

Window Replacement

Overnewton Court

46 Overnewton Street

Glasgow

Yorkhill Housing Association Ltd

1271 Argyle Street

Glasgow

G3 8TH

DECEMBER 2019

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Introduction

Langmuir and Hay, as Cost Consultants, were appointed by Yorkhill Housing Association in November 2019 to carry out a window renewal options appraisal for its housing development for elderly residents at 46 Overnewton Street in Glasgow.

The brief was to identify and source various window replacement options suitable for use in this type of residential setting taking account of the property type and the age and needs of the tenants.

This report highlights the views of the tenants, and identifies their specific requirements, preferences and the issues which were of most concern to them.

It also looks at three different window choices most frequently installed in residential properties of this type, and highlights the advantages and disadvantages of each from the perspective of both the landlord and tenants.

In addition the report gives an indication of likely costs for each window type and outlines a timeline for both procurement and installation.

Existing Property Details:

The property is a 5 storey development and comprises 39 No. flats, 3 No. guest rooms, 1 No. office, 1 No. visitors' room, 1 No. laundry, 5 No. waste disposal rooms and common areas.

The current windows are timber with a 'tilt and turn' mechanism and finished both internally and externally with a mahogany stain finish. They are over 20 years old and showing considerable signs of wear.

All of the areas listed are to be assessed as part of the replacement contract and in total there are 216 windows including 6 panels at the rear of the ground floor common room area.

Tenants Consultation

At the commencement of the project all Tenants were invited to complete a questionnaire requesting their views on the windows that are currently installed, and specifically whether they were experiencing any problems with them. This information will assist the Housing Association team and Consultants to determine which of the window type options will best suit the needs of the Tenants, as well as providing the best solution for the Association in terms of cost and medium to long term maintenance.

A total of twenty responses were received and are summarized in the attached email from the Property Services Officer (see appendix 1)

In addition to the questionnaire two Tenants' consultation meetings were held on 20th and 21st November 2019. Tenants were invited to expand on the points raised in the questionnaires and were also asked for their preferences in terms of type, operation and colour of windows they would like to see installed.

The principal issues identified by Tenants from the questionnaires and consultations were:-

- **Difficulty in operating the windows**

This is a particular problem in the kitchens where the windows are mounted behind the sink base units making the windows difficult to reach. It was recognized that without moving the sink base units access to these windows would always be somewhat compromised. It was generally felt that keeping the window handles as low as possible would help to mitigate this issue.

- **Interference with blinds**

The inward opening mechanism of the current tilt and turn windows is a concern to some Tenants because the inward opening sashes clashed with their blinds when sitting in the 'tilt back' vented position. The Tenants were advised that this was a problem with all 'tilt back' sashes but proprietary solutions, including systems to attach blinds directly to the frames, were available.

- **Difficulty with the weight of the windows**

The size and weight of the opening sashes in some of the larger windows makes it difficult for some Tenants to clean the outside of their windows. The Consultants advised that this could be addressed by dividing the larger windows into two by introducing a central mullion and having smaller opening sashes at either side of the new mullion. A variation on this arrangement was discussed which involved an opening sash on one side with a fixed pane

on the other, however, it was noted that cleaning the fixed pane was likely to be more difficult for some of the more elderly Tenants.

- **Conflicting opening sashes at the corner windows**

Tenants who live in corner flats stated that they are unable to open both sashes at the same time to allow for additional cross ventilation as both sashes clash when in the 'tilt back' position. The Consultants advised that this problem could also be overcome by dividing the windows as noted above. In this instance the two opening sashes would be mounted furthest from the corner to avoid any conflict when opened.

- **The impact of the dark stain on the inside of the windows**

Many Tenants welcomed the idea of introducing a lighter colour on the inside of the windows to brighten up their rooms. The majority view of the Tenants was that a white colour would be the preference for inside whilst retaining the mahogany colour on the outside.

- **Maintenance and cleaning**

Many Tenants expressed a preference for uPVC windows as they were far easier to clean and maintain. The Consultants stated that uPVC windows were generally seen as a favourable option, especially in a high rise building such as Overnewton Court, because this window type requires less frequent maintenance than timber framed windows. External maintenance works on buildings with multiple storeys requires specific, and often onerous, access solutions.

- **Traffic noise**

The issue of traffic noise was raised by some Tenants. It was generally felt, however, that due to the relatively low volumes of traffic in the area special and additional acoustic solutions would not be required. The sound proofing qualities of modern double glazed windows would provide very good levels of noise reduction suitable for this location.

- **Window arrangements and access for cleaning**

The possibility of removing the fixed glazing panels below the opening sashes of the lounge windows was discussed as these were reported by some tenants as being difficult to clean. The Consultants stated that the timber rail which separated the opening sashes from the glazed panels below was there for safety reasons to prevent people from falling out the window. If the rail were to be removed then metal safety barriers would be required across the outside of the windows.

- **Introducing more daylight**

A query was raised as to whether the astragals could be removed on the smaller windows to allow more daylight in. The Consultants advised that this was a possibility as the change was minimal and unlikely to cause any aesthetic problems with the Planning Dept.

- **Timescales and impact of the works**

The extent of disruption to the tenants was discussed. Tenants were advised that there would be minimal disruption during the course of the works with the installation in each flat taking no more than 1 day, with the exception from the corner flats which were likely to take 2 days. Tenants would not be asked to leave their property during the course of the works, although there would be restricted access to rooms whilst the contractors are on site. Tenants will be asked to take down all blinds/curtains and move all small personal items away from the work area before the contractor starts work. Furniture will also need to be moved away from the front of the windows and assistance with this, where required, will be provided by the Association / Contractor.

The overall timescale for the works on site was expected to take in the region of 4 - 8 weeks.

Window Choices

There are multiple different window systems available for housing projects. This report has selected three window frame materials which are particularly suited for residential use in Scotland - **timber, Upvc and aluminium.**

The report also looks at the most appropriate and frequently used styles of operation for these window choices - **tilt & turn, top swing and side swing.**

There are also several glazing options available that will provide additional specific solutions – such as acoustic and / or thermal insulation.

Frame Materials:

TIMBER

Timber windows are manufactured in both softwood or hardwood. Softwood is usually the cheaper option while hardwood is more durable and has a longer life span. Timber windows can be finished externally with an aluminium cladding to provide additional protection and to reduce maintenance.

Advantages

- Long life span – up to 60 years if properly maintained
- Good insulating qualities
- Can be repaired if damaged - unlike other materials
- Inside and outside frame faces can be different colours
- Recyclable and environmentally friendly

Disadvantages

- More expensive than other materials
- High maintenance costs – slightly less with aluminium clad windows
- Heavier than other materials - making sashes slightly more difficult to open
- Installation can be more challenging because of weight
- Manufacturing periods tend to be longer than other window types

uPVC

Upvc windows are increasingly becoming the window of choice for residential use due to their low cost and minimal maintenance.

Advantages

- Cheaper than other window options although costs will vary with quality

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- Best for acoustic and thermal insulation as the operating and locking system applies high pressure on the seals
 - Non-porous so no air or liquid can pass through – providing that they are fitted correctly
 - Recyclable and environmentally friendly – uPVC can be recycled up to ten times making it ecologically sustainable
 - Low maintenance
 - Inside and outside faces can be in different colours – outside faces can also have ‘wood grain effect’ finish
 - Lighter to install

Disadvantages

- Shorter life span than other materials – can be half that of timber
- Larger frame sections reducing the amount of daylight
- White uPVC can discolour as it ages with exposure to light - particularly in cheaper windows
- Difficult to repair
- Inward opening sashes can conflict with taps and furniture

ALUMINIUM

Aluminium windows are generally less frequently used in residential properties than timber or Upvc windows but are becoming more popular for contemporary buildings to provide a modern aesthetic.

Advantages

- Slimmer profiles and narrower frames than other window types – maximizing daylight
- Very durable with low maintenance
- Inside and outside faces can be in different colours
- Less expensive than timber windows

Disadvantages

- Least energy efficient of all materials - although most manufacturers now offer frames with built in thermal breaks to improve efficiency
- Can be cold to touch and are often prone to condensation

Types of Operation:

TILT AND TURN

This mechanism provides two opening modes; a tilt back mode and an inward side opening mode (see images below). The tilt back mode is generally for ventilation while the inward opening mode allows for

easy and safe cleaning to the outside of the window. Window sashes are inward opening so care has to be taken to avoid furniture and taps etc. The frames generally are bulkier than other window types as they have to house the complex opening mechanism. The window handle is mounted half way up the opening sash. Where fire escape windows are a requirement then these type of windows are best due to the clear and unobstructed opening they provide.



Closed position
(internal view)



Inward side opening
(internal view)



Inward tilt back opening
(internal view)

TOP SWING

The top swing mechanism opens outwards and allows the window sash to be fully reversible for easy and safe cleaning both internally and externally (see images below). Safety catches are mounted in the window frame to restrict the opening for safety reasons and have to be released before the window sash can be fully opened. The opening sash can have a single or double handle operation with handle/s mounted either half way up the window or centrally on the bottom rail of the opening sash (images show double handle arrangement).



Outward opening
(external view)



Flipping over
(external view)



Fully reversed
(external view)

SIDE SWING

The side swing mechanism also opens outwards and allows the window sash to be fully reversible for easy and safe cleaning both internally and externally (see image below). As with the top swing mechanism, safety catches restrict the opening for safety reasons and have to be released before the sash can be fully opened. The opening sash has a single handle operation and the handle itself is mounted centrally on the bottom rail of opening sash.



Fully opened and partially opened
(external view)

Types of Glazing / Glass:

Building Regulations dictate that new windows have to meet specified standards for insulation to reduce the amount of heat loss from a property. The largest amount of heat loss from windows is through the glass and all modern windows will have insulated glazing as standard to comply with current regulations. Heat loss problems through the glazing can be improved with the introduction of specialized glasses such as low-e glass.

Insulated glazing – Double or Triple Glazing

- Insulated window glazing refers to two or more panes of glass. To insulate the window the glass panes are spaced apart and hermetically sealed leaving an insulated air space between the panes. The insulation can be further improved by filling the air space between the glass panes with Argon gas. Triple glazing will also improve the insulating qualities (both thermally and acoustically) but will add additional weight to the window.

Low-e glass

- Low emissivity glass controls the heat transfer through the window. Windows manufactured with low-e glass typically cost about 10-15% more but they reduce energy loss by as much as 30-50%. Low-e glass can also reduce solar gain by the application of specific coatings – keeping south facing rooms cooler in hot weather.

Programming

The programme dates listed below are provisional and the expected overall completion date is dependent on the type of window selected:-

- Window replacement report to be submitted for client approval – **Friday 6th December 2019**
- Management committee meeting to discuss report – **Thursday 12th December 2019**
- Client instructions to proceed with preferred option – **Monday 16th December 2019**
- Quick quote and issue of tender documents – **Friday 31st January 2020**
- Tenders returned – **Monday 17th February 2020**
- Submit tender report for client approval – **Monday 24th February 2020**
- Client approval period – **Monday 24th February to Friday 6th March 2020**
- Issue tender acceptance – **Monday 9th March 2020**
- Contractor's lead in period (will depend on window type selected) – **8 to 12 weeks**
- Site start date site (based on 12 week lead in period) – **Monday 25th May 2020**
- On site programme period – **4 weeks**
- Expected completion date – **Monday 22nd June 2020**

Costs

The costs indicated below are based on competitive tender being procured via the 'Quick Quote' through Public Contracts Scotland (PCS) portal. Tenders will be issued on Friday 31st January 2020 with tender return date of 17th February 2020.

All tendering contractors will be required to submit a detailed method statement showing how the works will be carried out in order to minimize any disruption to the residents. They will be required to identify and price for any anticipated additional works that may be necessary in order to carry out the window installation contract, including the potential removal, reinstallation or replacement of cladding at corner windows.

In addition to simply assessing costs submitted by tendering contractors, the tender review process will identify contractors who have a proven track record for this type of work.

It should be recognized that tenders priced during the Financial Year End period may increase. In this high spend period, suppliers may receive higher order numbers and need to work on a faster production turn-around timescale. This can affect labour and material costs. Similarly, many contractors will have a last minute full order book which may affect their labour resourcing and therefore costs. This is difficult to predict but may lead to a considerable spread in submitted tender costs.

Whilst capital cost is critical, the Association will wish to consider the whole life cost of this project. As appointed Cost Consultants, Langmuir & Hay will guide the Association through the tender reviews and the whole life cost of each of the options.

The budget cost for each of the window options is shown in the summary table below. The options are coloured green and red to denote the lowest anticipated cost [green] and the highest anticipated cost [red].

	TIMBER	uPVC	ALUMINIUM
TILT AND TURN	£220k - £250k	£210k - £240k	£250k - £280k
TOP SWING	£215k - £245k	£205k - £235k	£245k - £275k
SIDE SWING	£210k - £240k	£200k - £230k	£240k - £270k

The budget cost assessment indicates that uPVC window frames will be priced more competitively than other material types. A whole life costing exercise would likely indicate that uPVC frames would achieve the lowest whole life cost. There is minimal cost difference in the window types [tilt & turn, top swing, side swing] and the Association may wish to select the most appropriate opening type for their Tenants group.

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- **The cost of uPVC windows are generally found to be cheaper** than both timber and aluminium windows. **The lifecycle of uPVC and aluminium windows is much more favourable** than that of timber windows in that timber windows require external decoration in the order of every 5-10 years, dependant on exposure.

Summary

In selecting the most appropriate window solution for this project, the important factors to be considered are:-

The height of the building - 5 storey

- This makes maintenance a more complex and expensive exercise. In this location, **timber can be considered a less appropriate solution** due to a shorter maintenance cycle (every 4/5 years). The use of timber windows with an aluminium cladding can increase this. **Both uPVC and aluminium windows have low maintenance requirements.**

Ease of use for residents

- The weight of larger windows may be difficult for elderly residents to open - **all of the three window types** can be easily divided into smaller panels to reduce the size and weight of opening sashes.
- In all locations where there is an opening window above a kitchen sink, it will be potentially more difficult to access - **all of the three operating systems** allow those windows to be opened with a handle mounted centrally on the bottom of the window to make opening easier.
- Cleaning the windows is difficult for some of the residents – **all of the three operating systems** allow the opening sashes to be fully reversed for easy and safe cleaning to the outside of the windows. None of the operating system however make the cleaning of the fixed glazing panels under the lounge windows an easy task for elderly tenants.
- The opening sashes of the corner windows clash when opened – **all of the three window types** can be divided into two panels with the panel nearest the corner being a fixed panel to prevent any conflict when opening. Those same fixed panels, however, will be more difficult for elderly tenants to access when cleaning the outside of the windows.

Introducing more natural daylight

- The level of natural daylighting was a concern to residents – **all of the three window types** can have a different colour on the inside to that on the outside. This allows the inside of the windows to be finished in a light colour to improve natural daylighting.

Cost

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- A summary of the costs for the project based on UPVC tilt and turn windows is as follows. The costs are based on the average of the range.

Window replacements (assumed the mid range of tilt and turn)	£225,000.00
Provisional allowance for works to cladding at corner windows	£30,000.00
Provisional allowance for works to existing built-in furniture at windows in common areas.	<u>£10,000.00</u>
	£265,000.00
Contingencies at 10%	<u>£26,500.00</u>
	<u>£290,000.00</u>
V.A.T	<u>£43,800.00</u>

N.B. There have been allowances made for cladding works apart from the corner mullions.
No allowances made for fees, disbursements and approvals etc.

Appendix 1

Morris Architects

From: Kenny Davidson <kdavidson@YorkhillHA.org>
Sent: 28 November 2019 15:32
To: monty.langmuir@langmuirandhay.com
Cc: morris.architects@btinternet.com; Grant Kennedy; Robert Calvert; Pauline Hollinsworth
Subject: Yorkhill H.A. - No. 46 Overnewton Street (Complex) - Replacement Window Installations (Flats & Common-Areas) - Residents' Consultation Meetings - Summary of Discussions

Monty,

I hope this e-mail finds you well and you have fully recovered.

Following recent Residents' Consultation Meetings I take this opportunity to provide a summary of discussions for record purposes; also assisting with preparation of your report (required by Friday, 6TH December 2019) and which will form part of discussions within our forthcoming Management Committee Meeting of Thursday, 12TH December 2019.

I have copied Robert Morris into this e-mail as Robert was keen to receive details of feedback from residents by tomorrow.

Present at both meetings were your Paul Black, Robert Morris (Morris Architects), Grant Kennedy (Y.H.A. Housing Services Manager), Cat MacKenzie (Y.H.A. Tenancy Services Assistant) and myself. Robert Calvert (Y.H.A. Property Services Manager) was also present at the second of the meetings.

Meetings: Wednesday 20TH November 2019 (16:00 Hrs) & Thursday 21ST November 2019 (18:00 Hrs)

A total of 16 residents attended the first meeting.

A total of 3 residents attended the second meeting.

The overall theme regarding the dissatisfaction with the dwelling-windows was:

- Being too heavy to operate (especially for frail residents)
- Being too awkward to open where they were located above the kitchen sink (especially for the vertically challenged).
- Windows blocking-out a lot of natural light due to the internal colour being quite dark, significant width of frames and astragals.
- At corner windows there is an issue where two windows cannot be opened at the same time as they would impact on each other.

In short, residents desire replacement windows to be easy to operate for those who are infirm or vertically challenged, energy efficient and allowing as much natural light into the home as possible.

Survey

In terms of the survey we received a total of 20 responses – representing over 50% of the residents – feedback relating to window preferences (material/colour(s)) summarised below:

- UPVC brown (external)/brown (internal): 4 in favour (20%)
- UPVC brown (external)/white internal): 10 in favour (50%)

• Wooden (as existing):	2 in favour	(10%)
• Aluminium:	0 in favour	(0%)
• No preference:	4 having no preference	(20%)

The UPVC option was most popular with 70% of residents preferring this type, and the majority of the overall responses wished a colour of brown on the outside to match surrounding buildings and white inside to brighten the room.

Comments received within meeting/within written feedback as detailed below:

- My window did not close recently; now repaired and fully operational.
- Joiner has attended twice in order to address drafts; any type of replacement window will do as long as its draft-proof.
- When opened I can never close my window again. Also, I am unable to reach the kitchen window-handle.
- Due to blinds being installed my windows have limited opening capability. Also, window-locks can be problematic to release in terms of operation.
- My bedroom window has had to be kept closed as when opened it is very difficult to close. I have similar difficulties with other windows in relation to closing operations. Problems have been dealt with promptly and with friendliness when raised with Y.H.A.
- All windows within a flat should be examined when a new tenant "begins tenancy". [Note: our Association does already undertake such an examination \(documentation recorded for record purposes\).](#)
- One window difficult to close. Will you need access to flats in order to replace windows or can this be done from outside? [Note: answered within meetings \(access to flats required\).](#)
- Cleaning of windows not easy; only swinging inwards approximately 66% and leaving the bottom panes to be cleaned by stretching-out or leaning-out to clean. New frames should be weatherproof to a high standard; withstanding wind & rain from the south/west; also withstanding sun-rays.
- Windows are difficult to open and the mechanism is complicated. In reality I prefer wooden frames but I can see the difficulties with them (maintenance regime related).
- The kitchen window has to be either left open or closed all the time as I find it impossible to open or close . At the moment the window is open permanently but I am considering calling in the joiner to close the kitchen window as the weather has turned cold. I am unable to open the living room or bedroom windows fully to clean them. I find the current windows very difficult to open or close. It would be appreciated if the replacement windows were easier to open and close but retained all the safety and security features of existing windows.
- Living-room window does not open properly. When trying to open it at the top to allow fresh-air in it feels like it's not catching properly and about to come down on me; stopping midway between opening out at the top and opening completely. When I moved into my flat in May 2018 the contractor came out and dealt with the problem but it did not last long.
- Difficulties with closing the window.
- Difficulties with opening windows fully (inward); always a concern in case of a fire!!! Preferably replacement works should be completed before winter 2020. [Note: programme discussed within meetings; aiming to have works completed by the end of May 2019.](#)
- The bedroom window seems heavy and sometimes slips, allowing window to partially open (not good during a winters night).
- Side-catch/operating mechanism too close to wall. UPVC easy to keep clean and brighter
- UPVC is easy to keep clean and being coloured white (internal) would be a lot brighter than brown which is dowdy; too dark.
- Sometimes opening/closing windows problematic; a bit stiff.

Trust that this information is of assistance.

Regards,

Kenny