

Comhairle Cathrach Chorcaí Cork City Council



Halla na Cathrach
Corcaigh
T12 T997

City Hall
Cork
T12 T997

Brendan O'Mahony,
Apartment 19,
Blackrock House,
Blackrock Village,
Cork T12 XOYT

18th July, 2018

Re: R418/18 - Section 5 Declaration
Property: Apartment 19, Blackrock House, Blackrock Village, Cork

Dear Sir/Madam,

I am asked by Mr. Patrick Ledwidge, Director of Services, Strategic Planning & Economic Development to refer to your request received on the 19th June, 2018 for a Section 5 Declaration regarding whether changing the type of glass in windows as the building is a listed structure is development or is exempted development.

Having regard to:-

- The Conservation Officer's report (copy attached) and
- Sections 2, 3, 4 & 57 of the Planning and Development Act 2000 (as amended), and
- Articles 6 & 9 of the Planning and Development Regulations, 2001 (as amended),

It is considered that changing the type of glass in windows as the building is a listed structure at Apartment 19, Blackrock House, Blackrock Village, Cork **IS DEVELOPMENT and IS NOT EXEMPTED DEVELOPMENT.**

Yours faithfully,


Senior Staff Officer
Strategic Planning & Economic
Development Directorate

Kevin

Mary Doyle

From: Pat Ruane
Sent: 17 July 2018 12:40
To: Mary Doyle
Subject: RE: Section 5 declaration request on Protected Structure (ref. R481/18)

Mary,

I have examined the Section 5 application and inspected the site from the exterior. The Pilkington spacia glazing is, at a minimum, just over 6mm thick in place of 3 to 4mm for older single glazing. In addition, each pane has a small black or silver dot, clearly visible in a repetitive pattern on each of the twelve panes that make up these 6 over 6 timber sash windows.

The building is a protected structure PS493, and is rated as of 'National' importance in the National Inventory of Architectural Heritage
<http://www.buildingsofireland.ie/niah/search.jsp?type=record&county=CC®no=20868078>

The Department of Culture, Heritage & the Gaeltacht has issued statutory guidelines relating to the built heritage: 'Architectural heritage protection, guidelines for planning authorities'.
<https://www.chg.gov.ie/app/uploads/2015/07/Architectural-Heritage-Protection-Guidelines-2011.pdf>
Chapter 10 deals with windows and doors in historic buildings. Section 10.7.3 states that inserting double-glazed units into existing historic windows is problematic for visual and functional reasons. Section 10.7.4 advises that internal secondary glazing is, however, acceptable subject to appropriate design to resolve any issues with, for example, timber shutters.

The Department has published a specific technical advice document for windows:
<https://www.chg.gov.ie/app/uploads/2015/07/Windows-A-Guide-to-the-Repair-of-Historic-Windows-2007.pdf>
Page 42 again deals with the impact of double-glazing of historic windows, and expresses serious concerns about the impact of this on historic windows. It again suggests that appropriately-designed secondary glazing is more suitable for achieving sound and thermal improvement.

Because of the exceptional importance of the building, the negative visual impact of the new glazing system, the potential for inappropriate precedent on this recently-subdivided but carefully-conserved structure, and in the light of departmental statutory guidance, I believe the use of Pilkington spacia replacement glazing will have a negative impact on the special character of the structure and should not be permitted.

I will be happy to liaise with the applicant on an approach to thermal upgrading using other methods if he is happy for me to do so.

Pat Ruane
Conservation Officer

From: Kevin O'Connor
Sent: 11 July 2018 12:02
To: Pat Ruane
Cc: Mary Doyle
Subject: FW: Section 5 declaration request on Protected Structure (ref. R481/18)
Importance: High

Pat,
We need to get a decision out on this one next week; could you please liaise with Mary Doyle in relation to this, particularly in relation to section 57(1) of the PDA 2000.
Thanks,

PLANNER'S REPORT Ref. R418 /18		Cork City Council Development Management Strategic Planning and Economic Development
Application type	Section 5 Declaration	
Description	<i>Whether changing the type of glass in windows as the building is a listed structure requires planning permission</i>	
Location	Apt. 19 Blackrock House, Blackrock Village.	
Applicant	Brendan O'Mahony	
Date	17/07/2018	
Recommendation	<i>Is Development and Is Not Exempted Development</i>	

In this report 'the Act' means the Planning and Development Act 2000 (as amended) and 'the Regulations' means the Planning and Development Regulations 2001 (as amended), unless otherwise indicated.

1. Requirements for a Section 5 Declaration

Section 5(1) of the Planning and Development Act 2000 as amended states,

5.—(1) If any question arises as to what, in any particular case, is or is not development or is or is not exempted development within the meaning of this Act, any person may, on payment of the prescribed fee, request in writing from the relevant planning authority a declaration on that question, and that person shall provide to the planning authority any information necessary to enable the authority to make its decision on the matter.

The requirements for making a section 5 declaration are set out in the Act.

2. The Question before the Planning Authority

In framing the question to the planning authority, the applicant states in Q2 of the application form:

"Can I change the type of glass in my windows as the building is a listed structure?"

3. Site Description

The property in question is a two storey detached dwelling with single storey elements in an established residential area of detached dwellings.

4. Planning History

Two planning applications are referred to which are both attached to this site:

TP03/27645: Permission for a mixed use development. Building is a protected structure.

TP07/32206: Alterations and additions to existing approved scheme (T.P.03/27645) as follows: modifications to approved internal layouts, to provide 1 no. extra apartment within the Convent Building (new total 27 no. apartments)

5. Legislative Provisions

5.1 *The Act*

Section 2(1),

"works" includes any act or operation of construction, excavation, demolition, extension, alteration, repair or renewal and, in relation to a protected structure or proposed protected structure, includes any act or operation involving the application or removal of plaster, paint,

wallpaper, tiles or other material to or from the surfaces of the interior or exterior of a structure.

Section 3(1),

In this Act, “development” means, except where the context otherwise requires, the carrying out of any works on, in, over or under land or ‘the making of any material change in the use of any structures or other land’

Section 4(1)(h),

The following shall be exempted developments for the purposes of this Act-development consisting of the carrying out of works for the maintenance, improvement or other alteration of any structure, being works which affect only the interior of the structure or which do not materially affect the external appearance of the structure so as to render the appearance inconsistent with the character of the structure or of neighbouring structures;

Section 4(2),

Section 4(2) provides that the Minister may, by regulations, provide for any class of development to be exempted development. The principal regulations made under this provision are the Planning and Development Regulations 2001-2013.

Section 5(1),

(See section 1 of this report)

Section 57(1),

Notwithstanding section 4(1)(h)(i)(j)(k), or (l) and any regulations made under section 4(2), the carrying out of works to a protected structure, or a proposed protected structure, shall be exempted development only if those works would not materially affect the character of -

- (a) The structure, or
- (b) Any element of the structure which contributes to its special architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest.

Section 177U (9) (screening for appropriate assessment)

In deciding upon a declaration or a referral under section 5 of this Act a planning authority or the Board, as the case may be, shall where appropriate, conduct a screening for appropriate assessment in accordance with the provisions of this section.

5.2 The Regulations

Article 9 (1)

Development to which article 6 relates shall not be exempted development for the purposes of the Act –

- (a) (i) if the carrying out of such development would... contravene a condition attached to a permission under the Act or be inconsistent with any use specified in a permission under the Act,
- (a) (viii) consist of or comprise the extension, alteration, repair or renewal of an unauthorised structure or a structure the use of which is an unauthorised use,

Article 10 (1)

Development which consists of a change of use within any one of the classes of use as specified in Part 4 of Schedule 2, shall be exempted development for the purposes of the Act, provided that the development, if carried out would not –

- (c) be inconsistent with any use specified or included in such a permission, or
- (d) be development where the existing use is an unauthorised, save where the change of use consists of resumption of a use which is not unauthorised and which has not been abandoned

6. ASSESSMENT

5.1 Development

The first issue for consideration is whether or not the matter at hand is ‘development’.

‘Development’ as defined in the Act (3)(1) comprises two possible chief components: ‘the carrying out of any works on, in, over or under land’, or ‘the making of any material change in the use of any structures or other land’. In order to ascertain whether or not the subject use is considered to be development as so defined, consideration must first be given to whether any works on, in, over or under land have or will be carried out, and secondly to whether any material change in the use of any structures or other land have or will take place.

‘Works’ is defined in section 2(1) of the Act as ‘the carrying out of any works on, in, over, or under land’ including ‘any act or operation of construction, excavation, demolition, extension, alteration, repair or renewal, and in relation to a protected structure or proposed protected structure, includes any act or operation involving the application or removal of plaster, paint wallpaper, tiles or other material to or from the surfaces of the interior or exterior of a structure.’

I consider that the proposed element constitutes development as it comprises of works which includes ...” any act or operation involving the application or removal of plaster, paint wallpaper, tiles or other material to or from the surfaces of the interior or exterior of a structure”

5.2 Exempted development

The next issue for consideration is whether or not the matter at hand is exempted development. The details have been referred to Cork City’s Conservation Officer who states:

“I have examined the Section 5 application and inspected the site from the exterior. The Pilkington spacia glazing is, at a minimum, just over 6mm thick in place of 3 to 4mm for older single glazing. In addition, each pane has a small black or silver dot, clearly visible in a repetitive pattern on each of the twelve panes that make up these 6 over 6 timber sash windows.

The building is a protected structure PS493, and is rated as of ‘National’ importance in the National Inventory of Architectural Heritage
<http://www.buildingsofireland.ie/niah/search.jsp?type=record&county=CC®no=20868078>

The Department of Culture, Heritage & the Gaeltacht has issued statutory guidelines relating to the built heritage: ‘Architectural heritage protection, guidelines for planning authorities’.
<https://www.chg.gov.ie/app/uploads/2015/07/Architectural-Heritage-Protection-Guidelines-2011.pdf>

Chapter 10 deals with windows and doors in historic buildings. Section 10.7.3 states that inserting double-glazed units into existing historic windows is problematic for visual and functional reasons. Section 10.7.4 advises that internal secondary glazing is, however, acceptable subject to appropriate design to resolve any issues with, for example, timber shutters.

The Department has published a specific technical advice document for windows:
<https://www.chg.gov.ie/app/uploads/2015/07/Windows-A-Guide-to-the-Repair-of-Historic-Windows-2007.pdf>

Page 42 again deals with the impact of double-glazing of historic windows, and expresses serious concerns about the impact of this on historic windows. It again suggests that appropriately-designed secondary glazing is more suitable for achieving sound and thermal improvement.

Because of the exceptional importance of the building, the negative visual impact of the new glazing system, the potential for inappropriate precedent on this recently-subdivided but

carefully-conserved structure, and in the light of departmental statutory guidance, I believe the use of Pilkington spacia replacement glazing will have a negative impact on the special character of the structure and should not be permitted.”

As per the Conservation Officer’s assessment and recommendation, and taking Section 57 of the Planning and Development Act into account, the proposal would materially affect the character of the structure and elements of the structure. Therefore, the proposed glazing is not exempted development.

7. ENVIRONMENTAL ASSESSMENT

7.1 Screening for Environmental Impact Assessment

Having regard to the contents of Article 103 (as amended by Article 14 of the Planning and Development (Amendment) (No 3) Regulations 2011) and Schedule 7 of the Planning and Development Regulations 2001 (as amended) it is considered that the proposed development by reason of its nature, scale and location would not be likely to have significant effects on the environment. Accordingly it is considered that an environmental impact statement is not required to be submitted.

7.2 Screening for Appropriate Assessment

Section 177U (9) of the Act requires planning authorities to screen applications for a section 5 declaration for appropriate assessment. The provisions of the *Habitats Directive*, the *Appropriate Assessment Guidelines for Planning Authorities 2009* (revised 2010) and the Act are noted. The relevant European sites are the Cork Harbour SPA (site code 004030) and the Great Island Channel cSAC (site code 001058). Having regard to the location of the proposed development site relative to these European sites and related watercourses and to the nature and scale of the proposed development it is considered that the proposed development would not affect the integrity of the European sites referred to above. Accordingly it is considered that appropriate assessment is not required.

8. Conclusion

The question has been asked whether *changing the type of glass in windows as the building is a listed structure requires planning permission*

As per the Conservation Officer’s assessment and recommendation, and taking Section 57 of the Planning and Development Act into account, the proposal would materially affect the character of the structure and elements of the structure. Therefore, the proposed change of glazing is **not** exempted development.

9. RECOMMENDATION

In view of the above and having regard to —

- Sections 2, 3, 4 and 57 of the Planning and Development Act 2000 (as amended), and
- Articles 6, and 9 of the Planning and Development Regulations 2001 (as amended),

It is considered that proposed changing the type of glass in windows in the building which is a listed structure **Is Development** and is **Not Exempted Development**.

Mary Doyle
Executive Planner

Mary Doyle

From: Pat Ruane
Sent: 17 July 2018 12:40
To: Mary Doyle
Subject: RE: Section 5 declaration request on Protected Structure (ref. R481/18)

Mary,

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Pat Ruane
Conservation Officer

From: Kevin O'Connor
Sent: 11 July 2018 12:02
To: Pat Ruane
Cc: Mary Doyle
Subject: FW: Section 5 declaration request on Protected Structure (ref. R481/18)
Importance: High

Pat,
We need to get a decision out on this one next week; could you please liaise with Mary Doyle in relation to this, particularly in relation to section 57(1) of the PDA 2000.
Thanks,

Kevin

From: Kevin O'Connor
Sent: 22 June 2018 09:17
To: Pat Ruane
Subject: Section 5 declaration request on Protected Structure (ref. R481/18)

Pat,

A formal section 5 declaration request has been received relating to the changing of glass at Apartment 19, Blackrock House, Blackrock Village (a.k.a. the former Ursuline Convent, PS 493), i.e. does changing the glass need planning permission. Further to our previous discussions in this regard, would you please comment on this request from a conservation perspective? I have the file on my desk, I can arrange for you to get it.

Thanks,

Kevin

Kevin O'Connor
Senior Executive Planner
Strategic Planning and Economic Development
Cork City Council, City Hall, Cork T12 T997

Tel: + 353 (0) 21 492-4715
Fax: + 353 (0) 21 492-4706
Email: kevin_oconnor@corkcity.ie
Web: www.corkcity.ie

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Kevin,
Section 5 For report
Due 19/07/18
RM

COMHAIRLE CATHRACH CHORCAÍ
CORK CITY COUNCIL

Strategic Planning & Economic Development Directorate,
Cork City Council, City Hall, Anglesea Street, Cork.

R-Phost/E-Mail planning@corkcity.ie
Fón/Tel: 021-4924564/4321
Líonra/Web: www.corkcity.ie

SECTION 5 DECLARATION APPLICATION FORM
under Section 5 of the Planning & Development Acts 2000 (as amended)

1. POSTAL ADDRESS OF LAND OR STRUCTURE FOR WHICH DECLARATION IS SOUGHT

APT. 19, BLACK ROCK HOUSE, BLACK ROCK VILLAGE,
CORK T12 X0YT

2. QUESTION/ DECLARATION DETAILS

PLEASE STATE THE SPECIFIC QUESTION FOR WHICH A DECLARATION IS SOUGHT:

Sample Question: Is the construction of a shed at No 1 Wall St, Cork development and if so, is it exempted development?

Note: only works listed and described under this section will be assessed under the section 5 declaration.

CAN I CHANGE THE TYPE OF GLASS USED IN
MY WINDOWS AS THE BUILDING IS A LISTED
STRUCTURE?

ADDITIONAL DETAILS REGARDING QUESTION/ WORKS/ DEVELOPMENT:

(Use additional sheets if required).

WE WISH TO UPGRADE THE GLASS IN OUR SIX WINDOWS
FROM SINGLE GLAZED FLOAT GLASS TO
PINKINGTON SPACIA HEAT RETENTION ULTRA THIN
DOUBLE GLAZING, WHILST KEEPING THE EXISTING WINDOW
FRAMES

CORK CITY COUNCIL
PLANNING DIRECTORATE
19 JUN 2018
Ref. No. R481/18

3. APPLICATION DETAILS

Answer the following if applicable. Note: Floor areas are measured from the inside of the external walls and should be indicated in square meters (sq. M)

(a) Floor area of existing/proposed structure/s		
(b) If a domestic extension, have any previous extensions/structures been erected at this location after 1 st October, 1964, (including those for which planning permission has been obtained)?	Yes <input type="checkbox"/> No <input type="checkbox"/>	If yes, please provide floor areas. (sq m) _____
(c) If concerning a change of use of land and / or building(s), please state the following:		
Existing/ previous use (please circle)	Proposed/existing use (please circle)	
-----	-----	
-----	-----	
-----	-----	

4. APPLICANT/ CONTACT DETAILS

Name of applicant (principal, not agent):		BRENDAN O' MAHONY	
Applicants Address	APARTMENT 19, BLACKROCK HOUSE, BLACKROCK VILLAGE DUBLIN 12 X0YT		
Person/Agent acting on behalf of the Applicant (if any):	Name:		
	Address:		
	Telephone:		
	Fax:		
	E-mail address:		
Should all correspondence be sent to the above address? <small>(Please note that if the answer is 'No', all correspondence will be sent to the Applicant's address)</small>		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

5. LEGAL INTEREST

Please tick appropriate box to show applicant's legal interest in the land or structure	A. Owner <input checked="" type="checkbox"/>	B. Other <input type="checkbox"/>
Where legal interest is 'Other', please state your interest in the land/structure in question		
If you are not the legal owner, please state the name and address of the owner if available		

6. I / We confirm that the information contained in the application is true and accurate:

Signature: *[Handwritten Signature]*

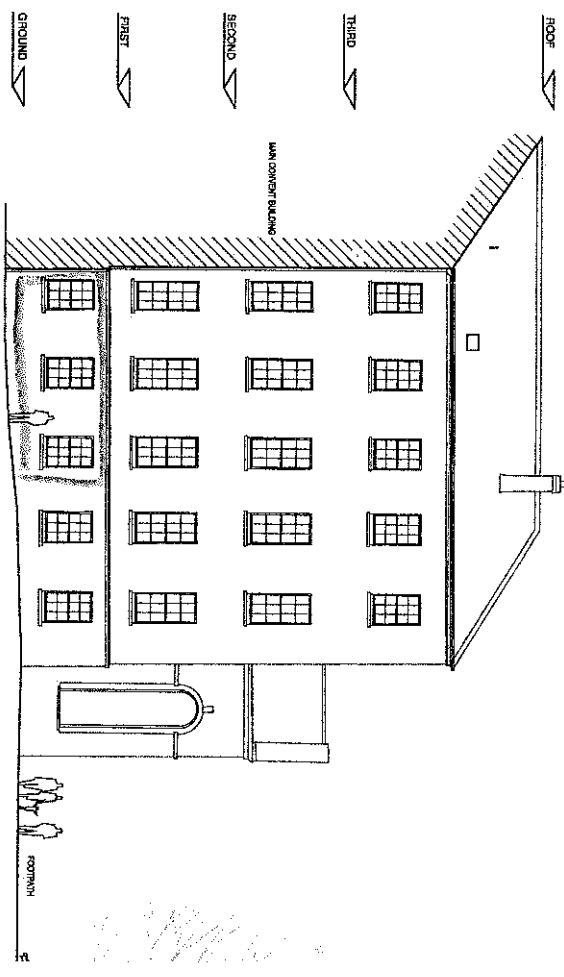
Date: 17/6/2018

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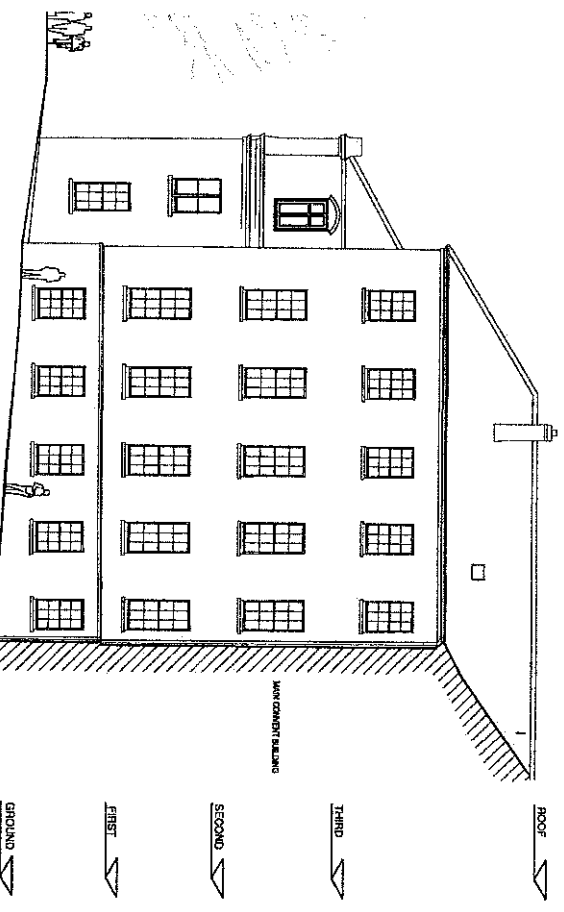
- (1) Plan, drawings and maps accompanying an application for a Section 5 Declaration on exempted development shall all be in metric scale and comply with the following requirements:-

* NOTE 2 COPIES OF PLANS & PARTICULARS ARE REQUIRED

- (a) site or layout plans shall be drawn to a scale of not less than 1:500 (which shall be indicated thereon), the site boundary shall be clearly delineated in red, and buildings, roads, boundaries, septic tanks and percolation areas, bored wells, significant tree stands and other features on, adjoining or in the vicinity of the land or structure to which the application relates shall be shown, land which adjoins, abuts or is adjacent to the land to be developed and which is under the control of the applicant or the person who owns the land, which is subject of the application, shall be outlined in blue and wayleaves shall be shown in yellow.
 - (b) other plans, elevations and sections shall be drawn to a scale of not less than 1:200 (which shall be indicated thereon), or such other scale as may be agreed with the Planning Authority prior to the submission of the application in any particular case,
 - (c) the site layout plan and other plans shall show the level or contours, where applicable, of any land and the proposed structures relative to Ordnance survey datum or a temporary local benchmark,
 - (d) drawings of elevations of any proposed structure shall show the main features of any buildings which would be contiguous to the proposed structure if it were erected, whether on the application site or in the vicinity at a scale of not less than 1:200, as may be appropriate,
 - (e) plans relating to works comprising reconstruction, alteration or extension of a structure shall be so marked or coloured as to distinguish between the existing structure and the works proposed,
 - (f) plans and drawings of floor plans, elevations and sections shall indicate in figures the principal dimensions (including overall height) of any proposed structure and the site, and site layout plans shall indicate the distances of any such structure from the boundaries of the site,
 - (g) any map or plan which is based on an Ordnance Survey map shall indicate the relevant Ordnance survey sheet number,
 - (h) the north point shall be indicated on all maps and plans other than drawings of elevations and sections,
 - (i) plans and drawings shall indicate the name and address of the person by whom they were prepared.
- (2) A planning application for development consisting of or comprising the carrying out of works to a protected structure, or proposed protected structure or to the exterior of a structure which is located within an architectural conservation area in a draft of a proposed development plan or a proposed variation of a development plan, shall, in addition to meeting the requirements above, be accompanied by such photographs, plans and other particulars as are necessary to show how the development would affect the character of the structure.
 - (3) A planning authority may, by notice in writing, require an applicant to provide additional copies of any plan, drawing, map, photograph or other particular, which accompanies the application.

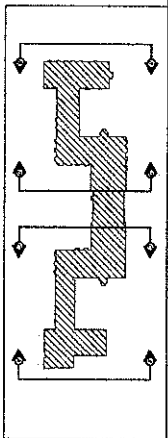


WEST ELEVATION C-C



EAST ELEVATION D-D

REV 01/11/2014
 DWT 19



NO.	DATE	REVISION

MAHONY PIKE
 Architectural - 11 Pine Street, Framingham, MA 01901
 508-848-1500
 Fax: 508-848-1505
 www.mahonypike.com

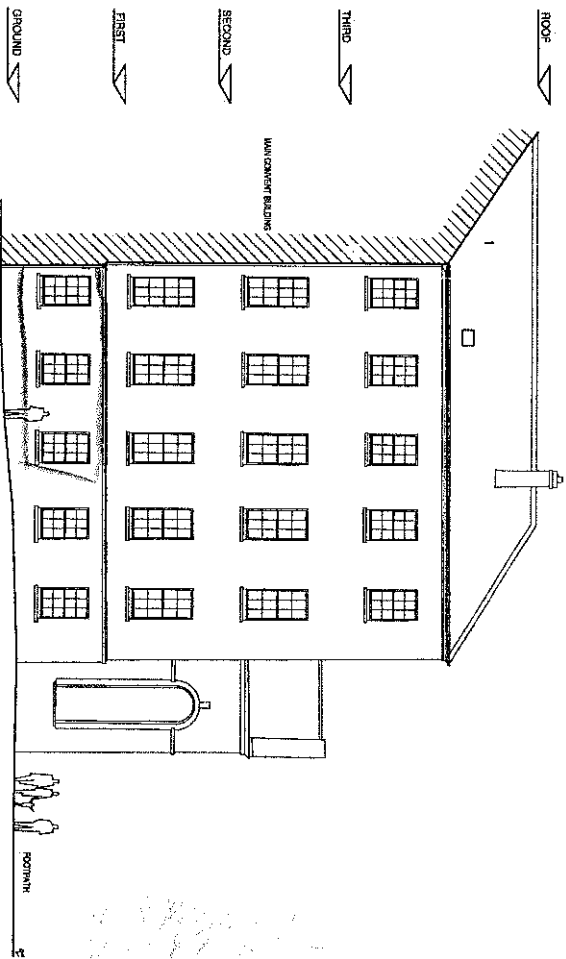
PROJECT NO. 0566
DRAWING NO. ELEVATIONS C-C AND D-D
DATE 12/17/10

CLIENT Merrion Property Group

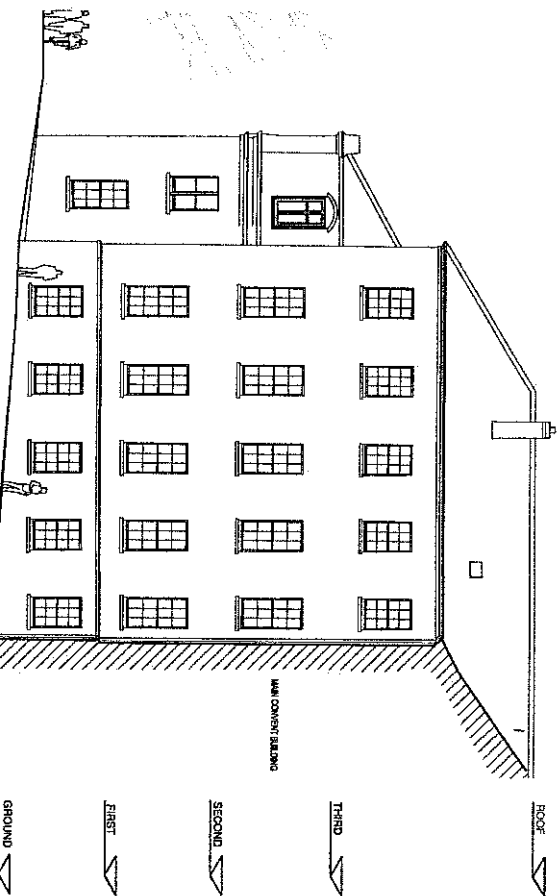
LOCATION Blackrock, Cork
PROJECT Refurb Works To Ursuline Convent

SCALE 1/200
DRAWN BY DWT
CHECKED BY [Signature]

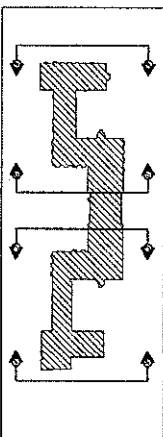
THESE DRAWINGS ARE THE PROPERTY OF MAHONY PIKE ARCHITECTURAL, INC. AND ARE TO BE USED ONLY FOR THE PROJECT AND LOCATION SPECIFICALLY IDENTIFIED HEREON.



WEST ELEVATION C-C



EAST ELEVATION D-D



PLAN DATE: 05/24/2018

SCALE:



MAHONY PIKE

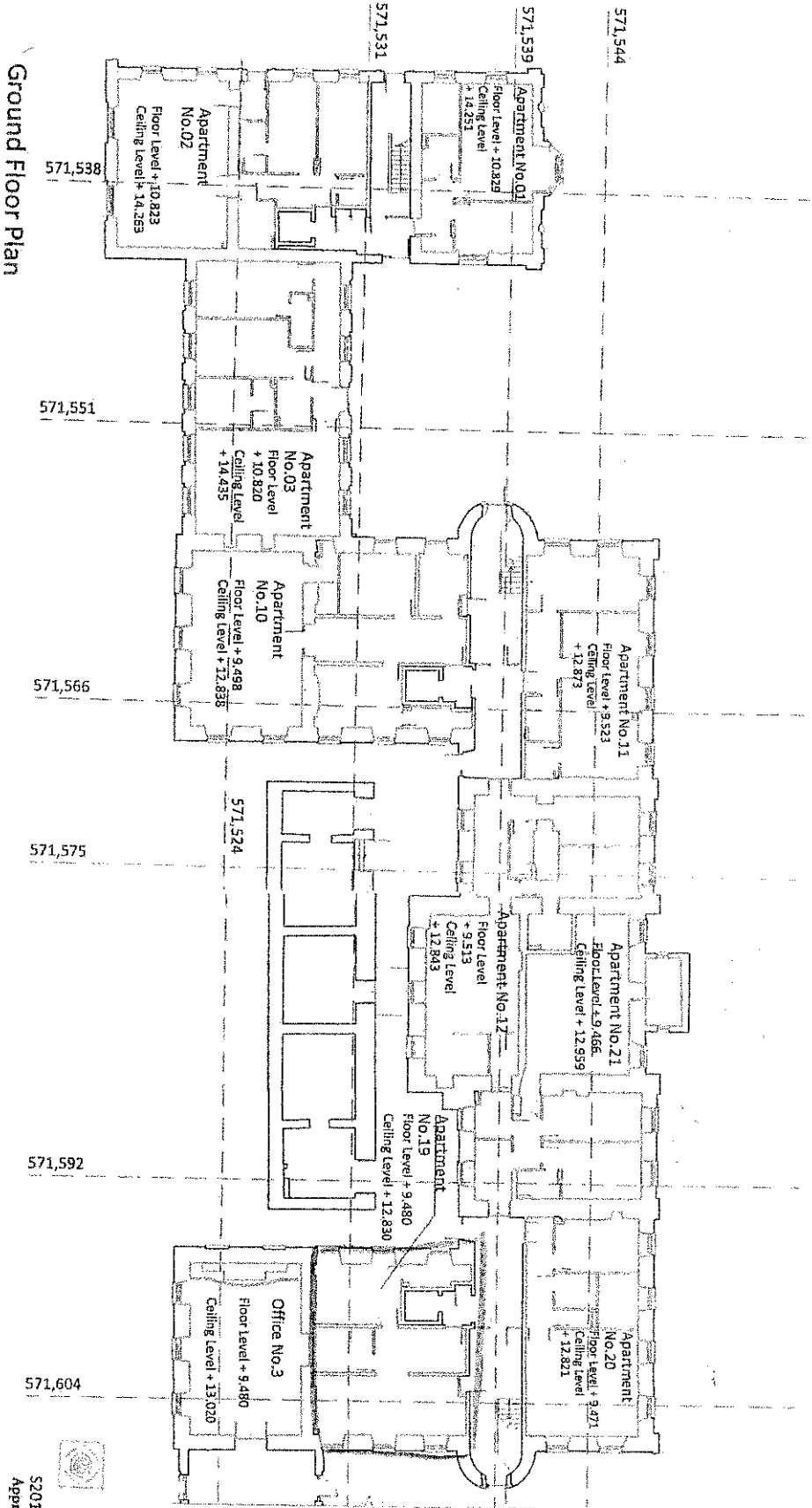
Architectural Design Group
 2500 Lakeville Road
 Lakeville, MA 01746
 Phone: (978) 885-1277
 Fax: (978) 885-1278
 www.mahonypike.com

Client: Blackrock, Cork

Client: Meriton Property Group

PROJECT No. 0866
 DRAWING No. ELEVATIONS C-C AND D-D
 DATE 07/20/18
 SCALE 1:200
 PROJECT

THIS DRAWING IS THE PROPERTY OF MAHONY PIKE ARCHITECTURAL DESIGN GROUP

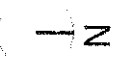


see drawing ELE00-01

Do not scale from drawings.

BREATHON + BERNIE O'MAHONY
APT - 19

PRA Map.
Apartment No's 1, 2, 3, 10, 11, 12,
19, 20, 21 & Office No. 3
Blackrock House,
Blackrock Village,
Blackrock,
Cork.



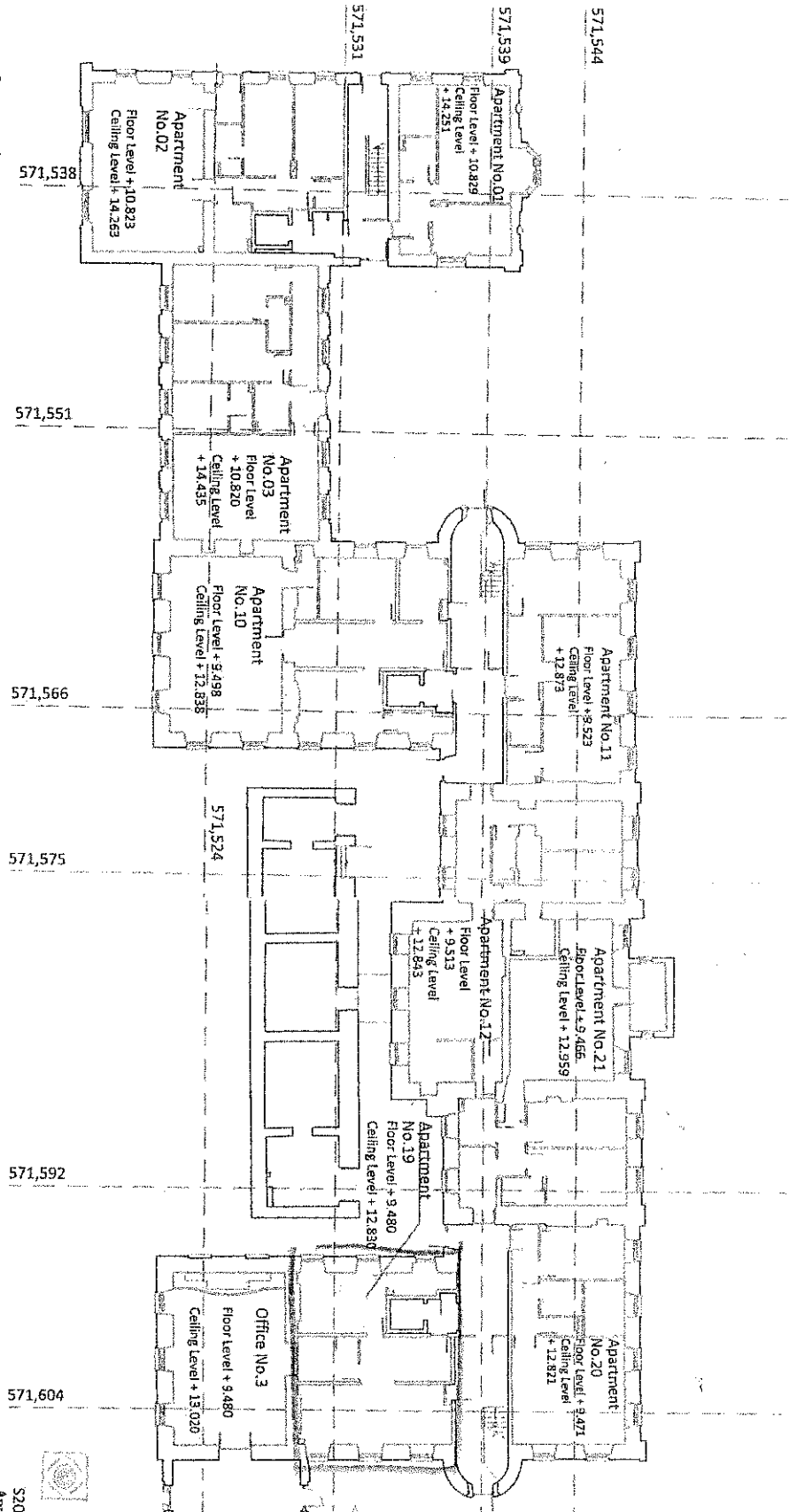
*This reference map shall not be regarded
as a change to the layout of the scheme must be made
by way of a new application for approval.*

LAND REGISTRY
Chártaim na Talún
Scheme Map
S2016LR009306E
Approved For Registration Purposes.

SIGNED *Jenny Hughes*
Dated 8.8.16

Plan No.2

SCALE	1:250 @ A3
DRAWING NO.	4LE00
PROJECT NO.	0689
DRAWING DATE	2016
REVISION	A



see drawing eLE00-01

Ground Floor Plan

Do not scale from drawings.

PRA Map.
Apartment No's 1, 2, 3, 10, 11, 12,
19, 20, 21 & Office No.3
Blackrock House,
Blackrock Village,
Blackrock.
Cork.



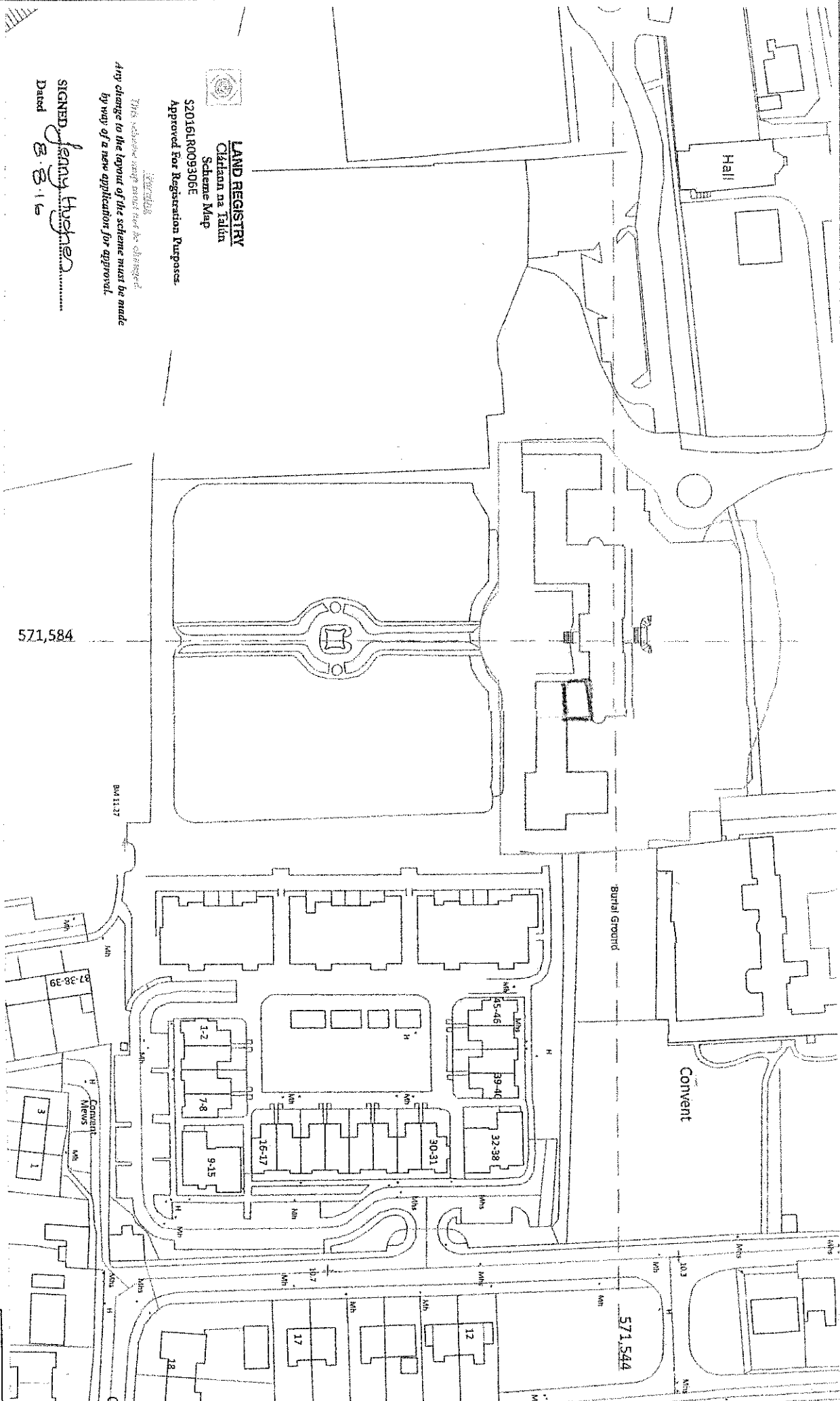
LAND REGISTRY
Clárann na Tithí
Scheme Map
S2016LR009306E
Approved For Registration Purpose.

Any change to the layout of the scheme must be made by way of a new application for approval.

SIGNED: *Jenny Hooper*
Dated: 8.8.16

SCALE	1:250 @ A3
DRAWN BY	LB
PROJECT No.	0966
DRAWING No.	01E00
	A

Plan No.2



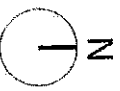
LAND REGISTRY
 Clárán na Taidin
 Scheme Map
 S2016LR009306E
 Approved for Registration Purposes.

*This scheme map must not be changed.
 Any change to the layout of the scheme must be made
 by way of a new application for approval.*

SIGNED *Jenny Hughes*
 Dated 8.3.16

571,584

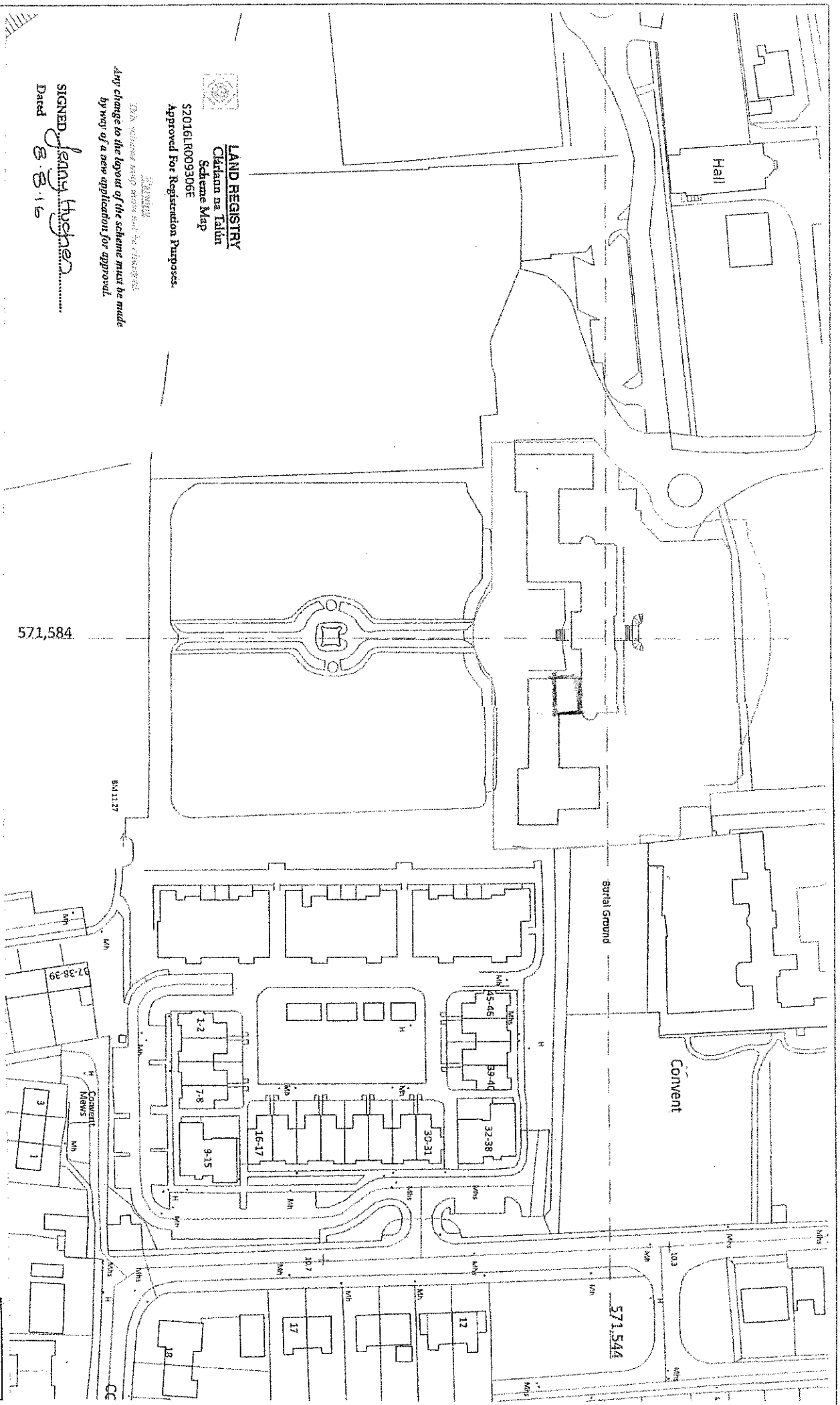
BM 11.127




Blackrock House / *BRENDAN + ROBYN O'MATHUNA*
 Site Location
 Ordnance Survey Map ITM Coordinates Extracted from Map Sheets Reference Nos.
 6383-15 & 6383-20.
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 Do not scale from drawings

Plan No.1

SCALE	1:1000 @ A3
DRAWN BY	LB
CHECKED BY	DSB
DATE	04.11.15
APP. NO.	A




LAND REGISTRY
 Clárann na Talamh
 Scheme Map
 S2016LR009306E
 Approved For Registration Purposes.

*In volume map shown and to be changed
 Any change to the layout of the scheme must be made
 by way of a new application for approval.*

SIGNED *Jenny Hughes*
 Dated 8.8.16

571,584

BM 1117

Burial Ground

CONVENT

571,544

Blackrock House

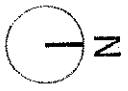
Site Location

Ordnance Survey Map ITM Coordinates Extracted from Map Sheets Reference Nos. 6383-15 & 6383-20.

Ordnance Survey Ireland License No. AR 0005016

Copyright Ordnance Survey Ireland and Government of Ireland

Do not scale from drawings

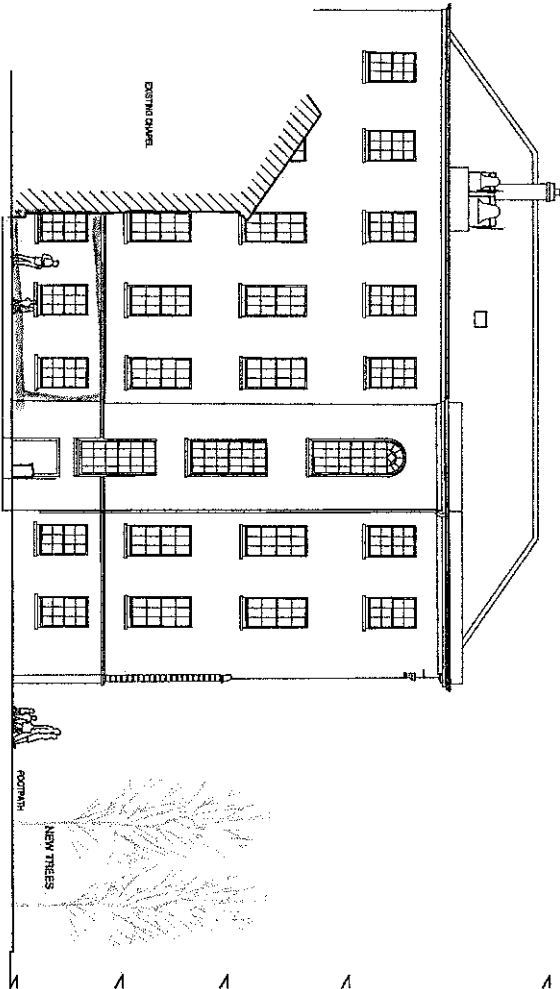
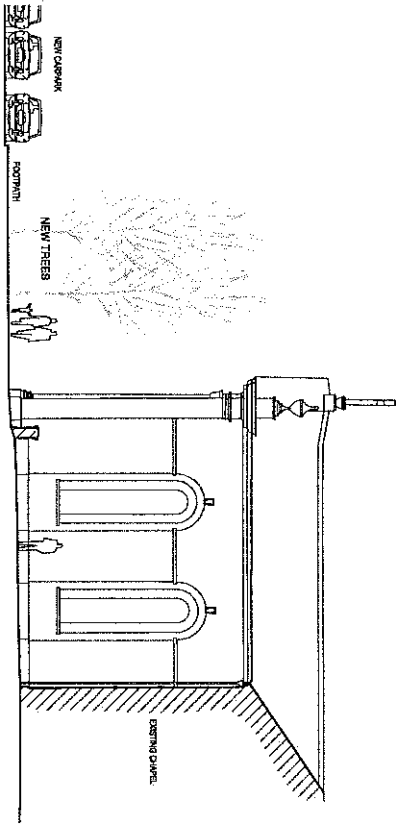


Plan No.1

SCALE	1:1000 @ A3
DATE	18
DESIGNER	DES
CHECKED	A

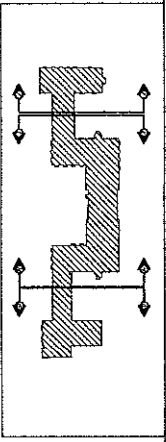
WEST ELEVATION E-E

EAST ELEVATION F-F



WEST ELEVATION G-G

EAST ELEVATION H-H



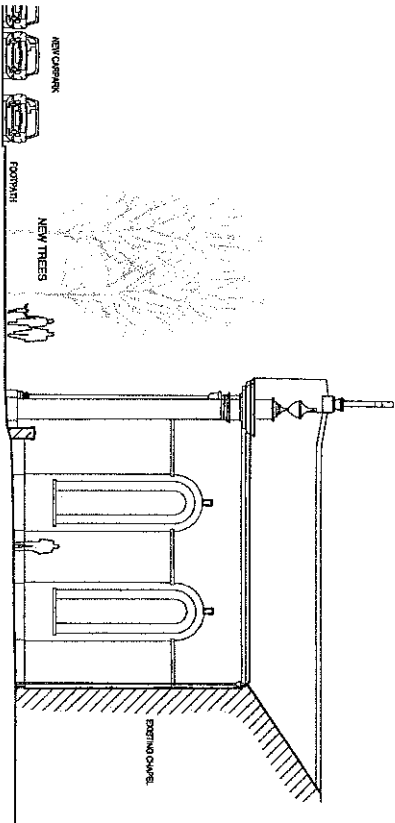
Brew at Berne O'Mahony
APT. #4

REV.	DATE	DESCRIPTION

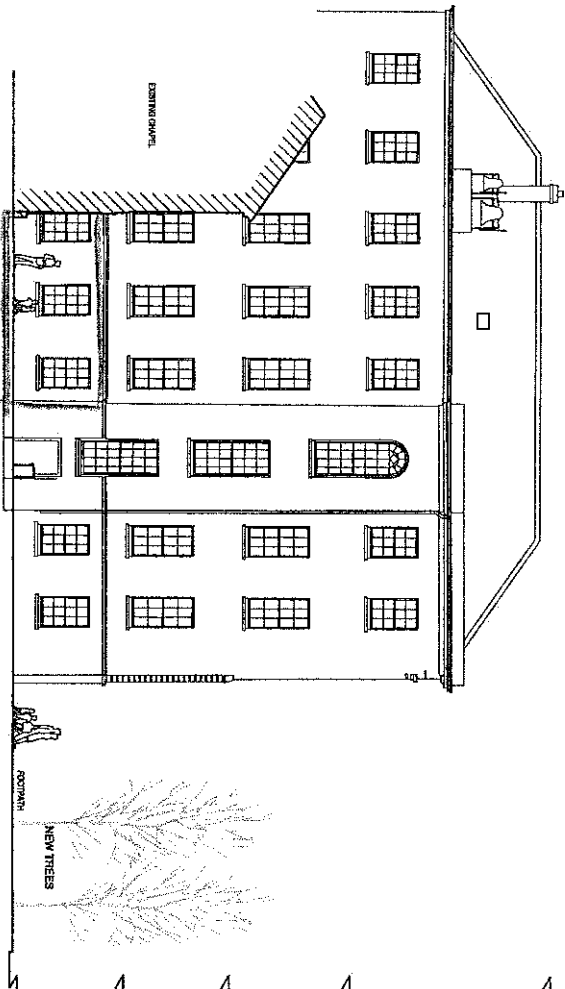
MAHONY PIKE Architecture Urban Design Sustainability 1000-10th Street, 4th Floor, New York, NY 10001 Phone: 212 951 2271 Fax: 212 951 2272 Project: Retail Works To Upscale Convents Location: Blackrock, Cork Client: Merrion Property Group	PROJECT NO.: 0665	PROJ. ID: AS
	DRAWING NUMBER: 106-01	DRAWING STATUS: 1:200
DRAWING TITLE: ELEVATIONS G-G AND H-H		DATE: 08/12/2008

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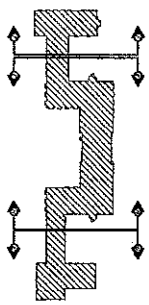
WEST ELEVATION E-E



WEST ELEVATION G-G



EAST ELEVATION H-H



EAST ELEVATION H-H

NO.	DATE	DESCRIPTION	SCALE

MARION PIKE
 Architectural (Urban Design / Sustainability)
 7050 West 1st Avenue, Suite 100, Denver, CO 80202
 TEL: 303.551.4272 FAX: 303.551.4275
 11500 East Hampden Avenue, Suite 200, Denver, CO 80231
 TEL: 303.551.4272 FAX: 303.551.4275

PROJECT: **Neuro Works To Upside Convent**

LOCATIONS: **Blackrock, Cork**

CLIENT: **Merrion Property Group**

DATE: 11-14-2023

PROJECT NO.: **0666**

DRAWING NO.: **A5**

SCALE: **AS SHOWN**

COMPARATIVE: **CONCEPT**

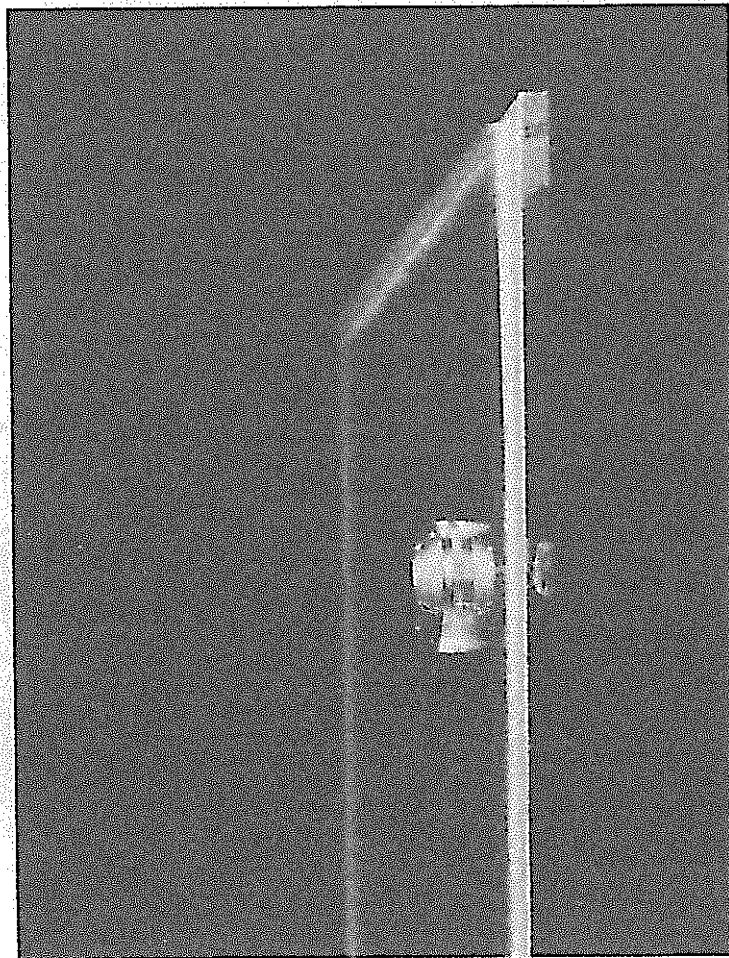
PROJECT TITLE: **ELEVATIONS G-G AND H-H**

DATE PLOTTED: **11/20/23**

OPERATOR: **AKG**

THIS DRAWING IS THE PROPERTY OF MARION PIKE ARCHITECTS AND SHOULD NOT BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, WITHOUT THE WRITTEN PERMISSION OF MARION PIKE ARCHITECTS.

Pilkington Spacia™ STII



Technical Datasheet

Technical datasheet

Pilkington Spacia™ STII

Values

Thickness	6.2 mm
Light transmission	78%
Solar transmission	66%
Light reflection outside	13%
U-value *	1.1W/m ² K
(* measured value in accordance to EN 674)	

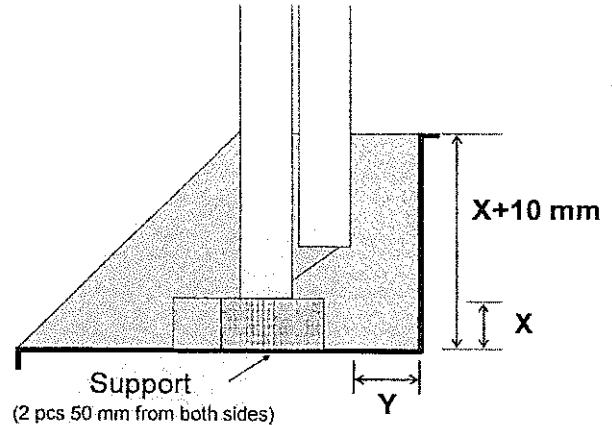
Dimensions

Minimum	120 x 335 mm
Maximum	1500 x 2400 mm

Sound reduction (internal measurement to EN717-1)

Rw (dB;C;Ctr)	35;-1;-3
---------------	----------

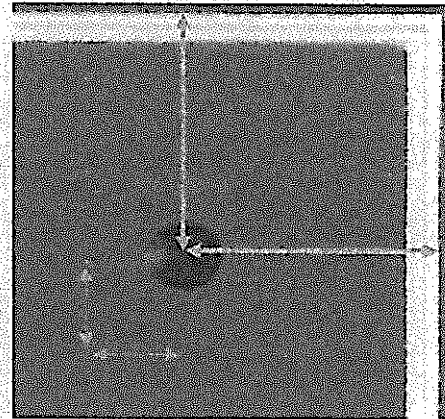
Installation detail



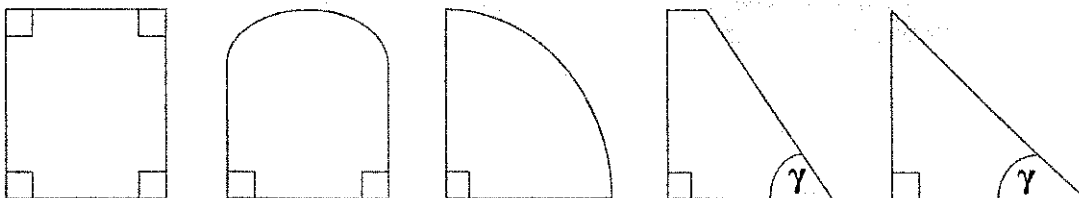
X and Y need to be determined by your sealant supplier, the minimum for X and Y = 3 mm

Details

Diameter protection cap	12 mm
Colour protection cap	Black
Location protection cap	Inside
Distance glass edge ↔ cap	
- vertical	50 mm
- horizontal	50 mm
Possible positions cap:	
left top / right bottom	yes / yes
right top / left bottom	yes / yes
Distance between micro spacers	
- vertical	20 mm
- horizontal	20 mm



Models



└ = 90° angel

γ = Minimum 45°

A minimum of one 90° angle and two straight sides are required.

The height has to be a minimum of 200 mm.

The technical data are calculated according DIN EN 410.

The above performance data should be considered representative.

There may be differences within a single production run or from one production run to another, but these are subject to manufacturing tolerances.

Energlaze

Energy Saving Technologies Ltd.

T/A **EnerGlaze**

Unit 1, Wexford Enterprise Centre,
Strandfield Business Park, Rosslare Road, Wexford,
Co. Wexford, Ireland.

Tel: 01 9011635 / 021 6010095

info@energlaze.ie

www.energlaze.ie

Energlaze Spacia conservation and renovation methodology statement

1. General assessment of suitability.

Energlaze will assess window suitability for their product range and suggest the most suitable product and method for fixing suitable based on:

A) Age of window and general repair

B) Style of window (victorian sash, Georgian sash and glazing bars, Edwardian casements, modernist steel sash etc)

C) method of fixing - particularly beads v putty for example

D) photographic record of each window to be taken, and any beading profiles that will be effected to be photographed and recorded for reuse/recreation as necessary.

Energlaze will advise the purchaser of their statutory duties in relation to the Planning Regulations in as far as they apply to works to windows in Historic Structures, Protected Structures, Monuments or buildings or elevations with a material bearing on an Architectural Conservation Area.

Energlaze will refer the purchaser to a conservation architect as necessary for works outside of the scope of Energlaze's remit - eg shutters etc.

2. General workmanship methodology

Fitting Method Spacia Thin Double Glazing

Note: Follows manufacturers recommendations -

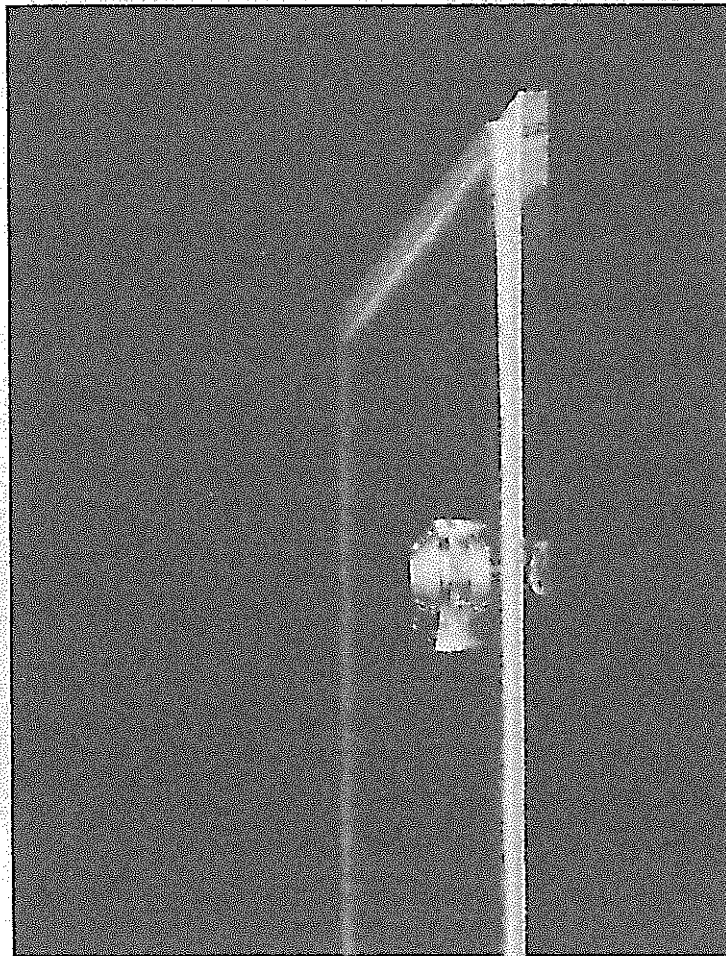
BASIC APPROACH -Sash windows -Soft wood - pitch or parana pine

1. Remove old putty or beading
2. Trim eye-line 2/5mm to create straight finish
3. Bed in silicone to manufacturers spec
4. Fit unit add more silicone to face
5. Reuse existing beading if suitable (Rarely) or use new hardwood beading (Mahogany or Teak) to match existing profile, else suitable putty base.
6. Ensure Silicone is fully sealed inside and out
7. Secure with galvanized pins every 200mm/comb putty, clean from glass and timber.
8. Pre paint beading to match existing colour if required.

3. Assessment, Post Occupancy Audit.

1. For the purposes of warranty and audit of workmanship works to a protected structure will be reviewed within a 6 month period of fitting where not normally covered under main building contract defects liability period.
2. Assessment of putty fitted units, check for adequate hardness and/or repair damage to same.

Pilkington Spacia™ STII



Technical Datasheet

Technical datasheet

Pilkington Spacia™ STII

Values

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Light transmission	78%
Solar transmission	66%
Light reflection outside	13%
U-value *	1.1W/m ² K
(* measured value in accordance to EN 674)	

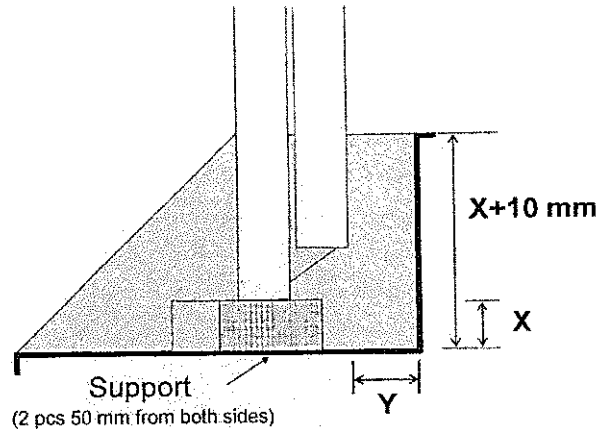
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Rw (dB;C;Ctr)	35;-1;-3
---------------	----------

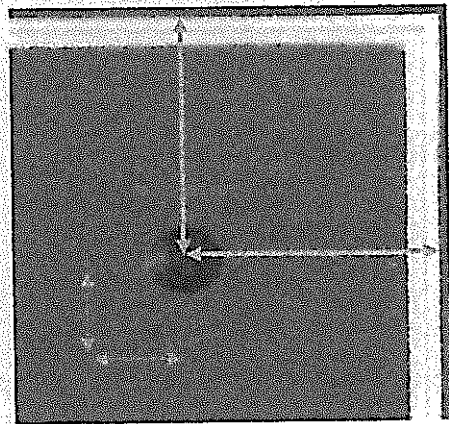
Installation detail



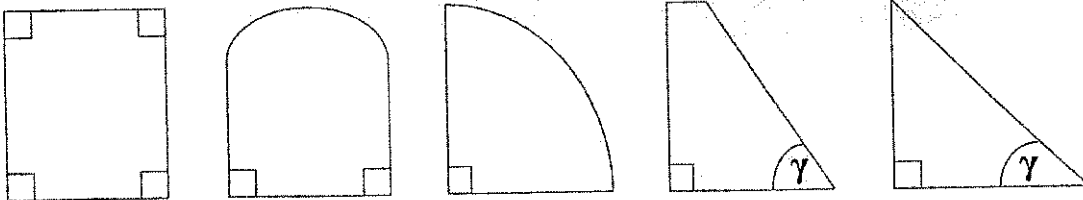
X and Y need to be determined by your sealant supplier, the minimum for X and Y = 3 mm

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Tel: 01 9011635 / 021 6010095

info@energlaize.ie

www.energlaize.ie

Energlaize Spacia conservation and renovation methodology statement

1. General assessment of suitability.

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A) Age of window and general repair

B) Style of window (victorian sash, Georgian sash and glazing bars, Edwardian casements, modernist steel sash etc)

C) method of fixing - particularly beads v putty for example

D) photographic record of each window to be taken, and any beading profiles that will be effected to be photographed and recorded for reuse/recreation as necessary.

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2. General workmanship methodology

Fitting Method Spacia Thin Double Glazing

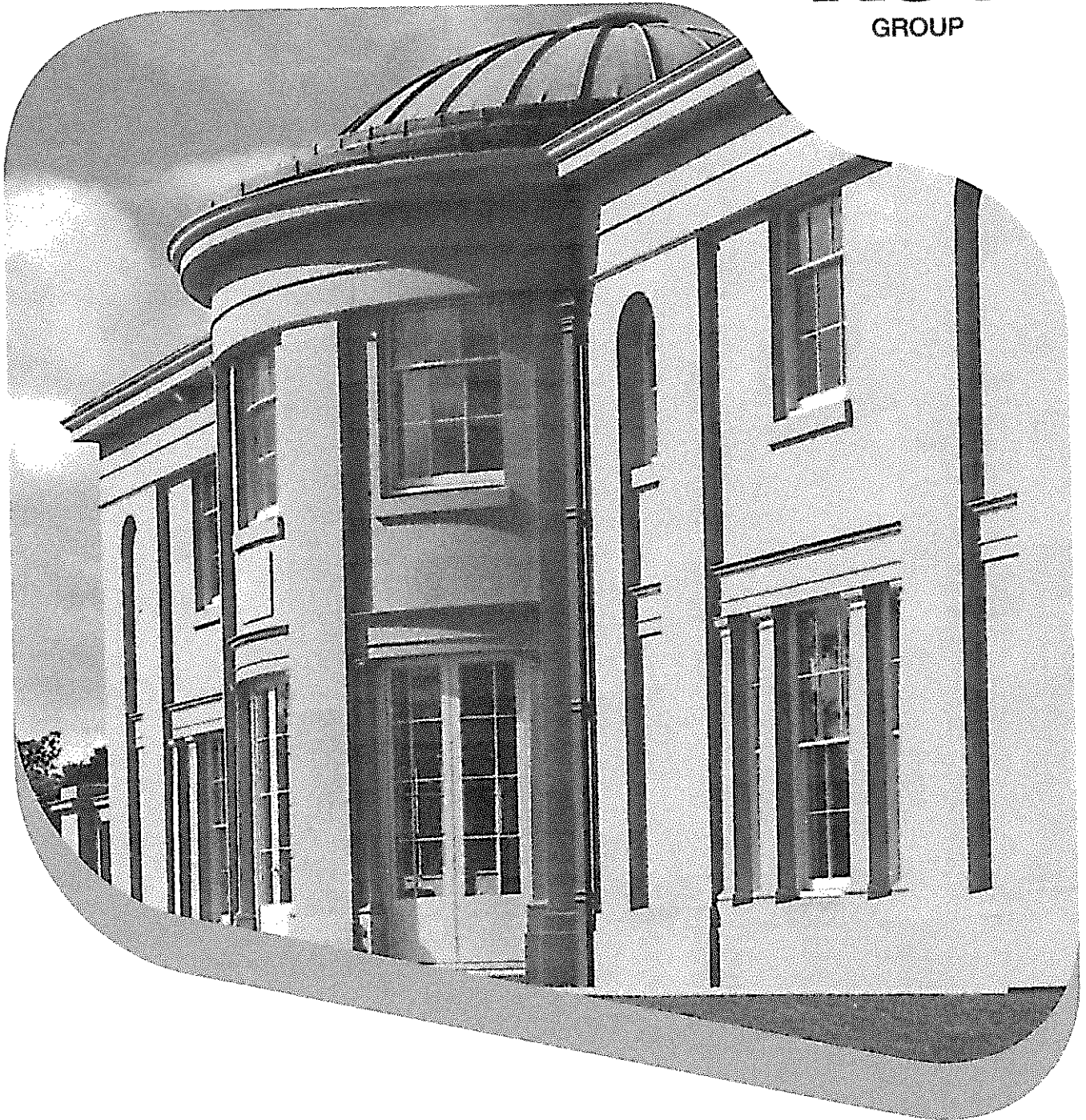
Note: Follows manufacturers recommendations -

BASIC APPROACH -Sash windows -Soft wood - pitch or parana pine

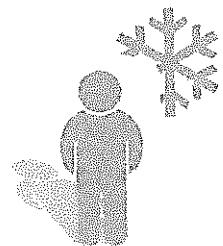
1. Remove old putty or beading
2. Trim eye-line 2/5mm to create straight finish
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4. Fit unit add more silicone to face
5. Reuse existing beading if suitable (Rarely) or use new hardwood beading (Mahogany or Teak) to match existing profile, else suitable putty base.
6. Ensure Silicone is fully sealed inside and out
7. Secure with galvanized pins every 200mm/comb putty, clean from glass and timber.
8. Pre paint beading to match existing colour if required.

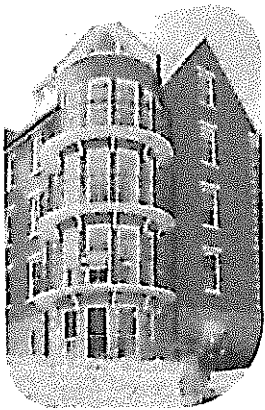
3. Assessment, Post Occupancy Audit.

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2. Assessment of putty fitted units, check for adequate hardness and/or repair damage to same.



Vacuum Glazing
Pilkington **Spacia™**





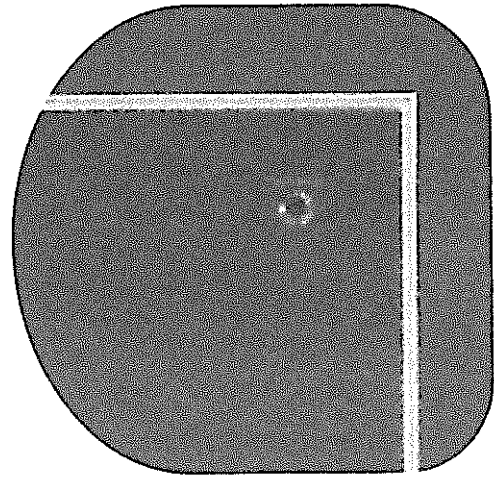
New construction of 7 flats and a penthouse Penlu, Swanage-Wales

Approximately 90m² of Pilkington **Spacia**[™]

Pilkington **Spacia**[™] vacuum insulating glazing

Pilkington **Spacia**[™] is the world's first commercially available vacuum glazing, with sales since 1997.

Pilkington **Spacia**[™] offers the thermal performance of conventional double glazing in the same thickness as a single glass pane. It balances historical preservation with modern comfort and environmental requirements.



Benefits

- Energy efficiency without compromising the building aesthetics or design.
- An innovative method of improving the energy efficiency of older homes or commercial structures where glazing choice is restricted or where the original frames are a desirable feature.
- Suitable for new buildings where the use of thinner, low weight glazing is desirable, such as sliding sashes.
- Improved sound reduction performance when compared to a standard double glazed unit.
- Custom sizes available
54" x 95" (1350 x 2400mm) maximum size,
8" x 14" (200 x 350mm) minimum size.
- Proven technology; successfully used in Japan and other countries for over 15 years.
- Pilkington provides a ten year warranty to the installer.

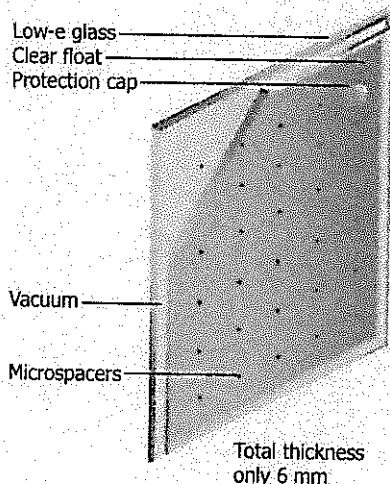


How it works

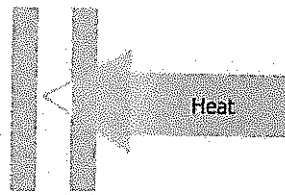
Pilkington **Spacia™** vacuum glazing consists of an outer pane of low-emissivity glass and an inner pane of clear float glass, separated by a microspacer grid of tiny pillars, each measuring 0.5 mm in diameter. The grid ensures that the panes are kept a fixed distance apart. The edges are welded to achieve a hermetic seal. Air is extracted to create a vacuum via the extraction point, rather than being filled with air or gas. The result is excellent thermal performance from a unit that is only slightly thicker than single glass.

A vacuum provides excellent thermal efficiency and if the pressure is low enough, it will eliminate the conductive and convective heat exchange between the two panes of glass. In a standard double glazed unit with a low-e coating, the conduction/convection component can result in 70% of the heat lost and so eliminating this loss is significant. The vacuum space provided between the two panes with Pilkington **Spacia™** significantly reduces thermal conduction and convection, and a low-e coating reduces thermal radiation.

Pilkington **Spacia™** vacuum glazing unit construction

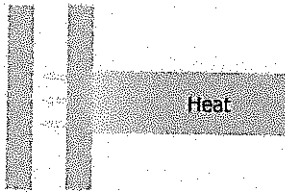


Heat Transfer System



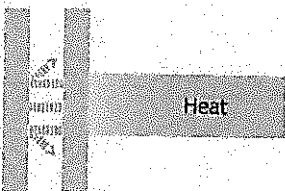
Thermal Conduction

"Conduction" is the transfer of heat through an object. Since heat does not transfer in a vacuum, conduction is significantly reduced.



Thermal Convection

"Convection" is the transfer of heat through fluid motion. Convection is significantly reduced in a vacuum in which no air or water exists.



Thermal Radiation

"Radiation" is the transfer of thermal energy generated from an object to another object. Low-e coatings reduce thermal radiation.

Applications

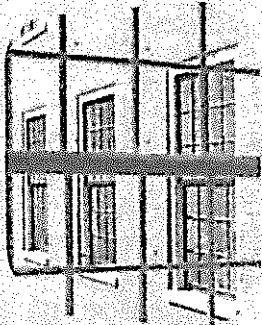
With a narrow overall thickness and good acoustic performance, Pilkington **Spacia™** is ideal for use in variety of building types. Various types of Pilkington **Spacia™** are available for a multitude of glazing solutions.

Pilkington **Spacia™** offers historic buildings the ability to maintain original design, while improving glazing performance. It may even allow the use of the original frames if these are in a reasonable or repairable condition.

Until now, the only choices were to sacrifice thermal performance and comfort, or to compromise the appearance of the building by using bulkier modern frames with double glazing.

- * Ideal for use in historic buildings
- * Secondary glazing
- * As one pane of a triple glazed "super-window" (see Pilkington **Spacia™** 21 for more information)

Pilkington Spacia™ Product Lineup



The Hermitage Museum
Amsterdam
Approximately 900
Pilkington Spacia™ units

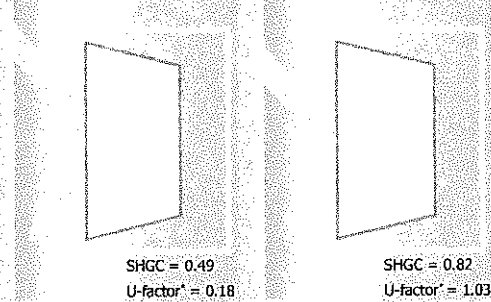
Pilkington Spacia™ includes many variations, including types designed for high thermal performance and others with enhanced sound and thermal performance.

Standard Pilkington Spacia™ is a double glazed unit with a low-e coating for improved thermal control. The vacuum space between two panes provides thermal insulation approximately four times greater than a single pane.

Pilkington Spacia™ helps to maintain room temperature and significantly reduces condensation resistance.

Pilkington Spacia™ Cool reduces solar heat gain and improves thermal insulation more than five times greater than uncoated monolithic strength glass. The solar control properties work to retain comfortable room temperatures.

Pilkington Spacia™ Cool Monolithic Clear Glass



Figures demonstrate improved solar performance over clear glass.

* Btu/hr.sq ft. °F

Pilkington Spacia™ Cool

Pilkington Spacia™ Cool is a double glazed unit with a solar control low-e coating to reduce solar heat gain, which also provides an improved U-factor.



1000 Princes Street, Edinburgh
Units Pilkington Spacia™

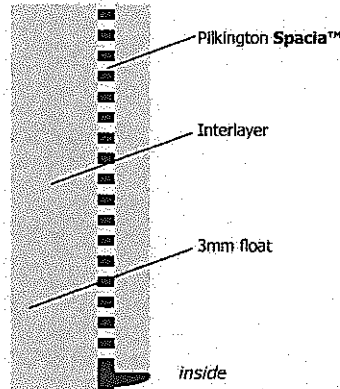
Pilkington Spacia™

Pilkington **Spacia™** provides sound insulation to block out noises generated inside and outside a room, creating the ultimate quiet environment.

Unit	STC
Pilkington Spacia™ 6.2 mm (unit constructed of 2mm & 3mm lites)	34
Pilkington Spacia™ 8.2 mm (unit constructed of 5mm & 3mm lites)	33
Pilkington Spacia™ 10.2 mm (unit constructed of 5mm & 5mm lites)	36

Frequency range: 100 - 5000 Hz

Pilkington **Spacia™** Shizuka vacuum glazing unit construction



Pilkington **Spacia™** Shizuka

Pilkington **Spacia™** Shizuka is double glazed unit with a laminated lite of clear glass for added safety performance and improved sound reduction. This unit provides thermal insulation and almost 100% UV absorption, regardless of its thin structure.

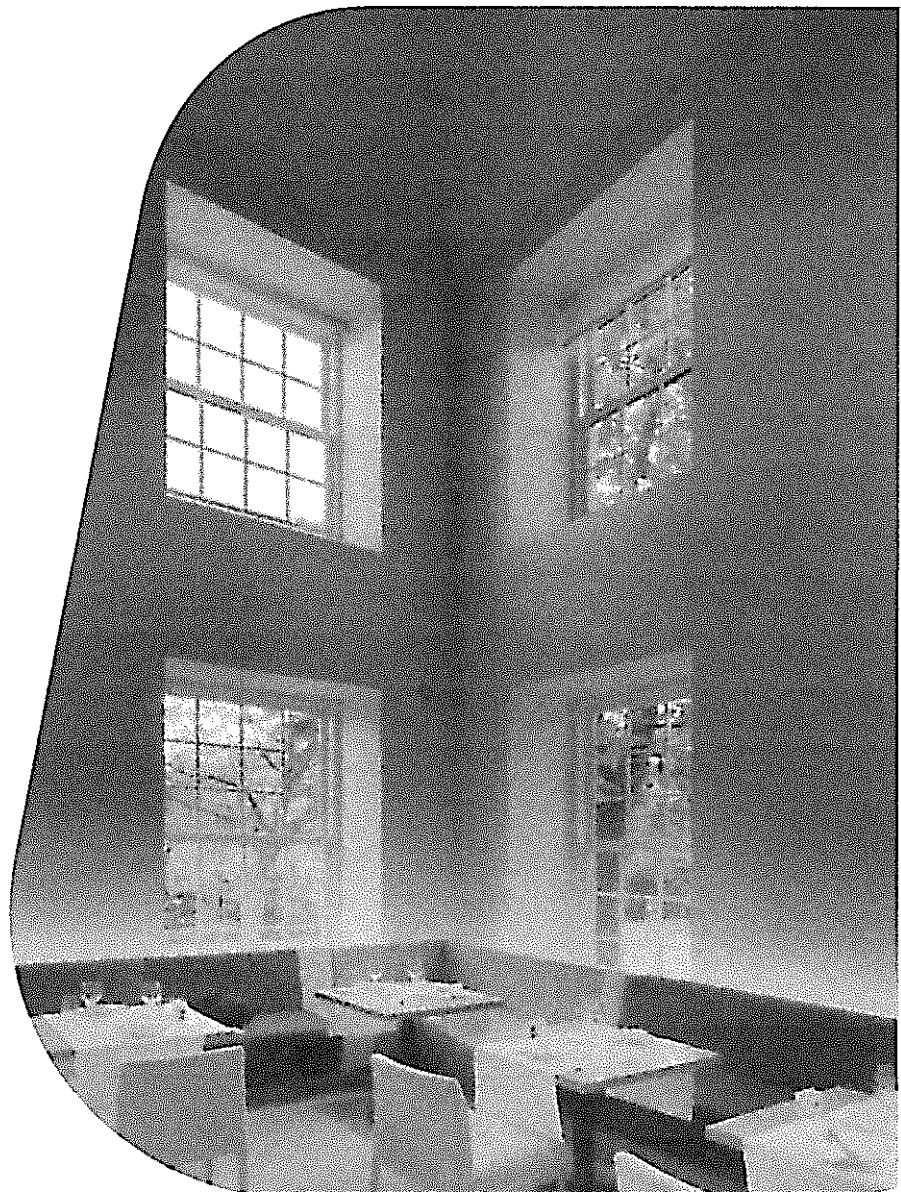
Unit	STC
Pilkington Spacia™ Shizuka 9.2mm (unit constructed of 2.5mm/3mm & 3mm lites)	36
Pilkington Spacia™ Shizuka 9.7mm (unit constructed of 3mm/3mm & 3mm lites)	37
Pilkington Spacia™ Shizuka 10.7mm (unit constructed of 4mm/3mm & 3mm lites)	37
Pilkington Spacia™ Shizuka 11.7mm (unit constructed of 5mm/3mm & 3mm glass)	38

Frequency range: 100 - 5000 Hz

Pilkington **Spacia™** Shizuka Cool

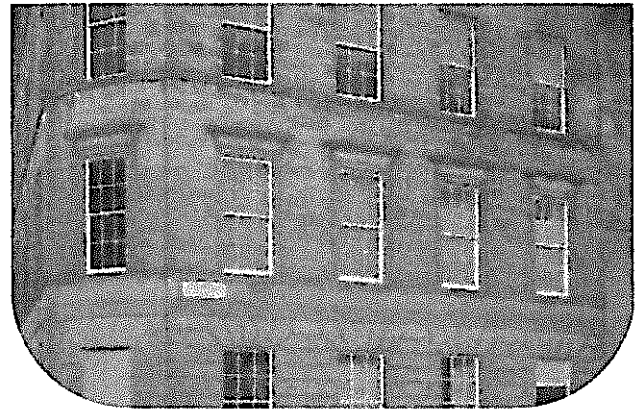
Pilkington **Spacia™** Shizuka Cool offers the same sound performance as standard Pilkington **Spacia™** Shizuka, with added solar control performance. This double glazed, laminated clear glass unit has an added solar control low-e coating for excellent sound control and interior comfort.

The Hermitage Museum
Amsterdam
Approximately 900
Pilkington **Spacia™** units



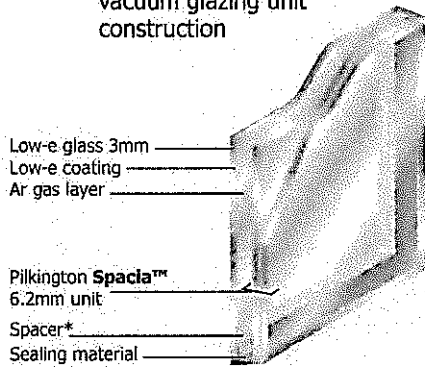
Pilkington Spacia™ 21

Pilkington **Spacia™** 21 is a triple glazed "super window," consisting of two low-e coatings in the unit along with argon filling. The result is a highly energy efficient unit with a similar thickness to a conventional double insulating glass unit.



Archibald Place, Edinburgh
60 units of Pilkington **Spacia™**

Hybrid Glazing Pilkington **Spacia™** 21 vacuum glazing unit construction

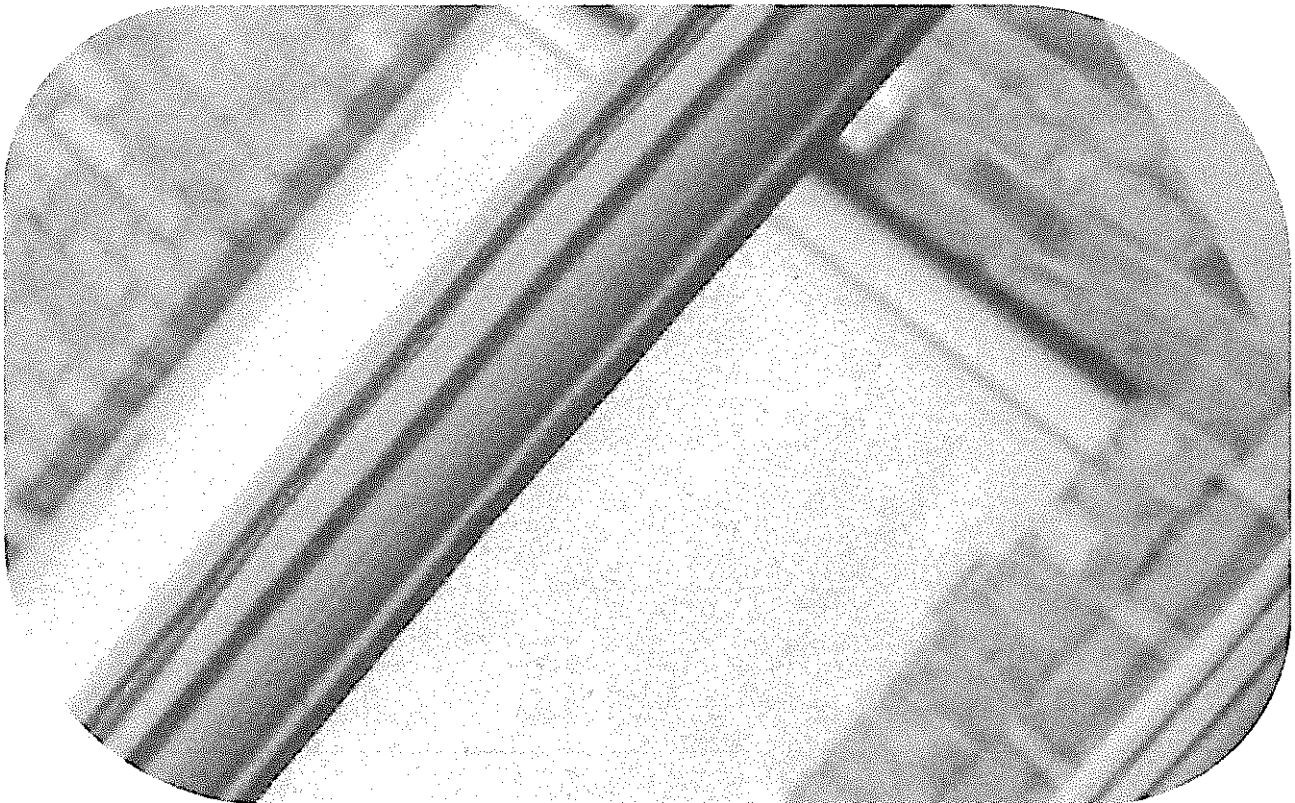


*Spacer can be extra wide for thicker constructions

Pilkington **Spacia™** 21 is a hybrid vacuum glazing composed of Pilkington **Spacia™** vacuum glazing and low-e glass. The cavity is injected with argon gas that is lower in thermal conductivity by about 30% compared to air, thus achieving ultrahigh thermal insulation performance.

Pilkington **Spacia™** 21 is available with a solar control low-e coating for enhanced solar control. For improved thermal performance, krypton can be used in the airspace. Pilkington **Spacia™** 21 is also available in standard clear or green glass.

All Pilkington **Spacia™** 21 variations are available in 18.2 mm and 21.2 mm thicknesses.





	Thickness (mm)	Visible Light ²		Solar Energy ²		U-Factor ²		Solar Heat Gain Coefficient ²
		Transmittance ¹ %	Reflectance ¹ %	Transmittance ¹ %	Reflectance ¹ %	Europe (W/sq m K)	U.S. Winter (Btu/hr.sq ft. °F)	
Pilkington Spacia ™	6.2	76	16	61	15	1.4	0.25	0.66
Pilkington Spacia ™ Cool	6.2	70	23	46	36	1.0	0.18	0.49
Pilkington Spacia ™ Shizuka	9.2	73	15	56	13	1.4	0.25	0.61
Pilkington Spacia ™ Cool Shizuka	9.2	68	22	42	29	1.0	0.18	0.46
Pilkington Spacia ™ 21 Thermal Control	18.2	64	22	47	19	0.9	0.16	0.58
Pilkington Spacia ™ 21 Thermal Control	21.2	64	22	47	19	0.8	0.14	0.58
Pilkington Spacia ™ 21 Solar Control	18.2	59	25	37	27	0.7	0.15	0.46
Pilkington Spacia ™ 21 Solar Control	21.2	59	25	37	27	0.7	0.14	0.46
Pilkington Spacia ™ 21 Solar Control Green	18.2	58	19	29	40	0.8	0.14	0.34

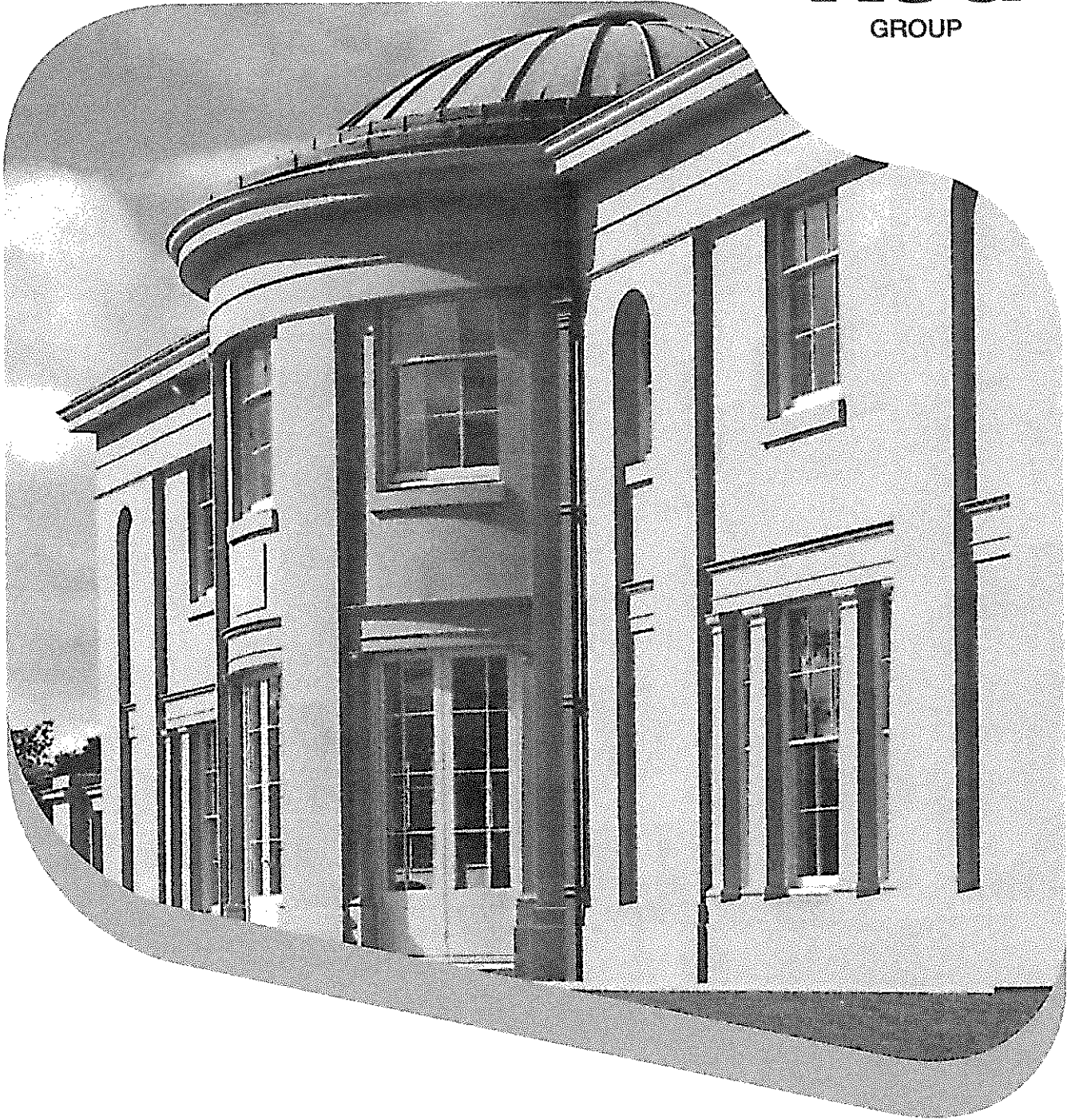
*U.S. U-Factor (Btu/hr.sq ft. °F) is based on NFRC/ASTM standards - All performance values are center-of-glass values calculated by the LBNL Window 6.3 program

See Pilkington Architectural Product Guide for explanation of superscript references^{1, 2} *All products are available in thicker forms if additional glass strength is required.

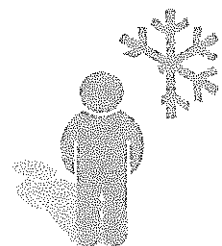
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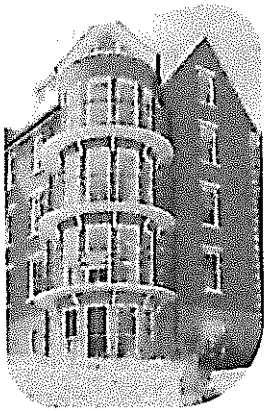


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Vacuum Glazing
Pilkington **Spacia™**





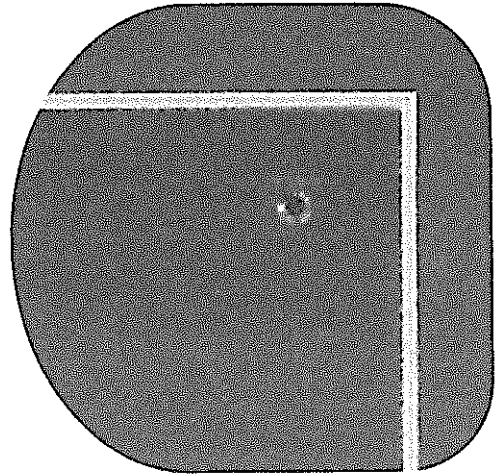
New construction of 7 flats and a penthouse Penlu, Swansea-Wales

Approximately 90m² of Pilkington Spacia™

Pilkington Spacia™ vacuum insulating glazing

Pilkington Spacia™ is the world's first commercially available vacuum glazing, with sales since 1997.

Pilkington Spacia™ offers the thermal performance of conventional double glazing in the same thickness as a single glass pane. It balances historical preservation with modern comfort and environmental requirements.



Benefits

- * Energy efficiency without compromising the building aesthetics or design.
- * An innovative method of improving the energy efficiency of older homes or commercial structures where glazing choice is restricted or where the original frames are a desirable feature.
- * Suitable for new buildings where the use of thinner, low weight glazing is desirable, such as sliding sashes.
- * Improved sound reduction performance when compared to a standard double glazed unit.
- * Custom sizes available
54" x 95" (1350 x 2400mm) maximum size,
8" x 14" (200 x 350mm) minimum size.
- * Proven technology; successfully used in Japan and other countries for over 15 years.
- * Pilkington provides a ten year warranty to the installer.

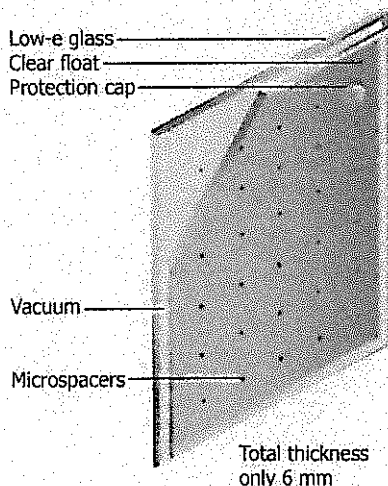


How it works

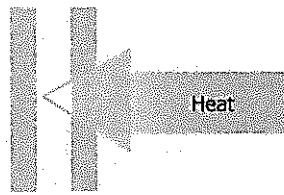
Pilkington **Spacia™** vacuum glazing consists of an outer pane of low-emissivity glass and an inner pane of clear float glass, separated by a microspacer grid of tiny pillars, each measuring 0.5 mm in diameter. The grid ensures that the panes are kept a fixed distance apart. The edges are welded to achieve a hermetic seal. Air is extracted to create a vacuum via the extraction point, rather than being filled with air or gas. The result is excellent thermal performance from a unit that is only slightly thicker than single glass.

A vacuum provides excellent thermal efficiency and if the pressure is low enough, it will eliminate the conductive and convective heat exchange between the two panes of glass. In a standard double glazed unit with a low-e coating, the conduction/convection component can result in 70% of the heat lost and so eliminating this loss is significant. The vacuum space provided between the two panes with Pilkington **Spacia™** significantly reduces thermal conduction and convection, and a low-e coating reduces thermal radiation.

Pilkington **Spacia™** vacuum glazing unit construction

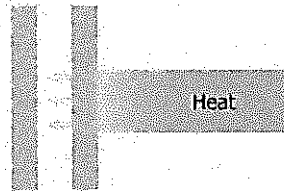


Heat Transfer System



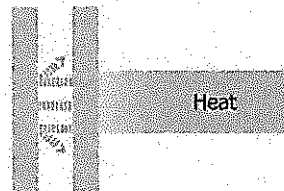
Thermal Conduction

"Conduction" is the transfer of heat through an object. Since heat does not transfer in a vacuum, conduction is significantly reduced.



Thermal Convection

"Convection" is the transfer of heat through fluid motion. Convection is significantly reduced in a vacuum in which no air or water exists.



Thermal Radiation

"Radiation" is the transfer of thermal energy generated from an object to another object. Low-e coatings reduce thermal radiation.

Applications

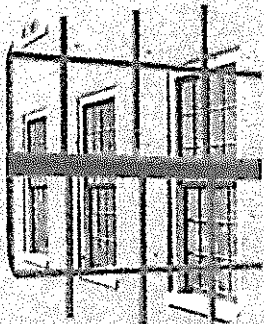
With a narrow overall thickness and good acoustic performance, Pilkington **Spacia™** is ideal for use in variety of building types. Various types of Pilkington **Spacia™** are available for a multitude of glazing solutions.

Pilkington **Spacia™** offers historic buildings the ability to maintain original design, while improving glazing performance. It may even allow the use of the original frames if these are in a reasonable or repairable condition.

Until now, the only choices were to sacrifice thermal performance and comfort, or to compromise the appearance of the building by using bulkier modern frames with double glazing.

- * Ideal for use in historic buildings
- ◊ Secondary glazing
- * As one pane of a triple glazed "super-window"
(see Pilkington **Spacia™** 2.1 for more information)

Pilkington Spacia™ Product Details



The Hermitage Museum
Amsterdam
Approximately 900
Pilkington Spacia™ units

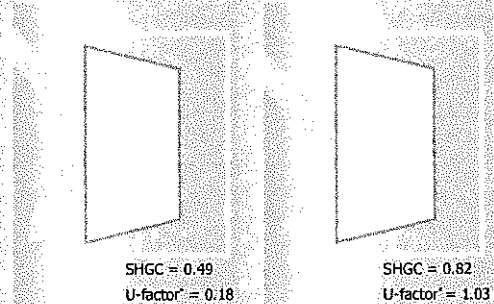
Pilkington **Spacia™** includes many variations, including types designed for high thermal performance and others with enhanced sound and thermal performance.

Standard Pilkington **Spacia™** is a double glazed unit with a low-e coating for improved thermal control. The vacuum space between two panes provides thermal insulation approximately four times greater than a single pane.

Pilkington **Spacia™** helps to maintain room temperature and significantly reduces condensation resistance.

Pilkington **Spacia™** Cool reduces solar heat gain and improves thermal insulation more than five times greater than uncoated monolithic strength glass. The solar control properties work to retain comfortable room temperatures.

Pilkington **Spacia™** Cool Monolithic Clear Glass



Figures demonstrate improved solar performance over clear glass.

*Btu/hr.sq ft. °F

Pilkington **Spacia™** Cool is a double glazed unit with a solar control low-e coating to reduce solar heat gain, which also provides an improved U-factor.



Hermitage Museum, Amsterdam
Units Pilkington Spacia™

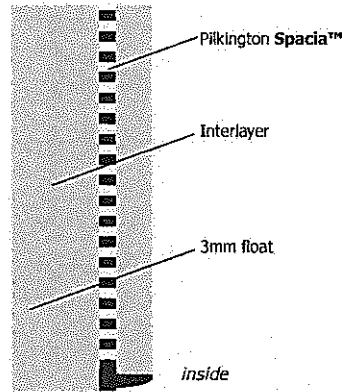
Pilkington Spacia™

Pilkington **Spacia™** provides sound insulation to block out noises generated inside and outside a room, creating the ultimate quiet environment.

Unit	STC
Pilkington Spacia™ 6.2 mm (unit constructed of 2mm & 3mm lites)	34
Pilkington Spacia™ 8.2 mm (unit constructed of 5mm & 3mm lites)	33
Pilkington Spacia™ 10.2 mm (unit constructed of 5mm & 5mm lites)	36

Frequency range: 100 - 5000 Hz

Pilkington Spacia™ Shizuka vacuum glazing unit construction



Pilkington Spacia™ Shizuka

Pilkington **Spacia™** Shizuka is double glazed unit with a laminated lite of clear glass for added safety performance and improved sound reduction. This unit provides thermal insulation and almost 100% UV absorption, regardless of its thin structure.

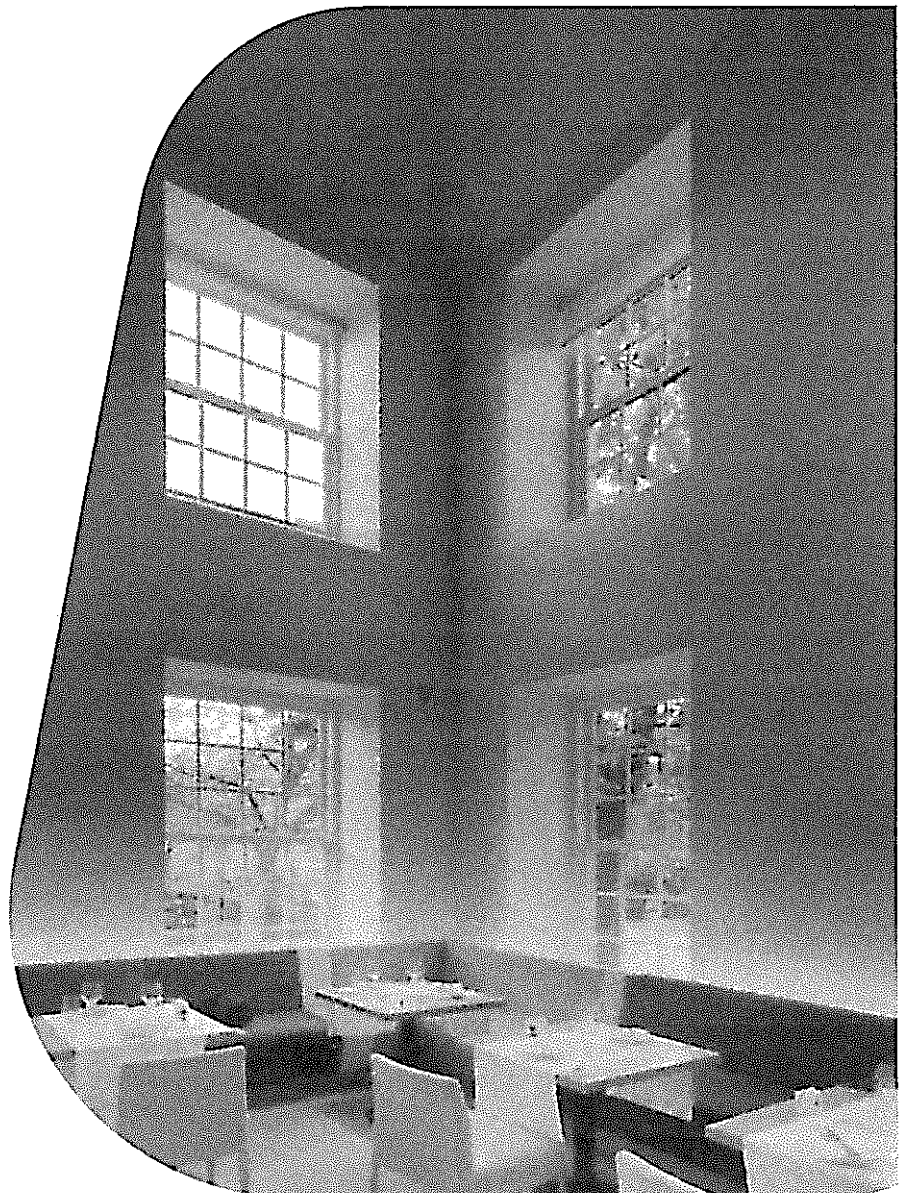
Unit	STC
Pilkington Spacia™ Shizuka 9.2mm (unit constructed of 2.5mm/3mm & 3mm lites)	36
Pilkington Spacia™ Shizuka 9.7mm (unit constructed of 3mm/3mm & 3mm lites)	37
Pilkington Spacia™ Shizuka 10.7mm (unit constructed of 4mm/3mm & 3mm lites)	37
Pilkington Spacia™ Shizuka 11.7mm (unit constructed of 5mm/3mm & 3mm glass)	38

Frequency range: 100 - 5000 Hz

Pilkington Spacia™ Shizuka Cool

Pilkington **Spacia™** Shizuka Cool offers the same sound performance as standard Pilkington **Spacia™** Shizuka, with added solar control performance. This double glazed, laminated clear glass unit has an added solar control low-e coating for excellent sound control and interior comfort.

The Hermitage Museum
Amsterdam
Approximately 900
Pilkington **Spacia™** units



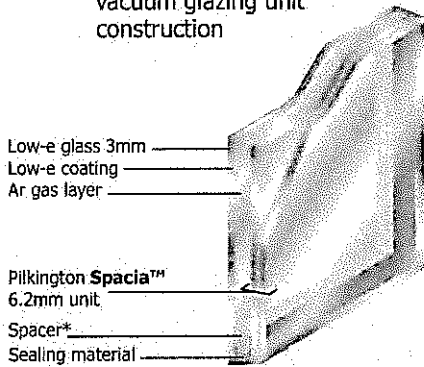
Pilkington Spacia™ 21

Pilkington **Spacia™** 21 is a triple glazed "super window," consisting of two low-e coatings in the unit along with argon filling. The result is a highly energy efficient unit with a similar thickness to a conventional double insulating glass unit.



Archibald Place, Edinburgh
60 units of Pilkington **Spacia™**

Hybrid Glazing Pilkington **Spacia™** 21 vacuum glazing unit construction

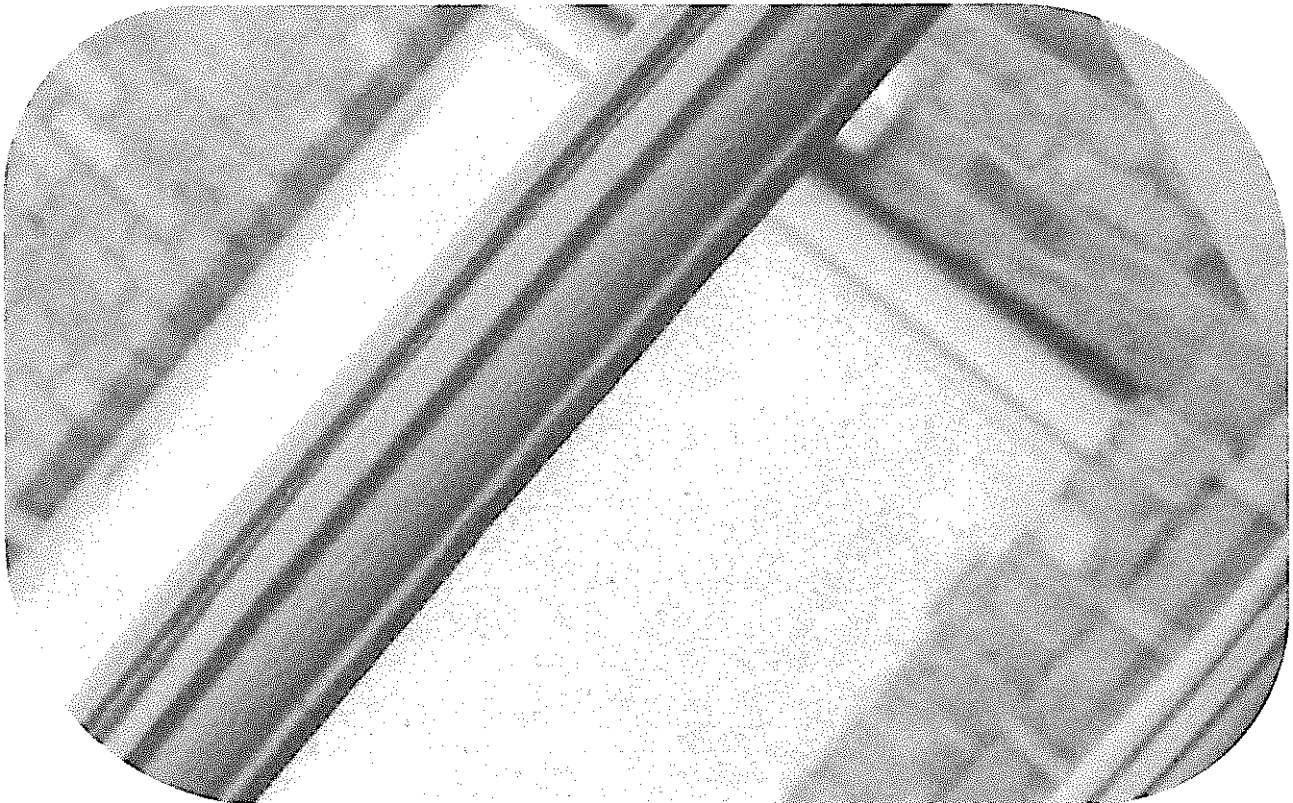


*Spacer can be extra wide for thicker constructions

Pilkington **Spacia™** 21 is a hybrid vacuum glazing composed of Pilkington **Spacia™** vacuum glazing and low-e glass. The cavity is injected with argon gas that is lower in thermal conductivity by about 30% compared to air, thus achieving ultrahigh thermal insulation performance.

Pilkington **Spacia™** 21 is available with a solar control low-e coating for enhanced solar control. For improved thermal performance, krypton can be used in the airspace. Pilkington **Spacia™** 21 is also available in standard clear or green glass.

All Pilkington **Spacia™** 21 variations are available in 18.2 mm and 21.2 mm thicknesses.





	Thickness (mm)	Visible Light ²		Solar Energy ²		U-Factor ³		Solar Heat Gain Coefficient ²
		Transmittance ³ %	Reflectance ³ %	Transmittance ³ %	Reflectance ³ %	Europe (W/sq m K)	U.S. Winter (Btu/hr.sq ft. °F)	
Pilkington Spacia TM	6.2	76	16	61	15	1.4	0.25	0.66
Pilkington Spacia TM Cool	6.2	70	23	46	36	1.0	0.18	0.49
Pilkington Spacia TM Shizuka	9.2	73	15	56	13	1.4	0.25	0.61
Pilkington Spacia TM Cool Shizuka	9.2	68	22	42	29	1.0	0.18	0.46
Pilkington Spacia TM 21 Thermal Control	18.2	64	22	47	19	0.9	0.16	0.58
Pilkington Spacia TM 21 Thermal Control	21.2	64	22	47	19	0.8	0.14	0.58
Pilkington Spacia TM 21 Solar Control	18.2	59	25	37	27	0.7	0.15	0.46
Pilkington Spacia TM 21 Solar Control	21.2	59	25	37	27	0.7	0.14	0.46
Pilkington Spacia TM 21 Solar Control Green	18.2	58	19	29	40	0.8	0.14	0.34

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