled with 100mm mineral fibre insulation.

Roof Glazing Upgrades

Performance Glass - self cleaning / solar control.
Ultra83B High Performance - the best UK roof glass.

Optional Extras

Centre Ceiling - *LivingLIGHT*.
Wider Ceiling Pelmet - *LivingRoom*.

Example Building Shapes



Double hipped with box gutter

NOT permitted:
Georgian/Gable designs

Harlington^{plus}

Loggia *Living*ROOF Extension

Thermal Performance

A++ <0.5 W/m ² K	A++
A+ 0.5-0.7 W/m ² K	
A 0.7-0.9 W/m ² K	
B 0.9-1.1 W/m ² K	
C 1.1-1.3 W/m ² K	
D 1.3-1.5 W/m ² K	
E 1.5-1.7 W/m ² K	

Based on a weighted U-value of the complete structure with windows & doors of U-value 1.0 W/m²K

Columns

A minimum of 2 large corner columns and 2 large abutment columns plus a number of in-line columns which vary depending upon extension style / design.

Roof Choice

100% Solid Roof.
Up to 10% Glass - approx 2 glass panels, 1.0 U-value.

Roof Glazing Upgrades

Performance Glass - self cleaning / solar control.
Ultra83B High Performance - the best UK roof glass.

Example Building Shapes



Georgian or Double hipped with box gutter



Hipped Lean-to

Not Permitted:
Gable designs

Tatton^{plus}

Loggia realROOF Extension

Thermal Performance

A++ <0.5 W/m ² K	A++
A+ 0.5-0.7 W/m ² K	
A 0.7-0.9 W/m ² K	
B 0.9-1.1 W/m ² K	
C 1.1-1.3 W/m ² K	
D 1.3-1.5 W/m ² K	
E 1.5-1.7 W/m ² K	

Based on a weighted U-value of the complete structure with windows & doors of U-value 1.0 W/m²K

Columns

A minimum of 2 large corner columns and 2 large abutment columns plus a number of in-line columns which vary depending upon extension style / design

Roof Choice

Choice of tiles to match roof.
Optimised for Velux roof windows
- ability to include multiple Velux roof windows.

Roof Glazing Upgrades

-

Optional Extras
Extra Columns.

Example Building Shapes



Georgian



Lean-to

Not Permitted:
Gable designs



Extensions^{Plus} & Building Regulation compliance*

*This 'fast track' method using Jhai only applies to England and Wales. The traditional compliance route needs to be followed in Scotland & N. Ireland.

This brochure outlines the benefits of using approved inspector Jhai Ltd

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Introduction

For purposes of this document, we are assuming an Extensions^{Plus} installation is being built with no thermally separating doors between the house and new building. This extension falls within scope of Building Regulations and the retailer currently has a number of options;

1. To appoint Local Authority Building Control (LABC). The retailer undertakes this.
2. Ultraframe have set up a separate partnership and system approval with Approved Building Control Inspector Jhai Ltd (England and Wales).

What is an Approved Inspector?

Building control is a service traditionally provided by individual local authorities who are not able to control work outside their geographical area making it difficult for a retailer who works across multiple Local Authority areas – consistency of approach can even be an issue within the same LA.

Ultraframe has created the option to submit applications to a single approved inspector such as Jhai Ltd (England and Wales). They are licensed through the CIC (Construction Industry Council) to carry out this regulatory service and are able to operate throughout England and Wales.

Who are Jhai Ltd?

Jhai are one of the largest Approved Inspectors with around 100 surveyors operating out of regional offices in England and Wales meaning that they are able to offer a viable alternative to using Local Authority building control.

Jhai have worked closely with Ultraframe reviewing the products featured in the Extensions^{Plus} collection and together they have developed a tailored system approval allowing you to submit all applications to a single point of contact without additional justification. See page 6 for an application form to submit a 'live' project.

Their professional staff are there to assist you throughout the compliance process.

Definition of coverage

See Jhai System Type Approval & Schedules – page 11-19

What have Ultraframe created with Jhai Ltd?

The two parties have created a framework agreement for the Extensions^{plus} collection product to demonstrate compliance to Building Regulations. In effect it's a system approval that the product systems and how they integrate to form a compliant extension.

The traditional route to demonstrating Building Regulation compliance is by a plan appraisal and a series of site inspections. This overly burdensome process has been streamlined by the Jhai System Approval.

To back up the compliance process Jhai have interrogated the Ultraframe production and QA system allowing greater flexibility and pragmatism on site and allowing sample review of each project creating a simplified inspection regime.

This allows the construction of an extension to be completed to Building Regulations compliance standard using various Ultraframe product systems used within the constraints detailed to be built without challenge or justification anywhere in England and Wales.

Retailer application process

Jhai and Ultraframe have compiled a dedicated application form and combined checklist. See page 6 for the application form and page 7 for notes on how to complete the form.

Alternatively you can send an email to **ultraframe@jhai.co.uk** with your contact details; the name and address of the householder: describing the work being done and your proposed start date, giving seven days notice. You may wish to attach a photo of anything that requires clarification.

Upon receipt of the form or email, Jhai immediately register your project with an 'initial notice' to the relevant local Authority before works commence on site. This also ensures the works show up on local search applications should the property be sold in the future.

Local Authorities manage a public register of building work and have different methods in processing these notices and Jhai recommend that this is submitted to Jhai 7 days prior to works commencing on site. Local Authorities' have been known to

reject the notice if insufficient time is given.

Fees

Fees for an Extensions^{plus} project are £480 plus VAT. This figure is subject to a 20% surcharge within the M25.

The invoice for the full amount will be triggered upon submission of the application form and Jhai terms are 30 days from date of invoice. All payments are to Jhai Ltd.

Site visits

Once the application form is received centrally at Jhai it is assigned to a site surveyor in the local area and their contact details will be emailed to the retailer.

Jhai will ensure that the site surveyor is fully briefed about any issues pertinent to the product and provide the retailer with a consistent and pragmatic approach on site.

Jhai will contact the householder to arrange inspection of the project as necessary. On satisfactory completion of the inspection a completion certificate will be sent to you, enabling you to forward the certificate once the retail customer has paid.

Please contact Jhai if you have any concerns about issues on site. They can offer practical advice or how to overcome site problems.



Building Control Application Form

This form should be completed in full as your instruction to Jhai to carry out the building control function as a Corporate Approved Inspectors as designated under the Building Act 1984 and the Building Regulations (Approved Inspectors) regulations 2010

The completed form should be accompanied by a site location plan identifying the property in relation to the street it is located. You can also provide other plans and images of the works proposed which will be assessed upon submission and comments provided.

Please email you submission at least seven days prior to works commencing on site to ultraframe@jhai.co.uk If you have any queries please call 0800 121 6062

Project Details

Description of works featuring Extensions^{plus} <small>engineered by ultraframe</small>			
Anticipated Start Date		Project Duration (approx)	
Please confirm the extension type			
<input type="checkbox"/> Mottram^{plus} Classic PVC or aluminium glass roof	<input type="checkbox"/> Harlington^{plus} Extension using <u>Living</u> ROOF	<input type="checkbox"/> Tatton^{plus} Extension using realROOF	

Owner Details

Name	
Address	
Tel/Contact Details	
E-mail- Address	

Installer Details

Name	
Address	
Contact Name	
Telephone	
E-mail- Address	

Invoice Details

Please indicate to whom the fee should be invoiced	Name Address/Company	
	Tel No.	
E-mail- Address		
Signature	Print Name	Date

Please sign and email to ultraframe@jhai.co.uk or call 0800 121 6062

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This checklist outlines some of the things that the installation company should be aware of when making a Building Regulations application to Jhai for a pre-approved extension. You will need to evidence that the installation will meet the points set out below.

Please read this guide thoroughly **before** completing the application form. Consult Jhai to discuss options that may be required for certification to proceed.

Tel: 0800 121 6062 email: ultraframe@jhai.co.uk

Ensuring adequate structural support

Is the base and foundations inline with the guidelines at the end of this document?	Y
	N

Frames

Are the frames compliant? Your windows and doors MUST have a minimum U Value of 1.0. (If no, a SAP calculation may be needed).	Y
	N

Approved Document L

To ensure the walls comply thermally, have you calculated the number of inline Loggia columns? This is in addition to 2 large Loggia corners and 2 large Loggia abutments?	Y
	N

Planning Permission

Has planning guidance been sought/ is approval needed/ applied for? This is NOT covered in the application to Jhai.	Y
	N

Cavity Tray

Has a risk assessment been undertaken? Is a cavity tray required?	Y
	N

The questions above deal with some of the basic elements that JHAI will consider when processing your building control application and will be considered during the inspection process.

Building Regulations - Jhai Checklist

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Who are Jhai and what do they do?

They are an approved inspector providing you with over 100 surveyors operating throughout England and Wales. They provide a consistent and pragmatic alternative to using the local authority for building control.

Frequently asked questions

Why does the extension need Building Regulation consent?

A single storey extension with no thermal separation between the dwelling and the extension has to be Building Regulation compliant, whether fitted with a glazed roof or a solid roof.

How do I know how many Loggia columns to use?

To achieve Building Regulation compliance, super insulated Loggia columns **MUST** be used. A minimum of 2 large at each corner and 2 large abutments plus a varied quantity of small in-line columns. Take a closer look on www.ultraframe-conservatories.co.uk/trade/extension-calculator.php

Do I need to keep separating doors?

No, the Extensions^{Plus} range is based on no thermal separation.

Are there any design limitations I should be aware of?

To be pre-approved in England and Wales, the Extensions^{Plus} range must be designed in line with the parameters as defined in this document. Designers always have the fallback option to undertake a SAP calculation if the home owner's design varies from the embedded specification.

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I have heard of SAP calcs. Is a SAP calculation necessary?

No, they are not necessary if the chosen design complies. However, certain variations - e.g. substantial bifolds across a complete elevation, may mean that a SAP calculation is necessary to ensure compliance. Jhai can take care of this. If you are carrying out green improvements and are not sure whether these will be adequate compensation speak to a member of Jhai.

Do I need to provide a cavity barrier in the existing wall?

There is a risk that driving rain could penetrate the wall and discharge inside if a cavity tray is not installed - undertake a risk analysis to determine if one is needed. Ultraframe insists upon a vertical DCP inserted into a 'groove' in host wall next to each Loggia column. N.B. If an Extension^{Plus} is required as part of a new domestic dwelling, then the fitment of a cavity tray is mandatory.

Can I extend the heating system into the extension?

Extending the existing home's heating system into the extension is possible. Professional advice would be needed to check capacity of existing boiler.

How do I calculate the thermal performance?

Use U-design yourself, send Ultraframe or your fabricator/supplier an outline of your design and/or use the online thermal calculator. www.ultraframe-conservatories.co.uk/trade/extension-calculator.php

I am building in Scotland - what are my options?

Extensions in Scotland need to comply with Scottish Building standards 2015 and can be viewed in the Technical Handbook Domestic. Visit www.gov.scot for full details and how to comply.

Examples

The key to successful Building Regulation Compliance are the super insulated Loggia columns. Every pre-approved Extension^{Plus} building features 2 large Loggia corner columns and 2 large abutments and then a varying quantity of in-line columns.

To calculate how many in-line columns are needed for your extension you can use U-design software, send Ultraframe or your fabricator/supplier your design outline.

Here are a few worked examples:

Example Size (based on 1.8m wide opening in host wall)

2 LARGE LOGGIA CORNERS, 2 LARGE ABUTMENTS AND A NUMBER OF IN-LINE COLUMNS (detailed below)

	Mottram ^{Plus} GLASS ROOF	Harlington ^{Plus} LIVIN/ROOF	Tatton ^{Plus} REALROOF TILED
3m projection x 4m wide	4	4	0
3m projection x 5m wide	8	6	0

ENQUIRY FORM

Thank you for considering one of the Extension Plus Range

Extensions^{plus}

engineered by ultraframe

CHOOSE A STYLE

1 Mottram^{Plus}

☐

Classic PVC or aluminium glass roof
(glass to be 1.2 min U-value).

Style/Design

Indicate LivingRoom pelmet (mm)
(filled with 100mm mineral fibre insulation) (Min 600mm, max 1200mm)

(Go to website to calculate pelmet depth).

Large (450mm) corner columns 2

Large (450mm) abutment columns 2

(Go to website).

Preferred No.: of

Inline columns:

Options

1. LivingLight

2. Solar control 1.0 roof glass.

2 Harlington^{Plus}

☐

LivingROOF solid roof - Select up to 10% glass panels - typically 2 panels.

Style/Design

Large (450mm) corner columns 2

Large (450mm) abutment columns 2

(Go to website).

Preferred No.: of

Inline columns:

3 Tatton^{Plus}

☐

realROOF to accept tiles

Specify type/brand of slate/tile _____ (Not supplied)

Specify Velux positions in roof _____ (Not supplied)

Style/Design

Large (450mm) corner columns 2

Large (450mm) abutment columns 2

(Go to website).

Preferred No.: of

Inline columns:

Options

1. Configure for one or more Velux (Not supplied).

(Show positions on sketches below)

ALL WINDOWS AND DOORS (not supplied) MUST HAVE AN OVERALL 'U' VALUE OF 1.0 OR LESS

☐ I confirm the extension requires Building Regulations and I will be taking responsibility for the correct specification & construction.

☐ I confirm I will be using Jhai Ltd for Building Regulation Approval (England and Wales) - it is the retailers responsibility to complete relevant application form.

☐ I confirm the windows & doors have U value of 1.0 or less

☐ I am organising my own compliance with Building Regulations.

CONFIRM SHAPE / DIMENSIONS - SKETCH ELEVATIONS & PLAN VIEW

Show Loggia column positions & door/
window locations

1 Plan View

2 Front elevation

3 Left elevation

4 Right elevation

GABLE DESIGNS NOT PERMISSABLE- OTHER RESTRICTIONS APPLY, SEE SYSTEM OVERVIEW BROCHURE

Add the following information to enable us to correctly consider your enquiry

ACCOUNT NUMBER

Company Name

Site address (not completing this section now MAY result in a higher price later if site delivery required).

Company Contact

Delivery Address (if different to site address).

Order Number

Telephone No.

Job Reference

Site Postcode
(vital information)

Pitch

Fax No.

Anticipated start date

ONCE IN RECEIPT OF YOUR ENQUIRY, WE WILL PROCESS YOUR PREFERRED DESIGN/SPECIFICATION IN U-DESIGN TO CHECK THERMAL PERFORMANCE MEETS BUILDING REGULATIONS. WE MAY NEED TO DISCUSS 'TWEAKS' TO LAYOUT TO AID THERMAL PERFORMANCE.

PLEASE SIGN AND FAX BACK TO THE SUPPORT TEAM ON 0843 208 6945

SIGNED Retailer

DATE



System Type Approval Certificate

Certificate Number jhai 14032BM

jhai
limited

This is to certify that the

Extensions*plus*
engineered by ultraframe

Residential extension systems provided by

Ultraframe (UK) Ltd,
Salthill Road,
Clitheroe,
Lancashire,
BB7 1PE

Meets the technical requirements of the elements of the
Building Regulations 2010 specified in the attached
schedule

Date of Issue

23rd October 2015

Date of expiration

8th December 2017

Signed on behalf of jhai Ltd

Andrew Crooks

Director of Technical Services & Learning

Offices throughout the UK



Regulated
by RICS

Alternative format or larger text available

Registered Office: Whitecross Business Centre, Northbury, Dorset, DT10 9HR
Company Reg No: 3983972, VAT Reg No: 730 256 71



1. Summary

Extensions^{Plus} is a range of three pre-approved building regulation extension types developed using a combination of Ultraframe's Loggia columns, LivinROOM pelmet and LivinROOF/RealROOF solid roof system.

The purpose of this assessment is to determine that the system complies with the functional requirements of the relevant sections of the Building Regulations.

In support of this process Ultraframe have provided documentation for assessment and review as referenced within Appendix A of this report.

2. Product Description

Extensions^{Plus} by Ultraframe Ltd is a selection of three residential extension types created using a combination of Ultraframe products and traditional building methods.

These systems can be combined in a variety of plan shapes and sizes to suit the existing dwelling.

The Ultraframe products comprise of the following

- Ultraframe Loggia columns;
- LivinROOM pelmet system;
- Classic PVC and aluminium glazed roof;
- RealROOF (as approval reference 14001 dated 16th May 2014); and
- LivinROOF (as approval reference 14018 dated 17th July 2014)

An average U-Value calculator has been developed by Ultraframe allowing the thermal separation between the house and extension to be removed within the constraints included in the design

The three extension types have been marketed and can be described as follows:

The Mottram Plus: Loggia Glazed Extension

- A minimum of 2 large columns and 2 abutment Loggia columns – plus a number small of in-line columns the quantity of which will depend upon shape/footprint
- Glazed 'Classic' conservatory roof system or Quantal aluminium roof
- LivinROOM pelmet system minimum 600mm wide filled with 100mm mineral fibre insulation

Harlington Plus: Loggia LivinROOF Extension

- A minimum of 2 large columns and 2 abutment Loggia columns – plus a number small of in-line columns the quantity of which will depend upon shape/footprint
- LivinROOF solid roof system (as approval reference 14018 dated 17th July 2014) with up to 10% glazing allowable (typically 2 panels)

Tatton Plus: Loggia realROOF Extension

- A minimum of 2 large columns and 2 abutment Loggia columns – plus a number small of in-line columns the quantity of which will depend upon shape/footprint
- realROOF roofing system (Certificate Number Jhai 14001BM) allowing the use of any roof tile or slates

IMPORTANT

1. All windows and doors MUST have a minimum 'U' value of 1.0 unless an alternative provision can be demonstrated (see 4.16, p14) 2. The remainder of product specification - base, slab, any walls etc - are inline with Building Regulations - see section 5

System Type Approval Schedules

Contents

1. Summary
2. Product Description
3. Approval Statement
4. Conditions of Use
5. Extension Guidance

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3. Approval Statement

3.1 Upon review of the details submitted the Ultraframe Ltd Extensionsplus System is hereby approved for compliance with the referenced functional requirements as cited in Schedule 1 of the Building Regulations 2010 for residential use (purpose groups 1 (a)(b)(c) in Table D1 of Approved Document B:2006) where used as a domestic extension.

3.2 This certification is issued to and is approved for use by **Ultraframe (UK) Ltd, Salthill Road, Clitheroe, Lancashire, BB7 1PE.** as a valid building regulation application to Jhai Ltd.

3.3 The technical standards referred to for the purpose of this assessment are as follows:

3.3.1 GSA Associates Product Validation for Loggia Columns
Project Number 2012.092: Dated 11 July 2012

3.3.2 Loggia from Ultraframe: Loggia Super Insulated Columns
System overview and Design Guide V5: Dated June 2013

3.3.3 Loggia from Ultraframe: Loggia Columns Thermal Performance
Dated 24 August 2012

3.3.4 Ultraframe Guide to Loggia Structural Fixing
Excel spreadsheet
Created by Andrew Thomson 26th June 2012

3.3.5 Ultraframe LivinROOF/Loggia Extension Pre-Compliant requirements
Excel spreadsheet
Created by Andrew Thomson 15th June 2015

3.3.6 Ultraframe LivinROOM/Loggia Extension Pre-Compliant requirements
Excel spreadsheet
Created by Andrew Thomson 17th June 2015

3.3.7 Ultraframe: Thermal Model 2 Properties
Excel spreadsheet
Created by Andrew Thomson 11th May 2015

3.4 IDENTIFICATION AND USE OF THE JHAI LOGOS

Correct identification of approved Building Systems is desirable in order that purchasers and funding providers understand the status of products presented to them. Recipients are encouraged to make use of the Jhai System Approval Logo on marketing and technical documentation.

4.3 Indicative guidance relating to the construction of traditional elements of the work is contained in Section 5

4.3 Any element outside the scope of this approval shall be assessed for each use on site and any variations from either Ultraframe Ltd or Building Regulations (and associated) standards shall be assessed by a competent and qualified structural engineer experienced with the Extension Plus systems

4.4 This system approval relates to the Extensionsplus system as described in the technical guides referenced in 3.3 above. It is subject to the same exclusions contained therein and all other components and working practices are subject to the requirements of the Building Regulations, manufacturers installation guides and associated standards

4.5 This is a pre-fabricated system and as such annual assessment of Ultraframe Ltd QA process will be carried out as part of the technical audit for the Extension Plus product.

4.6 It is acknowledged that the U-Design software is used to provide a structural and thermal assessment of standard components and that this software factors in such things as specific geographic constraints.

4.7 It is understood that some installers may use their own version of the U-Design programme. This is certificate relates to calculations produced by Ultraframe only – other users may be included but subject to ongoing review

4.8 An assessment of the QA process between Ultraframe Ltd and the installers will be carried out as part of the inspection programme to demonstrate that the components are being used in accordance with Ultraframe recommendations. This is in addition to the site visits required to demonstrate compliance with the Building Regulations and associated standards.

4.9 No cutting or alteration of the structural members on site are permitted without obtaining written approval from Ultraframe Ltd

4.10 The component systems referenced are constructed/ manufactured in factory conditions and as such is designed to be erected within a short period of time. Construction should be continuous and preferably scheduled during periods of sustained dry weather through to the provision of the permanent roof covering as soon as reasonably possible.

4.11 Each extension will need to be appraised individually for compliance with the Building Regulations 2010 by jhai based upon the guidance contained in the current Approved Documents

4.12 An assessment as to whether the external cladding achieves a Class 0 (or classB-s3, d2) will be carried out on an individual basis based upon the site specific cladding/infill panel selection

4. Conditions of Use

4.1 The Ultraframe **Extensions^{plus}** System as assessed by this process is suitable for use as an extension to a single or multi occupancy residential buildings. The details and information contained within this approval may be suitable for buildings in other purpose groups where appropriate and upon further consideration and assessment by Jhai

4.2 The approval covers the elements of the superstructure only as contained in the technical standards referred to in item 3.3 above. Individual assessment of the ground conditions and base construction are excluded and will be assessed on a site specific basis using industry standard codes.



- 4.13 The external cladding and glazed area will be assessed for each individual project based upon the specified materials (unprotected areas) and boundary locations as referenced in Section 5 of these schedules
- 4.14 The system approval is limited to single storey buildings and as such fire resistance test standards of Part B of the Building Regulations and BS 476: Parts 20, 21 and 22 (as appropriate) will not be applicable.
- 4.15 Where the thermal separation is removed between the host structure and Extension Plus the glazed area of the extension should ordinarily be limited to 25% of the floor area + the area of any existing windows/doors enclosed by the extension.
- 4.16 Where the requirements of 4.15 is exceeded the use of Ultraframe area weighted U value calculator (referenced in 3.3) is accepted as demonstrating compliance with Schedule 1 of the Building Regulations 2010. Alternatively the provision of SAP calculations are also acknowledged as meeting the referenced standards. SAP calculations look at the whole building as extended and can often be more favourable approach but will require a more detailed survey to be undertaken
- 4.17 This system approval certificate is valid for a period of two years from the date of issue. This limitation is placed in order that the impact of new and changing relevant regulation can be assessed prior to re-issue
- 4.18 Note that this is a system approval of the Extensionsplus products only and additional site specific information may be requested that is not encompassed by the detail contained in the approval.

Signed on behalf of Jhai Ltd.

Andrew Crooks
Director of Technical Services & Learning

5. Extension Guidance

5.1 Introduction

The following is considered general guidance for construction work. It is accepted that there are other alternative methods of construction and Jhai will happily review such details if required

5.2 Foundations

Trench fill foundations are commonly favoured for domestic extensions but this is subject to further site investigation. These should be taken down into firm natural ground and are generally at least 750mm deep but other factors will be taken into account such as

- The depth of the existing house foundations;
- Presence of trees/roots
- Location and invert of drains

Preliminary investigative work, in the form of a trial hole, will identify the design of the existing foundations and provide cost certainty

Part A (Structure) of the building regulations gives further guidance for the design of foundations, however it is acknowledged that this is based upon the support of a 2.5storey domestic type structure. If you require further pragmatic guidance please contact a member of the Jhai team

5.3 Foundations and existing drains

Jhai requirement is to ensure that the drain complies with Part H of the Building Regulations. One consideration is to ensure that the excavations do not surcharge any drain running under or close to the extension

Drains running under and through the foundation must be isolated from the foundation with

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Jhai Ltd

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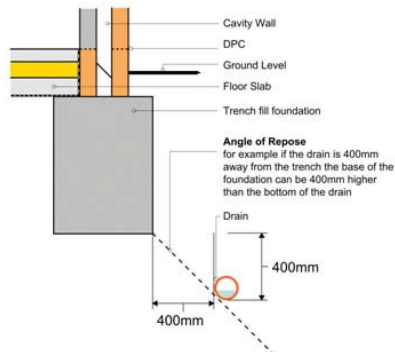
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shuttering. Existing Inspection chambers within the footprint of the extension are technically permissible under Building Regulations with the installation of a room sealed cover. However this may not be permitted by the water authority (see 5,7)



5.4 Drainage

It should be assumed that drainage systems serving more than a single dwelling are the responsibility of the sewerage undertaker. Upon appointment Jhai are obliged to notify the same of the work whereupon they will make contact with the contractor/client

Drainage is usually separated into foul water and rainwater drainage – ideally points of disposal should also be separate. Rainwater drainage should discharge to a new soakaway sited more than 5m from any building. The subsoil should be suitable for percolation drainage, where this is not possible or practicable connection into either a surface water sewer or combined sewer may be unavoidable.

The foul water should connect into the existing system – if as described previously the connection is via a new connection onto the public sewer then the Water Authorities consent may be necessary. It is worth noting that limits of cover (on top of the pipe) will determine bedding requirements – any pipe less than 600mm deep in gardens and 900mm deep in driveways will require protective bedding and cover in the form of concrete.

5.5 Ground Floor

The ground floor of your extension performs a number of tasks: it must keep out damp, provide a structural base and provide thermal insulation. Generally a ground floor is a multi-layered structure, the top soil under the extension is removed and a layer of compacted stone is placed over the site. This is covered or "blinded" with sand and a layer of 1200g polythene is then placed over the sand and lapped with the damp proof course in the wall. A layer of insulation (typically 100mm of Celotex, Kingspan or similar) is then provided and a concrete slab at least 100mm thick is poured over the insulation. This concrete can be float finished or a sand/cement screed applied at a later date to provide the finished internal floor. Variations on this general arrangement are as follows,

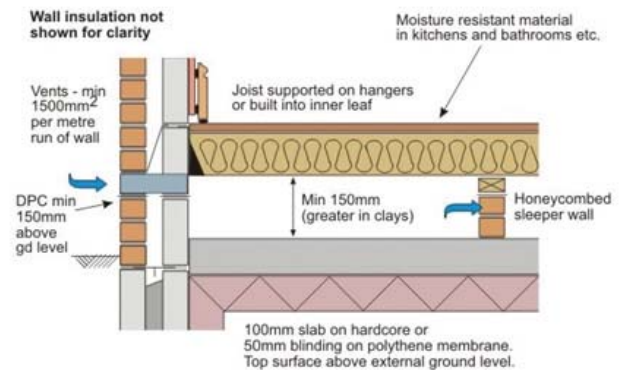
Solid Floor – As described above.

Finally, the floor is finished with a layer of wood (floating floor finish) or screed. If screed is used, it should be around 75mm thick to avoid cracking. Alternatively the insulation can be placed under the screed by following the insulation manufacturers details/specification.



Suspended Timber Floor

Timber joists are laid from wall to wall with a minimum gap of 150mm maintained between the underside of the floor joists and the concrete floor. A dpc should be laid underneath the timber floor and a cross flow of air, on opposing elevations, should be achieved. Insulation can be placed between the joists.



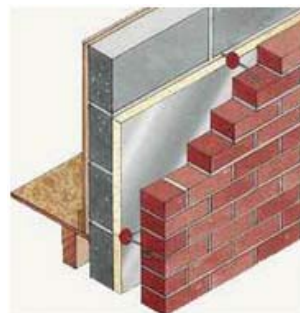
Battened solid

This method involves fixing timber boarding onto treated timber battens plugged and screwed into a concrete slab beneath. Insulation can be placed between the battens (fully filling the void) with a vapour check over.

It is worth noting that the damp proof layer in some instances can also act as a barrier to contaminants – again any preliminary investigative work will identify if any contaminants are present (e.g. radon or methane)

5.6 External Wall Construction **Cavity wall**

The wall should incorporate a dpc that is lapped to the damp proof membrane in the floor and to the existing DPC at junctions. The cavity should extend to at least 225mm below the DPC. The masonry must be tied to the existing by tooth bonding or proprietary stainless steel fixing profiles. A typical wall construction would comprise of 100mm blockwork, 100mm cavity with full or partial fill insulation and 100mm lightweight blockwork.



Loggia Columns

These are super insulated columns clad with OSB board and then powder coated coloured aluminium cladding panels.



In Extensions Plus, they are full height columns sat directly on the slab (or sat on a cill on the slab), two large columns at the corners and two large abutment columns. In addition, a varying number – depending upon extension style/shape – of small in-line Loggia columns are needed to ensure compliance with Building Regulations.

5.7 Windows / Ventilation

As a general guidance, glazing should not form more than 25% of the proposed floor area less any windows / openings lost at the abutment of the extension. However the Extensionsplus system allows an increase in these areas using the average U Value or SAP method of calculation (see 4.15 above).

If this is the case reference should be made to Ultraframe reference to the UValue of doors/windows being at least 1.0w/m2K

Trickle ventilation of around 8,000 mm2 should be provided to each habitable space. This could be in the form of windows that lock in the open position but will be subject to review on a case by case basis

Care should be taken if the extension covers the only window or door providing ventilation to another habitable part of the house (i.e. bedroom; lounge; Dining; etc). In this case alternative provision of both Background (trickle) and Purge (openable window) should be provided to the room

In this case means of escape from the room being enclosed may also be compromised – please speak to Jhai in this instance

Mechanical ventilation is required to non- habitable rooms such as Kitchens, Utility, Bath/Shower Rooms, WC's and Ensuite's formed as part any extension; or made worse by the proposals – if these rooms are windowless then over-run provision will need to be made to the extraction

Contacts

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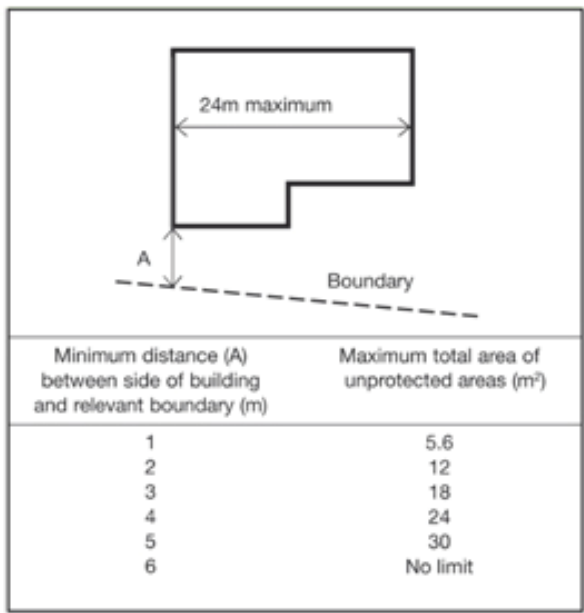
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5.8 Openings on Boundaries

There are limits as to the amount of openings permitted close to any boundary. The purpose of this is to prevent fire from spreading to adjoining property/land. If you are less than 1m from the boundary the maximum area permitted is 1.0m²

The further away you are the larger the openings can be. This can be expressed as either a physical area in m² or as a percentage of the wall. The diagram below provides some guidance but as always there are other methods of calculation so speak to Jhai for more specific case by case advice



Minimum distance between side of building and relevant boundary (m)	Maximum total percentage of unprotected area %
1	8
2.5	20
5	40
7.5	60
10	80
12.5	100

- Notes:
- a. Intermediate values may be obtained by interpolation.
 - b. For buildings which are fitted throughout with an automatic sprinkler system, see para 9.15.
 - c. The total percentage of unprotected area is found by dividing the total unprotected area by the area of rectangle that encloses all the unprotected areas and multiplying the result by 100.

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