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30 Euston Square

Fire protection for the heritage rooms of the Royal College of General Practitioners

Design and Access Statement
Incorporating a gazetteer of doors

March 2018

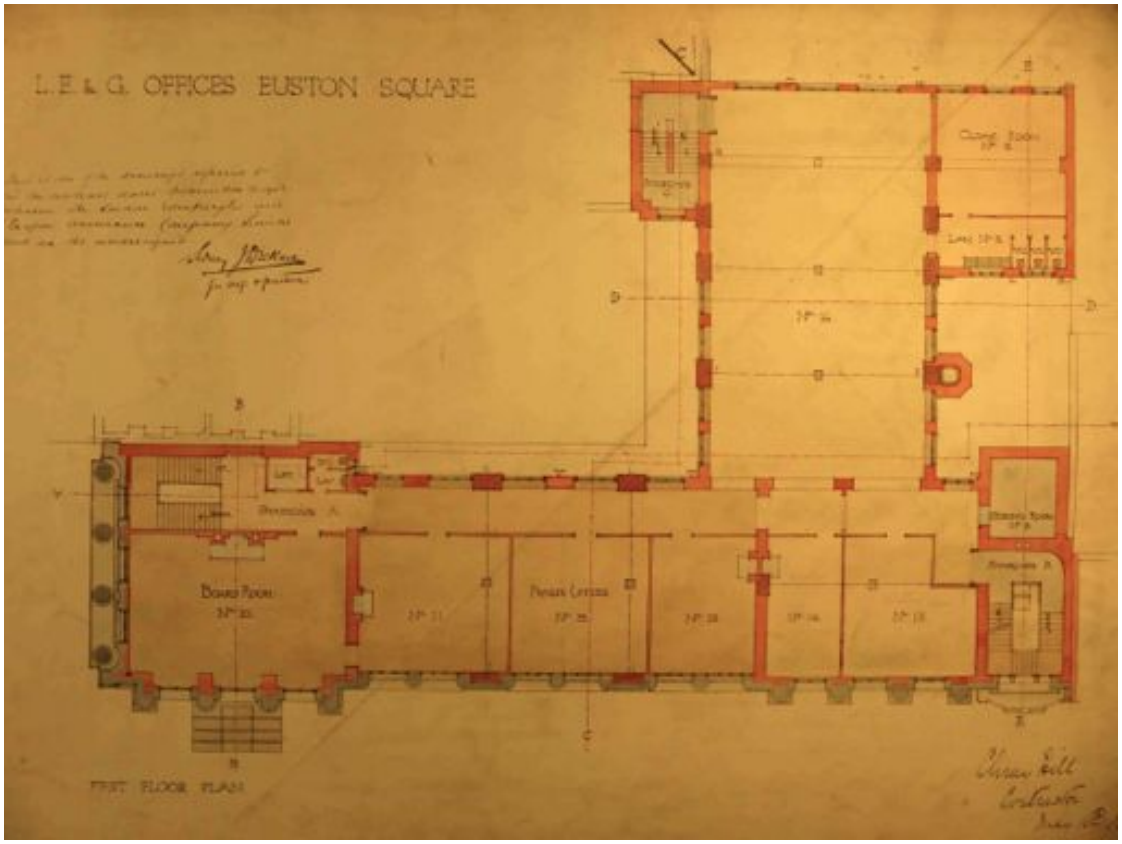

Fig 1. Original drawing by Arthur Beresford Pite (RIBA Drawings Collection)

30 Euston Square - The Royal College of General Practitioners

1-9 Melton Street, London NW1 2FB

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1 Description of 30 Euston Square

1.1 Character, age and previous alterations

The application concerns the uprating of seven historic doors original to the Grade II* listed 1906 building to achieve required fire and smoke containment as defined in Part B of the Building Regulations.

The details of the doors are included in the Section 2 gazetteer.

Reference should be made to the accompanying heritage statement for comprehensive historical overview pages 3-5, describing the historic development of the building, its materiality, historical significance and current usage. The current listing description is in appendix 1 of the Heritage Statement.

1.2 Principles of intervention- a consideration of the doors and their setting

The Grade II* status of the majority of the building requires a careful justification of any proposed alterations to the fabric. Alterations should be proportionate to demonstrable need, and executed in a manner that is ideally reversible, visually sympathetic and effective. Therefore the current application takers as its staring premise that the doors are of great significance to the building, and that any alteration to their physical integrity must be justifiable, necessary and proportionate to the needs of fire safety, which is an overriding consideration when dealing with heritage buildings of significance.

Two elements of the doors combine to create smoke and fire integrity – the door leaf and the frame. To upgrade the doors both elements need to be considered in order to judge where to make the intervention and how much intervention is required. The doors are 50mm (two inches) thick with two panels 20mm (three quarters of an inch) thick of solid oak. The overall measurements are 2110 x 1060mm. The frames are also oak, with stops between (three eighths of an inch and half and inch (12.5mm), which is the minimum stated in the Building regulations.

Additional to this consideration of the fabric is the specification of tested and approved technical seals or coatings that deliver guaranteed fire integrity when installed according to the manufacturers requirements. These products need to be selected for the way in which the guaranteed performance impacts as little as possible on the fabric and appearance of these original doorsets.

The technical elements of fire doors are seals (dual intumescent and smoke) and hinges with a melting point of 800 degrees Centigrade.

The doors retain original locks and ironmongery, which is both significant in heritage terms, and as a fire risk. The use of a fire paper within the lock cavity will be required to minimise the risk of failure under fire conditions whilst retaining these valuable survivors of the original building.

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1.2 Proposed mitigation for fire safety

The issues raised in the gazetteer description focus mainly on the significant variety of gaps around the doors within their frames. The required gap is 3mm top and sides, with 10mm at the bottom of the door. The gazetteer records gaps of up to 20mm at the top of some doors, generally between 8mm - 1 or 2mm to the sides, and up to 20mm at the floor.

As such, the fit of the door to the frame requires intervention. The frames have already insufficient depth of stop so adding on to the frame is not viable – therefore the fit needs to be addressed with additions to the doors to ensure a reasonable performance. If intervention is therefore to the doors, then the smoke and fire seals should be fixed to the doors not the frames, which can remain as existing. A seal that is surface fixed rather then rebated into a routed groove minimises the physical intervention into the door, and a product by Envirograf is the most suitable choice in this category.

Part of the distorted gaps between door and frame is the condition of the hinges. It is unclear if they are original, there is evidence of the hinges being removed and re-fixed, so the exact age of the hinges is unclear, what is clear is that they are very worn, the washers are occasionally completely missing, contributing to the 'drop' of the door leaf. Fire rated hinges are required, the existing hinges being at the end of their serviceable life means that replacement with appropriately performing hinges in a sympathetic, unpolished and unlacquered finish is appropriate.

If a closer is required in future, a concealed closer presents minimally to the user and the generous thickness of the doors and the oak construction is suitable to sustain the use of such products. As this is a public building a closer with DDA compliance for soft opening is critical, in addition to fire performance.

Selected products are listed in appendix 2.

2 Gazetteer of doors

The following are extracts from the Conservation Plan and document the current condition of the doors sequenced 1-7 as per Fig. 2.

Fig 2. Plan of the Grade II* listed building with doors numbered 1-7 included as drawing ES FD 01

3.1 First Floor – Door 1 to the 'Princes Gate' meeting room

Directors Boardroom: material(s) and features – Significance: 1 / Condition: A

The entry door and access door to Ireland (noted under 'walls') are integral to the panelling. The leading edge of the pedimented door has noticeable deterioration at odds with the generally excellent condition of the mouldings around the walls. Repairing this edge could be achieved with a filler product but it may be more straightforward to leave t as existing, noting that any redecoration must take extreme care in its vicinity to prevent accidental damage making the situation any worse.

Figs. 3, 4 Boardroom entry door – high gloss varnish / pedimented head with friable edge – AC grille above

Attaining equivalence to FD30 performance will require consistent 3mm gaps on three sides with fire rated hinges and smoke seals, which will need to be addressed as a matter of urgency along with the other minor board rooms on the first floor.

Fig. 5 Boardroom entry door moulding to frame jamb/head – high gloss varnish, door fit is a fire issue

The entry door has original ironmongery – the handle is worn but serviceable with a good patina, the fingerplates are pierced and clogged with 'Brasso' or similar brass polish residue and should be carefully removed and washed out before drying and re-fixing. The use of posidrive screws to fix the fingerplates, escutcheon plates and doorknob must be addressed, well fitting brass pan or flat head C/S slot screws must be used wherever original fittings are in place or new fittings are visible within a heritage context.

The washered hinges are very worn and have contributed to the door leaf dropping, adding to the problem of unacceptable gaps around the door with regard to smoke ingress.



Figs. 6, 7, 8 Boardroom entry door – original handle/push plate / excessively worn hinges / poor fitting in 2012

The open joints of the door is of concern, when works to the door for fire upgrading takes place an experienced joiner should look at the stability of the joints. The damage through use to the edge of the frame is inevitable given the volume of use. The chipping of brittle lacquer finish begs the question as to using lacquer as opposed to an oiled finish that penetrates into the wood and is less visually affected by impact damage. An investigation of the original finish to the oak is recommended – if an oil is suitable it may be in the long term heritage and aesthetic interest of the room to remove the modern high sheen, slightly viscous lacquer and to utilize an oil finish such as teak or Danish oil. It is possible that the unfortunate finish to the lacquer is because it plays an inhibiting role in the spread of flame. This should be considered as art of the wider fire strategy for the significant heritage rooms on the first floor.

The existing hinges are relatively modern brass that do not fit exactly the rebates in the door edge for them. New screws poorly chosen indicate the correct countersunk slot head that should be used. The hinge pins are worn as are the washers, the hinges are not appropriate for FD30 doors.

3.2 First Floor – Door 2 to the 'Ireland' meeting room

Ireland: material(s) and features – Significance: 1 / Condition: A

The doors are noted on the Listing Description, externally the oak doors are pale yellow, internally they are over-finishing has resulted in a high sheen orange finish at odds with the oak strip floor. Where original skirting has been removed during the installation of pipe runs to service the radiator the original colour of the oak doorframe is seen. Stripping the orange tinted varnish is a major exercise and could result in damage to the doors if not handled by highly trained operatives, as such the current condition is acceptable, if less than desirable. Original lock ironmongery is significant.

It should be noted that issues of non-compliance with Part B of the Building regulations has been previously identified, with significant perimeter gaps to all sides and an inadequate stopping to the frame. The definition of a compliant intervention is required that acknowledges the adequate thickness and construction of the doors to be equivalent to FD30 status, but that also addresses the worn hinges and gaps around the door is required well within the next 12 months.

Figs. 9, 10 Oak entry door inner face, original colour of doorframe - Note gap under door re. Part B fire regulations - relatively recent hinges in plated steel

The existing hinges are relatively modern brass plated steel that do not fit exactly the rebates in the door edge for them. New screws poorly chosen indicate the correct countersunk slot head that should be used. The hinge pins are worn as are the washers, the hinges are not appropriate for FD30 doors.

3.3 First Floor – Door 3 to the 'Beresford Pite' meeting room

Beresford-Pite: material(s) and features – Significance: 1 / Condition: A

Comments on the Ireland doors regarding the overtly coloured staining apply. The condition of the doors is also applicable, the entrance door also has poor repairs to fixings related to a now absent door closer (Fig.), gaps particularly to the head of the door/frame are unacceptably wide from a fire safety perspective, as too are the worn hinges.


Figs. 11, 12 Oak entry door, gap to frame head / door closer repair

Remedial work to the gaps can incorporate careful remaking of the repairs to the door closer fixings such that the fixings are visible but only under close scrutiny. Externally the oak doorcase and pediment are in good condition, the colour of the oak is different from the interior, careful investigation is required to establish a finish that is consistent and appropriate. Original ironmongery is significant.

Fig. 13 Oak pediment common to minor boardroom doors – distinct colour difference to the interior

The upper panel has a split edge where it meets the right jamb (Fig. 14). This presents an unacceptable breach in its fire performance as well as its appearance, and should have a carefully selected piece of oak with matching moisture content to the existing panel spliced in and finished to appear unobtrusive.

Figs. 14 , 15 Oak panel requiring splicing in – plated steel washered hinge worn and a poor fit

The existing hinges are relatively modern brass that do not fit exactly the rebates in the door edge for them. New screws poorly chosen indicate the correct countersunk slot head that should be used. The hinge pins are worn as are the washers, the hinges are not appropriate for FD30 doors.

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3.4 First Floor – Door 4 to the 'England' meeting room

England: material(s) and features – Significance: 1 / Condition: A

The entry door requires perimeter work to reinstate a close fit to the frame as part of achieving fire compliance. Original ironmongery is particularly important to the door. Any decorative works to the doors must ensure that the ironmongery is handled extremely carefully.

Fig.16 Pedimented frame with overpanel

Figs. 17, 18 Original door with original ironmongery, gap to frame in breach of fire safety requirements

The existing hinges are relatively modern brass that do not fit exactly the rebates in the door edge for them. New screws poorly chosen indicate the correct countersunk slot head that should be used. The hinge pins are worn as are the washers, the hinges are not appropriate for FD30 doors.

Fig. 19 Hinge detail to door – modern washered hinge showing wear

3.5 First Floor – Door 5 to the 'Wales Cymru' meeting room

Wales: material(s) and features – Significance: 1 / Condition: A

Good condition, with common issues of varnish colouration and gaps to the frame. New ironmongery attempts a match to adjoining doors, the polished lacquer finish is the most significant specification error and the removal of the lacquer and ability for natural patination through use is preferable.

Fig. 20 21 Oak entry door – significantly worn hinges - unacceptable gap for fire safety

Fig. 22 23 Older hinge but poor fit shows unoriginality, modern replacement without consideration

The existing hinges are relatively modern brass that do not fit exactly the rebates in the door edge for them, and a new hinge from 2012 or later that is entirely inappropriate. New screws poorly chosen indicate the correct countersunk slot head that should be used. The hinge pins are worn as are the washers, the hinges are not appropriate for FD30 doors.

Fig. 24 Split in upper panel left edge requiring oak spliced repair

The upper panel has a split edge where it meets the right jamb (Fig. 24). This presents an unacceptable breach in its fire performance as well as its appearance, and should have a carefully selected piece of oak with a matching moisture content to the existing panel spliced in and finished to appear unobtrusive.

3.6 First Floor – Door 6 to the 'Scotland Alba' meeting room

Scotland: material(s) and features – Significance: 1 / Condition: A

Condition and issues as per Ireland, original handles and latches in situ and fully operational – worn hinges. The door opens into a fire compartment separate from the main corrodor containing doors 2-5.

Fig. 25 26 Oak entry door with original ironmongery – hinge with evidence of replacement

The existing hinges are relatively modern brass that do not fit exactly the rebates in the door edge for them, oak piecing in adjacent to both hinges indicates later fitting of smaller units. New screws poorly chosen indicate the correct countersunk slot head that should be used. The hinge pins are worn as are the washers, the hinges are not appropriate for FD30 doors.

Fig. 27 Oak Scotland Alba door 6 to the right in context with door 7 within a fire compartmented lobby

Fig. 28 Oak splice required for upper panel edge on the inside face

The upper panel has a split edge where it meets the left jamb (Fig. 28). This presents an unacceptable breach in its fire performance as well as its appearance, and should have a carefully selected piece of oak with a matching moisture content to the existing panel spliced in and finished to appear unobtrusive.

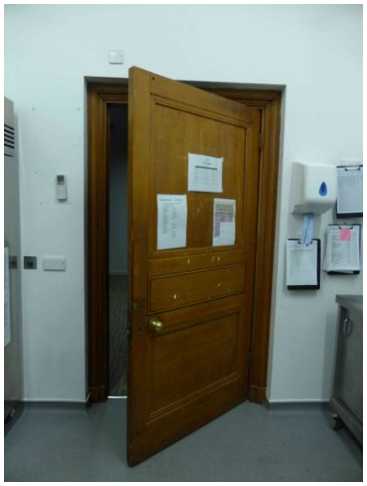
3.7 First Floor – Door 7 to the Servery

Servery: material(s) and features – Significance: 1 / Condition: A

The Servery door is in good condition (Fig. 21), albeit a heavily used door given the Servery use, a new locking mechanism has created interventions into the leaf however this is part of the extended life of the door and inevitable. Issues of fire seals and hinge suitability apply as with the other minor boardrooms.

Fig. 29 Arched pediment to minor boardrooms, note signwritten numbers (and room names)

Noted in the listing are well presented pedimented entry doors, ref. Gazetteer comments on the individual room. Externally the varnish is overly reflective but has not affected the colour of the oak n the same detrimental way as the interior of the doors. Any future redecoration works to the corridor (or any necessary repair work to inadvertent damage) needs to have in place a specification for refinishing the doors. Corridor-side ironmongery should also have the lacquer over the polished finish removes so that an authentic patina of use can moderate the overt difference visible between the new and old handles. The gaps to the doors requires attention for Fire safety reasons.



Figs. 30, 31 interior of Servery door (pedimented to lobby), no other features of significance remain within the room

Figs. 32 , 33 Heavily worn washered butt hinges – original lock case with missing brass cover plate, rose is detached

New screws poorly chosen indicate the correct countersunk slot head that should be used. The hinge pins are worn as are the washers, the hinges are not appropriate for FD30 doors. The original locks are poorly maintained and requires a replacement brass cover plate and overhaul, which can be undertaken during upgrade works.

Given the enhanced fire risk within a working Servery, the Fire Consultant has agreed that this enhanced fore risk through having heat producing appliances within the room would merit additional protection. It was agreed that the use of a clear intumescent varnish to the interior of the already varnished door (modern polyeurethane), would give additional surface integrity in the event of a fire.

4 Conclusion and summary

A set of drawings of each door accompany this Heritage Statement and set out the works required to respond to the special status of the doors and the technical requirements of fire compliance:

ES FD02 Door 1 'PRINCES GATE'
ES FD03 Door 2 'IRELAND'
ES FD04 Door 3 'BERESFORD PITE'
ES FD05 Door 4 'ENGLAND'
ES FD06 Door 5 'WALES'
ES FD07 Door 6 'SCOTLAND'
ES FD08 Door 7 'SERVERY'

The proposal to retain the doors and frames in as complete a way as possible is essential to preserve the integrity of the listed building, the enhancement of the fire effectiveness is to be achieved with as little visible impact to the doors as possible.

Technical products have been selected to perform to required standards in a visually unobtrusive a way as possible, and high quality joinery skills are required to make the doors fit the frames to provide appropriate levels of fit to ensure integrity in a fire situation.

Careful joinery work will secure the future of the doors and allow the lock cases to be removed, overhauled and refitted, with any missing cover plates or brass pins securing rose plates (as in the Servery) replaced with exactly matching items. Slot head countersunk screws in a finish matching the new FD30 hinges should be used throughout, is existing slot head screws can be salvaged without damage to the heads then they will be reused.

The Servery door will be prepared according to manufacturers guidance for the application of a clear intumescent varnish. Abrasive use will be restricted so that the surface of the oak is not altered prior to application of the new material.

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Appendix 1: *Requirements of the Design and Access Statement*

The following is guidance by Camden for the contents of a DAS. As the current Listed Building application is for secondary glazing and a single, temporary acoustic wall (refer to accompanying drawings ES A05E and ES A05P), some aspects of the requirements below are not pertinent to the application.

a description of the existing property or site:

for example, key features, character, age and previous alterations that have been undertaken

an explanation of the design principles and concepts behind the proposed development for example, the scope of proposed development

a description of the intended use of the proposed development

a description of the layout of the proposed development:

for example, how properties and public/private spaces will be arranged on the development site and their relationships with one another

details of the scale of the proposed development:

for example, the height, width and length of new properties and public/private spaces

a description of how public/private spaces will be landscaped in the proposed development

a description of the appearance of the proposed development:

for example, what materials and architectural styles will be used

an explanation of how local context has influenced the overall design
details of the proposed access to the development site and how equal and convenient vehicular and disabled access to buildings, spaces and the public transport network will be ensured and maintained

For developments that involve carrying out work on a listed building, the design and assess statement should also include the following information:

an explanation of how the historical and architectural importance of the listed building – in particular its physical features and setting – has been considered when designing the proposed development

Appendix 2: *Technical specification*

2.1 Envirograf hardwood smoke and fire seal product 69

Envirograf

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SURFACE MOUNTED INTUMESCENT FIRE & FIRE/SMOKE SEALS

PRODUCT 69

Adhesive intumescent seals which are surface mounted onto doors and door frames, sealing off fire and smoke

Price
£23.00

DESCRIPTION

A surface mounted intumescent fire or fire and smoke seal available in a range of colours and wood veneer finishes. Supplied as a pack with intumescent paper for use around lock and hinge areas.

ADVANTAGES

- Provide up to 60 minutes of fire protection. Seals fit directly over hinges with no hinge bind. No gap is necessary on hinge side
- Once fitted the face of the seal can be painted, although the brush smoke seal must not be painted

APPLICATION INSTRUCTIONS

Peel off backing paper from the self-adhesive fixing strip starting on the brush side and, with the smoke seal touching the door stop, press the intumescent seal into position. The seal can be easily cut with a sharp knife to fit around lock areas. Two 1100mm lengths are supplied for fitting down the closing stile and these are 2.4mm thick. One 1000mm long x 2.4mm thick strip is supplied for the head of the door frame. Two 1100mm long strips (1mm thick in standard version and 2.3mm thick in plastic version) are supplied for the back of the door frame, and these adhere from top to bottom, over the hinges (this helps to cool the hinges and screws in a fire). Intumescent paper is supplied for application around a rebated lock, to cool the lock in a fire. Remove lock from door, cut Envirograf® intumescent paper to size, wrap it around lock and sandwich it between the lock and door as you replace the lock. Also place paper under the keep plate. Labels are supplied for single or double doors, printed "Fire Door - Keep Shut". These seals comply with BS476 Part 22. The intumescent seals can be painted or varnished over but the brush must not be painted. If the brush is accidentally painted over it can be easily replaced by ordering Envirograf® Product 72 brush seals as replacements. Note: panel pins are supplied to secure through the brush smoke seal at each end and every 300mm apart along its length. These panel pins must be fitted as requested by building control officers and fire officers.

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2.2 Envirograf intumescent lock protection – product 71

Envirograf

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HINGE, LOCK AND DOOR CLOSER PROTECTION

PRODUCT 71

Flexible intumescent sheet used to protect metal hinges, locks and door closers in a fire

Price

£0.59

DESCRIPTION

A flexible intumescent protection sheet 1mm thick, unaffected by moisture, and supplied in standard sizes for quick and easy fitting (some with self-adhesive backing , some plain).

ADVANTAGES

- Supplied in standard sizes to make installation quick and convenient- Protects metalwork on doors for up to 91 minutes
- Intumescent paper cools the lock, hinges, and screws and protects them from overheating in the event of a fire
- Self-closing hinges can be individually adjusted, for example to have more tension, or to allow for buckled door tops

APPLICATION INSTRUCTIONS

Hinge, Lock and Door Closer Protection:
Hinges: Remove hinges from both door and frame, cut the cut the Enviregraff® intumescent paper to size to size,
sandwich it between hinge and rebate on both door and frame then screw the hinges back.
Lock & Keep: Remove lock, cut the Envirograff® intumescent paper to size, wrap it around the lock and sandwich it
between the lock and door as you replace the lock. Place paper under the keep plate as well.
Door Closer: Before fitting a door closer sandwich pre-cut cut the Envirograff® intumescent paper between the closer
and the door face then fasten the closer to the door. When ordering state the size of intumescent paper required for your door closer.

Self-Closing Hinges:
DO NOT peel off the grey intumescent paper on the back of the hinges: it is an essential part of the fire protection product!

2.3 Excel fire rated hinges

2.4 Servery intumescent varnish

INTUMESCENT PAINT AND VARNISHES FOR WOOD ETC.

PRODUCT 42

Intumescent coating for timber surfaces and timber products including doors

Not available to purchase online.

Please contact us on 01304 842 555 to order.

DESCRIPTION

A range of clear or white intumescent coatings, ideal for upgrading existing timber surfaces to either 30 or 60 minutes integrity. Can be easily applied internally or externally by brush, roller or spray.

ADVANTAGES

- A lasting solution for internal and external treated or untreated wood- Can be used on insulation board, MDF board, plasterboard, timber and a wide variety of wood-derived products, including doors, flooring and