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PROPOSED WINDOW REPLACEMENT. CATEGORY C(S) LISTED BUILDING,  
WOODVILLE, MOUNT ERICHT ROAD, RATTRAY, BLAIRGOWRIE PH10 7HS

APPLICATION FOR LISTED BUILDING CONSENT AND PLANNING PERMISSION



## DESIGN STATEMENT

### 1 Terms of Reference

1.1 This statement will focus on matters relating to the proposed replacement of existing sash and case windows at Woodville embracing current legislation and relative guidance for maintenance work such as this.

1.2 Woodville has been the applicants residence for many years. Now in her 80's and for health and wellbeing she wishes to provide an improved economic internal environment in line with energy conservation, climate change requirements and conservation best practice.

1.3 By way of personal reference I am an RIAS/RIBA chartered architect with over 40 years experience in all aspects of well informed, sensitive conservation work as an associate with LDN Architects. Now retired I undertake small projects.

I hold the mandatory Level 3 Accreditation for PAS 2035, a minimum legal requirement since January 2021 for all architects involved in refurbishment work to both traditional and listed buildings to avoid damage that happens when blindly following current building standards, normal construction practice or specifying wrong products / materials.

1.4 Sturrock Joinery are a well established firm of joiners specialising in traditional bespoke joinery and are architects' first choice on many important conservation projects. The company is now run by Alex Sturrock who himself is a qualified architect and gives lectures on traditional window construction for Historic Environment Scotland at the Engine Shed.

1.5 In compiling this statement every effort has been made to try and establish the historic value of each window within the property, reflected in the known style, manner of construction and materials used at the time.

### 2 Executive Summary

It is acknowledged that windows on historic buildings are an important aspect of its architectural character. Their design, craftsmanship, or other qualities often make them worthy of preservation. Evaluating the significance of these windows and planning for their repair or replacement can be a complex process involving both objective and subjective considerations.

This calls for understanding and respecting the significance of the original materials and features, repairing and retaining them wherever possible, and when necessary, replacing them in kind when required.

It also has to be acknowledged that windows in the twenty first century have to be seen to respond to the pressures on society created by climate change and energy conservation; all totally absent when sash and case windows were first designed, constructed and installed. Craft skill and understanding is essential.

The on-site survey coupled with historic research confirms that the windows at Woodville have gone through some changes during its life time and will be covered later in the design statement. The basic findings are as follows:

#### *Window Frames:*

I have not been able to locate historic photographic evidence to help confirm the pattern and style of the original windows that are being considered for replacement.

The noted variations tend to support change in some window frame configurations following possible repair / influence of glazing fashion trends to increase glass area by removing astragals, following Victorian improvement in glass manufacture and finished quality.

#### *Sash Boxes:*

Maintenance repairs undertaken over the years, sills have been spliced indicating poor painting maintenance or incorrect selection of sill timber.

*Glazing:*

The survey did not pick up existence of any historic glass

*Ironmongery:*

In line with internal changes and general use that have taken place.

*Interior Shutters:*

Provided in principal rooms.

*Thermal Performance Improvements:*

None. The condition of the existing timber frame limits what can be undertaken in line with Historic England thermal improvement details. Illustrated later in statement

*Decoration:*

Over-painting maintenance work over the years has left many sash frames inoperable. As a practicing Principal Designer and years of conservation experience it strongly suggests that lead based coats of paint may still exist in the build up. The danger it presents to occupants and trades is generally understated along with the high costs involved in dealing with its removal. Health and Safety issues, procedures and protocols to be considered along with health and wellbeing if simply left.

*Window Replacement:*

The survey shows that the vast majority of the windows and sash box timbers have sadly deteriorated to the point where successful refurbishment / repair is uncertain of success and would involve major replacement of elements. The work in stabilising the surviving existing wood can not be guaranteed nor the resulting service life under normal domestic use.

Dealing with the lead paint will be expensive with protective covers for flooring / furniture / extraction and work tent along with breathing protection for operatives. Removing from site to undertake in extract tent will leave the building openings vulnerable for long periods where the client will be staying to contain costs.

With replacement an ordered replacement programme will be undertaken, with minimum disturbance, installing bespoke windows, manufactured by a recognised highly skilled conservation joinery company, adopting historic profiles and best conservation practice to ensure that all new window units capture the character and significance of the original design for the building. The view of the building from Cuttle Burn Den will be retained. Time on site will be reduced and building security maintained.

### 3 Historical Evaluation and Design

*3.1 Architectural Provenance in Blairgowrie:*

Part of any historical evaluation needs to be informed, where possible, by knowledge of style, skills of the architect involved along with an understanding of construction practice at the time and history of period windows, vital in making a proper evaluation. This will help inform what is seen and assist identify / confirm original detail.

*3.2 Woodville (taken from listing)*

Early 19<sup>th</sup> century, 2-storey with attic and cellar and symmetrical front elevation. Windows follow 4-, 8- and 12-pane glazing patterns in timber sash and case windows. Working timber shutters provided to selected windows.

The building first appears on the first edition Ordnance Survey Map of 1865.

Architect unknown.

Woodville is thought to have been built as a wedding present for the Proctor family. By 1881 it was occupied by a jute manufacturer named Baxter and a perfect example of a traditional early 19<sup>th</sup> century middle sized domestic property.

*DEF Addendum:* The stated link to jute manufacture and Georgian style of the building links well with the period 1830 to 1845 when 7 new jute mills were being constructed along the banks of the Ericht.

*Listed:* 04 September 2003 and includes boundary walls, Gatepiers and Railings.  
*Category C(S) (header photograph illustrates)*

### 3.3 Heritage Value of the Existing Windows

Surviving historic fenestrations are an irreplaceable resource which should be conserved and repaired whenever possible. Existing traditional windows bear witness to the artistic, social, economic, technological development and craft advancement, particularly glass manufacture over the years. Detailing was influenced by architectural fashion and reflected the status of the dwelling and owner. As the windows profoundly affect the appearance of the building it is important to properly assess their heritage value.

By its nature it will be site specific, with regionally oriented architectural comparisons to determine the significance of the windows in question. The significance will be made within the context of the whole building; the windows being one architectural element.

#### 3.3.1 Evidential Value:

The initial condition survey records the changes to the window arrangements in the life of the building and presents challenges in interpretation.

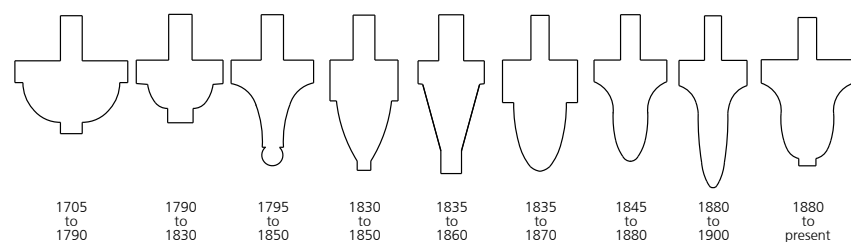
#### 3.3.2 Original Windows Construction Note:

Frames were generally made of yellow deal (*Baltic Pine*), and the sills European Oak. In superior work, oak, teak, or pitch pine were generally used for the heads, jambs and linings, with teak for the sills due to its superior resistance to weather and freedom from casting off the paint finish. Sashes were generally made of deal, although oak and mahogany were sometimes used for appearance, they have been found not to weather well unless kept well painted on the outside.

Use of symmetry throughout the design. It is reasonable to assume that these patterns were adopted for all window openings. Most window openings still have original sash boxes identified by the traditional Edinburgh style handling of the detail – radius end to both the external face plate of the sash box and the parting bead; suggesting use of Edinburgh trades to manufacture and supply. A common practice at the time.

The original pattern of the vertical sash and case arrangement would normally follow a 50/50 division of the daylight space with a 6 over 6 astragal arrangement. Sashes would not have horns. All of the above reflect standard historic, period construction and design.

The inner moulding traditionally evolved over time, contributing to the expression of style or period, providing a useful means of dating a building as well as helping define the aesthetics of the window, the room and polite society who inhabited it. Astragal profiles gathered over the years are illustrated in the chart below:



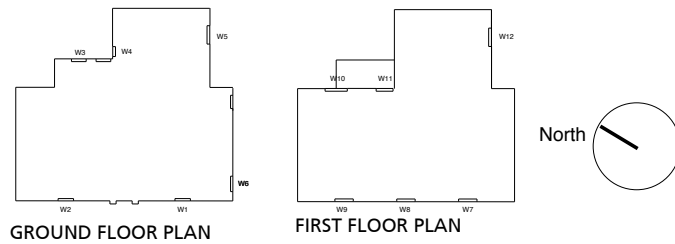
The historic astragal mouldings at Woodville are variations of what is known as lamb's tongue. Current conservation guides always recommend that new windows follow the traditional historic detailing that is present on the windows in question, allowing slight modification to strengthen support for insulated glazing that climate change legislation is calling for.

The condition survey does not confirm the type of timber used in the construction. Windows generally over-painted and unopenable; their existence suggests compliance with the historic construction references provided earlier in the design statement.

3.3.3 *Window Configurations and Location:*

Window configurations recorded as noted below along with location plan

6 over 6 with 1 over 1 split frame	windows 1, 2, 5, 7, 8 and 9
4 over 4 with 1 over 1 split frame	window 6
2 over 2 with 1 over 1 split frame	window 4
2 over 2 with 1 over 1 split frame	window 10
2 over 2 with 1 over 1/3 2/3 split	window 12
1 over 1 with 1 over 1 split frame	window 11
1 over 1 with casement	window 3
1 over 1 with casement	window 4



**WINDOW LOCATION PLAN**

Windows numbered in line with condition report

From this list it is possible to identify windows that no longer conform to Georgian symmetry and can be referred to the condition survey prepared by Alexander Sturrock. All ground floor and first floor windows to be replaced, with the exception of W 03. Original windows will replicate the original pattern; modified windows will adopt the current existing pattern with moulded timber pattern matching historic approved to lessen impact (*window schedule DWG 001B refers*).

**4 Physical Evaluation**

The key to the request for window replacement is the desire to have comfort to help cope with underlying health problems (*health and wellbeing*), energy conservation / heating costs and ever tightening legislation to address climate change.

The applicants wish is to address the current window issues and start on a realistic phased window replacement, adopting and applying best conservation practice, avoiding mistakes of the past and install replacement windows that respect and follow original design / construction whilst complying with ever increasing mandatory 21<sup>st</sup> century regulation requirements.

**4.1 Location and Context**

For location please refer to Alexander Sturrock Condition Survey and item 3.3.3 set out above.

**4.2 Condition of Paint**

All of the windows carry over-painting in varying degrees. There are serious practical issues to address in a window repair contract relating to the presence of lead paint which is never fully addressed and even dismissed at this stage. There are serious practical issues to address for both the owner, joiner and painting trades, that can result from ignoring Health and Safety / wellbeing issues in past interventions.

The thermal and operational failings of the windows are a consequence of poor maintenance and inherited historic shortcomings in glazing design. Should the application be approved and replacement windows installed, a period of monitoring will take place. The intention is to start a phased replacement programme, starting with the windows that have the most impact on daily family use.

The work will follow stated conservation best practice. To ensure architectural integrity the replacement windows will follow latest conservation guides to achieve a true reflection of the building's character. A specialist joinery company, Alexander Sturrock Joinery, will be engaged to undertake this work and supply profile samples to confirm compliance if required

**4.3 Condition of Sash (rails, stiles and astragals)**

The majority of the sash frames under consideration for replacement are in the region of 193 years old and in poor condition. There is a 'built in' vulnerability that will reduce the sash frames effectiveness in dealing with the introduction of new timber repairs. Operational stresses and extreme weather conditions that will increase due to climate change. At this point in time I have not been able to confirm the timber species used in the original window work. Replacement will remove any uncertainty and provide an historic referenced replacement window using a sustainable timber that will have a life expectancy of 200 years and more, if properly maintained.

**4.4 Shutter Panels**

Where shutter panels are installed work is to be undertaken to eliminate any condensation issues in the shutter pocket void.

**4.5 Glazing Problems**

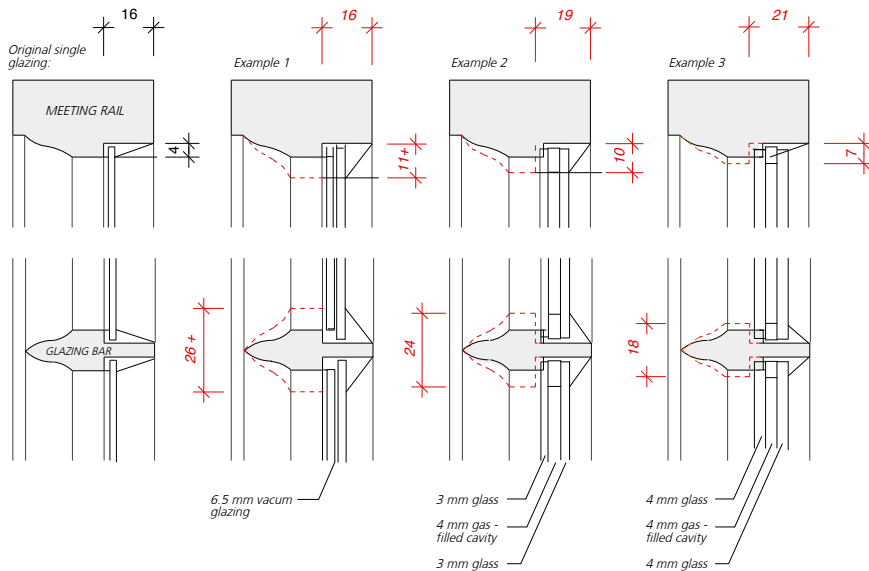
As in the Victorian era, windows have moved forward with developments in glass. Thermal efficiency is now a mandatory part of construction to improve living conditions and deal with climate change.

It is now possible to incorporate very slim double glazing in conjunction with an authentic glazing bar profile capable of taking a crisp putty bead. In some versions it is possible to include drawn glass to improve the visual appearance. Electing to use a bespoke timber manufacturer with conservation experience / credentials it will be possible to supply sample boards with frame profiles to help allay any concerns.

This would be a suitable solution where the applicant is proposing to overcome condensation issues with new constructed units with appropriate materials, detailing, traditional proportions, frame size and glazing bar design and pattern supported by conservation bodies. It is worth noting that Historic England are now producing information sheets to help inform and give direction in this matter to take things forward, such as that shown below.

TYPICAL SASH WINDOW PROFILES (e.g. 18th - mid 19th century)

SLIM PROFILE INSULATED GLAZED UNITS (IGU)  
Dimensions in red show the minimum rebate and glazing bar dimensions recommended by the IGU manufacturer



**Replacement Windows:**

At Edinkillie the significance of the building has been harmed by the installation of replacement windows of a non historic design in the past.

The design of the replacement windows will be based on existing windows that survive elsewhere in the building. As part of the replacement proposal it is intended to take full advantage of developments in slim double glazing units. The IGU guide provided for Historic England has been used as a reference to assist in reworking glazing checks within the original historical astragal thickness to help provide secure, robust installation, enhance energy efficiency and retain ease of window operation without resorting to secondary glazing.

The attached illustration is taken from an Historic England guide showing the implications of fitting new slim-profile double glazed units in replacement windows where:

- the new windows are of a more sympathetic design, replicating original profiles and the net impact on significance will be neutral or positive;
- no incidental damage to the building fabric will result from the removal of the existing windows.

The historic astragal thicknesses can be maintained.

REPRODUCED FROM HISTORIC ENGLAND GUIDE: Traditional Windows Their Care, Repair and Upgrading

**4.6 Operational Soundness**

In the replacement proposal we are reverting to a simple technology, assisted by advancements that are known to work to provide and maintain operational soundness of sash and case windows.

Using a cold pressed linseed oil paint system, free of resins, will provide deep wood protection and a surface layer that will not seal sashes together and function with a 15 year maintenance paint programme rather than the 3 year cycle for the current water based paints. Stable timber, proper machined tolerances and weather stripping greatly improve the operation of what is an excellent operational design concept and historic model window.

#### 4.7 Compliance with Building Regulations

The windows whether repaired or replaced will be required to conform with some mandatory technical details that have been introduced over the years. The existing windows structural integrity would be seriously tested by implementing some of the provisions listed above.

It is accepted that a 'reasonable approach' must be taken that balances conservation with legislation. At Woodville we all must accept and recognise this. What at face value may be perceived as an apparent conflict with legislation can usually be resolved by sensible discussion at an early stage to arrive at an agreed solution.

#### 4.8 Hardware

A well considered review will be made of all historic ironmongery, it will then be salvaged, refurbished where possible re-used. Any deficiencies will be made up from traditional stock items held by original manufacturers, supplied and installed at Woodville in the first instance.

#### 4.9 Proposed Construction Material

The proposal is that the new bespoke timber sash and case windows be formed using Accoya timber to replicate the historic detail / construction of the original. Accoya timber has been selected because of its proven stability, durability, being sustainably sourced with FSC certification and minimum environmental impact.

To ensure longevity the windows will be painted using cold pressed linseed oil in three coats at 70 degrees Centigrade to ensure maximum penetration into the wood and provide a 15 year paint maintenance cycle. As the linseed oil penetrates deep into the wood it will not create any of the over-painting / binding sash problems currently being experienced and will ensure operational soundness. The glazing rebates will be painted with shellac to avoid any issues with the end seals of the double glazed units.

The replacement windows will conform to current regulations employing discreet detailing approved by conservation authorities and planners. An approved bespoke joinery firm Alexander Sturrock Joiners, established 1872, has been approached to engage in the manufacture / installation and is happy to provide sample boards with run sections of all details. A factory visit can be arranged to acquaint members of the planning department with the companies operation and skills.

The company is a family business, experienced in conservation work and used by leading architectural practices in this field.

#### 4.10 Pointing Round Windows – Detail Requested

Historic arrangement – sash boxes face bedded with hair lime plaster to ensure full contact with window masonry rebate. The outer exposed edge pointed up using burnt sand mastic (*burnt sand and oil-driers*) to ensure a long lasting, wind and water tight flexible joint. This has never been surpassed and should not be altered.

New installation to follow traditional practice:

- Eroded, defective masonry should be repaired to form a neat edge;
- Spaces between the frame and masonry to be packed with haired lime mortar or rot proof compressible filler board;
- Test absorbency of the masonry – use tape if required to avoid spread of oil stain;
- Mix burnt sand and oil in accord with manufacturers instruction;
- Place in a mastic box and push into the gap between window / masonry through slot in mastic box – fill from the bottom upwards. Maintain constant margin;
- Keep tools wiped with an oiled cloth during application

## 5 Window Replacement (Determining Significance)

The whole process of going through the gather to provide this design statement has been extremely helpful in identifying not only value but also significance and what will enrich. Determining significance can prove to be difficult due to pressure to avoid or make up for mistakes made in the past caused by lack of understanding. I would like to quote Conservation Principle 3.2, as I see in it support for the applicant's view that window replacement could be entirely the right choice.

*'The significance of a place embraces all the diverse and natural heritage values that people associate with it, or which prompt them to respond to it. These values tend to grow in strength and complexity over time, as understanding deepens and people's perceptions of a place evolve.'* Conservation Principles, Policies and Guidance for the Sustainable Management of the Historic Environment (2008) Principle 3.2

The values that give significance to heritage assets are wide-ranging and inter-related; buildings and places provide material evidence about the lives of past generations. For example, they may offer insights into developments in construction technology, reflecting the distribution of materials, skills, ideas, knowledge, money and power in particular locations and at particular points in time.

The process does throw into sharp relief what the important issues are and helps form a reasoned response. There is a danger that *'these values tend to grow in strength and complexity over time'* which can result in a lockdown approach, the answer is an automatic NO to a range of well considered proposals. Replacement could be entirely the right choice.

To summarise the step by step process to arrive at a balanced view for what is being proposed at Woodville is set out as follows:

### *Architectural/Historic Significance:*

Only unaltered windows can carry architectural/historical significance. Replacement and altered windows have no real significance.

The merit of the windows in question needs to be judged in the wider context when compared with others in the immediate surrounding properties in the Rattray and Blairgowrie area (*age, competence, and quality of design, along with historic importance*).

### *Condition:*

The condition and the full cost of proper conservation repair puts this work beyond the reach of the applicant given that the windows simply reflect standard detailing of the time when labour costs were low (*2/3 material / 1/3 labour*). Remedial repairs on site will be expensive, disruptive and present health hazards. Removing the windows to a tented / vented workspace will leave the building vulnerable. Those refurbished windows will carry deficiencies due to the condition of the retained timber elements.

The repair work required to the existing windows would not serve to extend their useful life and in time the property owner will revisit window issues and costs that require their replacement.

### *Evidential Value:*

Evidential Value reflects the potential of a building or its fabric to yield information about the past. Rarity adds to evidential value. The fabric of the windows is old and has a degree of evidential value. The detail mouldings are common for the period and not rare. In contrast many of the 'off the peg traditional' windows have poor moulding profiles. They would be inappropriate in the Woodville historic openings and would have no evidential value.

The deterioration and poor condition of the existing windows works against giving weight to any evidential value. A bespoke window constructed using approved moulded sections helps maintain the character which does provide some value.

### *Historic Value:*

Most historic windows illustrate, in varying degrees, the materials and technology, craftsmanship and architectural taste of the period from which they date. The known provenance of the window design that exists for the Woodville windows is standard for its time and does not make them special.

# DENIS E FORREST

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## *Aesthetic Value:*

The fenestration forms an integral part of the design of any building and contributes to a building's visual interest. If altered, its aesthetic qualities may add to or detract from the interest of the building. Replicas or recreations of fenestrations of aesthetic quality will maintain its value. In contrast, much 'off-the-peg' joinery and modern glazing do detract from the aesthetic value of the building. Past changes have already done that to some extent.

The nature and manner of the window replacement being proposed at Woodville will retain and maintain its aesthetic value.

## *Significance:*

Significance is the sum total of heritage values. All things having been considered replacement is entirely the right choice.

## **6 Conclusions**

6.1 The proposal will respect and preserve the character of the building in design and materials. The proposal remains rooted to the massing and scale of the original property, to its setting in Rattray whilst allowing the viewer to read the building and record the changes that have taken place over time.

6.2 The demands being made to reduce environmental impact due to climate change and at the same time achieve comfortable living conditions within dwellings for the health and wellbeing of the occupants is now a key issue. A reasoned responsible approach will assist the applicant to continue to use Woodville as her long-term home.

6.3 Throughout this process the window replacement design development has been informed by an understanding of the established design language, guidance and technical requirements involved. It is considered that the resulting proposals are appropriate in context.

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