
Wiltshire College Trowbridge Campus

Façade Overclad and Window Replacement

For Wiltshire College and University Centre

Supporting Document for Planning Application

Introduction

The Wiltshire College and University Centre would like to upgrade the buildings on their Trowbridge Campus. The proposal is to sustainably upgrade the external fabric of the existing buildings using 30-year tried, tested and proven products to meet today's performance standards of ventilation, thermal insulation and weather tightness. This will transform and modernise both the external appearance of the buildings and the internal living space, increasing user comfort with modern, clean, highly insulated, easily operable windows. The new façade will be placed over the existing repaired facade (overclad) and will serve to protect and arrest deterioration of the existing facade such that the



Existing West Elevation - Main Entrance, Ashton and Broughton Buildings

refurbished building will look and perform as a new building, lasting for generations to come. This method ensures minimal need for periodic maintenance and considerably reduces the heating energy costs and CO2 emissions, all with minimal disruption to normal use of the building and at a fraction of the economic or environmental cost of building a replacement.

Existing Building

The Trowbridge Campus of Wiltshire College and University Centre comprises multiple specialised buildings housing a range of creative and vocational courses. Opened in September 1959, the purpose built campus consolidated the college from sites scattered around town into one main hub.

Trowbridge is one of four main campuses of Wiltshire College and University Centre, along with Chippenham, Lackham and Salisbury, and this proposal will further wider campus unification. The campus has undergone significant modernisation and expansion to provide bespoke, industry standard facilities and the proposed upgrade will help the buildings look and perform modern too.

The buildings to be upgraded include the central hub of the campus which is also home to Tech Trowbridge, the multi-purpose digital suite, Aspire Hair and Beauty salon and the White Horse restaurant which are student run and open to the public. Other buildings to be upgraded are home to art, design and media studios, IT suites, modern healthcare training wards and the Arc Theatre.



Existing East Elevation - Broughton, Edington & Kennet Buildings

The facades of Ashton and Broughton buildings are predominantly brick with concrete framework areas containing rows of windows and concrete panels with small aggregate finish. Edington is entirely brick with recessed areas to the ground and first floor. The Kennet building has a cream corrugated metal facade between brick columns, green metal roof trims and rainwater pipes and blue columns.

Intended Solution

The extent of the proposed cladding works are to the Ashton, Broughton, Edington, and Arc Theatre buildings with the Kennet building and existing main entrance to be over sprayed. The Site Plan drawing 1029-BPA-ED-ZZ-DG-AR-0001 shows the extent of the scope.

The proposed overcladding will allow a complete new skin to be placed onto the building, whilst the original fabric remains intact and watertight. Once the new façade is complete the internals will be lined through, and the old windows removed internally.

The proposal is to replace the windows with timber composite windows in the same locations as the existing windows and to cover the concrete panels / brickwork sections with mineral wool insulation and aluminium PPC panels.

Design Statement

The Wiltshire College and University Centre has four main objectives from carrying out the overclad and window replacement:

- improving insulation to reduce running costs and carbon footprint
- designing out ongoing fabric repairs
- maximising value for capital expenditure
- improving appearance of the building

The chosen system is a rainscreen cladding which will allow the original fabric to remain intact and protected below the new cladding. The solid aluminium rainscreen cladding with mineral wool insulation and cavity barriers and integral high performance composite windows is a proven high quality material. The design of this system controls the rainwater run-off minimising pattern staining on the face of the building.

We have chosen a fresh colour palette to modernise the buildings' facades and bring them up to date with the internal spaces and with Wiltshire College and University Centres' other campuses. The main cladding panels are white but we have added blue and green accent window surrounds and fins to give it more texture and to tie in with the college logo. The proposed design of the cladding is similar to the design of the recently re-clad Salisbury college which uses the same colour palette. This is to give cohesiveness across the whole college estate, and we believe the proposals will additionally benefit the wider neighbourhood by uplifting the first impressions of a tired estate.

Whilst the proposed design takes reference from the original building, the intention of the cladding and window replacement project is to make the building look and perform like a new one at a fraction of the cost of rebuilding. The upgrade will help Wiltshire College and University Centre meet their objectives of making energy-efficient upgrades to the buildings and providing a flexible future-proofed spaces across all campuses.

The cladding proposed consists of a pressure equalised, back ventilated, aluminium cassette rainscreen system in 3mm solid aluminium fitted onto sheeting rails bracketed off the existing concrete structure. An air gap over Rockwool insulation applied directly to the existing external fabric provides the ventilation to control potential condensation. The new stainless steel brackets allow tolerance to enable the sheeting rails to be truly line and level independent of any miss-alignments in

the existing concrete. The existing exterior also provides reliable surfaces for attachment of the EPDM membranes to provide the necessary air and water seals. New high-performance composite windows are fitted into pods supported on sheeting rails forming part of the cladding. The cladding system consists of completely non-combustible elements and incorporates vertical fire breaks at 20m intervals and at each compartment wall, and horizontal fire breaks every floor level. Because the ventilation is lateral from the joints between the sheeting rails and the cassette panels, the fire breaks can be full fill fire rated Rockwool and do not rely on intumescent coatings to close open ones. The system will require to have been fire tested and met the performance criteria set in Annex A of BR 135:2013.

Colours

The chosen colour palette shown in the submitted CGI & proposed elevations:

1. Main Cladding Panels and Window Surrounds – RAL 9010 White
2. Windows - RAL 7016 Anthracite Grey
3. Feature windows surrounds and fins - RAL 5007 Brilliant Blue, RAL 5024 Pastel Blue & RAL 6027 Light Green
4. Overspraying to Main Entrance - RAL 5007 & RAL 6027
5. Overspraying to Kennet metal cladding - RAL 9010
6. Overspraying to existing green Kennet roof trims and rainwater pipes - RAL 6027
7. Overspraying to existing blue Kennet columns - RAL 5024
8. Overspraying to existing blue Kennet doors - RAL 7016 to match windows



Proposed CGI - Main Entrance, Ashton and Broughton Buildings

Trees

No trees included in the local Tree Preservation Order are within the contractors' operational area for this project and none should be affected by the works, however, the Employers' Requirements will include reference to the Contractors' need to ensure their protection.

Sustainability Statement

The insulation and rainscreen cladding of this building combined with the new high-performance windows has many significant environmental benefits:

- The increased thermal efficiency reduces energy consumption, carbon emissions and energy costs
- The new cladding protects and internalises the existing external fabric protecting it from the weather, preventing further deterioration and reducing maintenance to the level of a new building
- The internalised fabric adds to the building's thermal mass to even out temperature fluctuations - this contributes to both maintaining heat in winter and cooling in summer
- It effectively 'recycles' the whole building not just some materials from it
- It saves the energy, disruption and environmental impact of demolition and material disposal
- It extends the useful life of the building – providing a better return on the embedded energy required to build it in the first place
- Existing metal windows and glass are removed and recycled

Access Statement

There are no proposed alterations to any entrance doors or access points. The existing fire escape doors will be maintained at the same width as currently.

Parking Provision Details

There are no proposed alterations to the existing parking and any temporary restrictions will be kept to a minimum.

Conclusion

The buildings to be overclad are nearly 70 years old and performance of their external envelope needs to be upgraded to meet current standards. This will save energy, reduce carbon footprint and eliminate expensive maintenance to the level of a new building. It will also significantly improve comfort levels for its occupants.

The cladding and window replacement design respects and seeks to maintain essential elements of the original design. The overcladding is intended to improve the building's image using sustainable materials with a long-life expectancy. Energy savings will produce a payback which will eventually

exceed the project cost and then continue well beyond that point.

The construction proposed has a proven track record of successfully completed projects spanning over 30 years with every completed project still performing and meeting today's enhanced standards. It uses non-combustible fully 2022 compliant materials, incorporates fire breaks and has been fully fire tested in accordance with BR 135:2013.

The chosen rainscreen cladding system is the best option for protecting the existing building, stopping further deterioration, and improving the building's appearance.

The client team have carefully taken reference of available systems in the marketplace and long-term performance of same, carefully scrutinised the warranties that are provided by the various consultants, and carefully reviewed the manner in which the product is procured and contracted so as to ensure single point responsibility is achieved with clear recourse. Removing risk and ambiguity from the delivery process to ensure the standards are met and investment made in the refurbishment have the maximum certainty of a positive outcome and best value.



Proposed CGI - East Elevation - Broughton, Edington & Kennet Buildings