

## Facelift for Old College



### **Background**

The Estates Department recently completed an extensive ten month long conservation project to restore Old College's exterior walls.

Built in 1827, the A listed building is one of Edinburgh's best known landmarks and home to both the University of Edinburgh's Law School and the Playfair Library. It is considered by Historic Environment Scotland (HES) to be one of the most impressive and significant academic buildings in Scotland.

A survey carried out in 2015 highlighted the need to repair and restore the building's east façade as areas of the stonework had over time deteriorated. With the support of HES, Estates carried out research into different restoration processes to find a solution that wouldn't damage the aged stone.

### **The Project**

The University's Estates Department worked with Conservation architects from Consarc Conservation and historic stone restoration contractors, Ashwood Scotland to deliver the project.

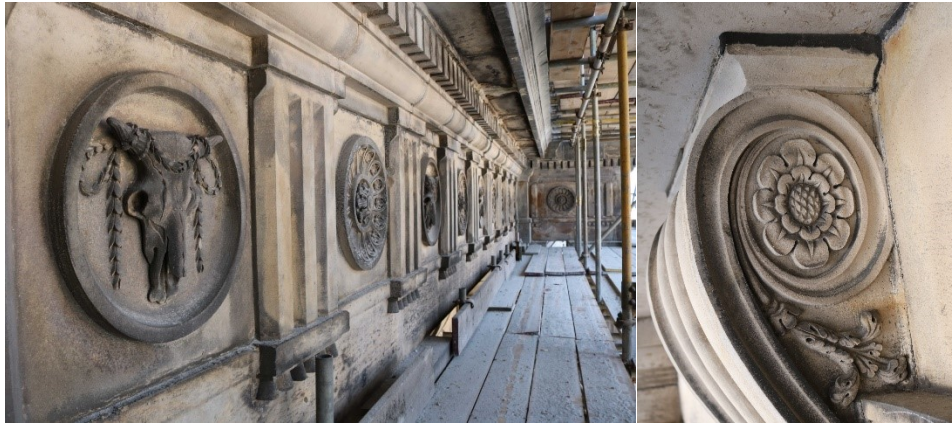
### **Stone Repair**

Old College is built from Craigleith Sandstone, a local Carboniferous sandstone of exceptional quality and resistance to weathering.

The six monolithic Roman Doric columns that form the entrance portico on South Bridge are cut from single blocks of stone, and are each reported to weigh nine tonnes. They are the largest single pieces of sandstone ever cut from Craigleith Quarry and were transported from

the quarry on the north west of the City Centre, by carts drawn by 16 horses in the early 19<sup>th</sup> century when Old College was built.

A wide range of finishing and tooling techniques were used to give the building's façade variety and vitality, including moulded and carved cornices, string courses, window surrounds and panels. However much of this detail became lost beneath thick layers of grime, pollutant crusts and biological growth that built up over the years.



Ashwood's team of stonemasons' sourced Hazeldean sandstone from the Hutton Quarry in Northumberland as it is a similar match to the original Craigleith stone. Approximately 20.3 tonnes of sandstone has been used in the conservation work to Old College's façade.

One of the challenges that modern day stonemasons are faced with is finding blocks of stone that are large enough to replace the columns, lintels, large pediments and cornices which were all part of the original construction of neo classical buildings. Anything over half a metre in height is very hard to find as all the larger stones have already been removed from the quarries.

Luckily the stone repair work to Old College did not require such large blocks of sandstone and the stonemasons have been able to replace the damaged stone with similar sized pieces.



The team has replaced half a dozen full height pediment indents together with some of the buildings original window sills. These needed to be replaced as they had become badly cracked and were peeling off in layers. Stone is composed of layers and if it becomes damaged due to weathering it will start to crack and peel, this process is known as delaminating. Replacement window sills weighing 217 kilos were cut off site before being installed. It took several men to lift each replacement sill into position.



Part of the work carried out by the stonemasons has included repairing holes in the stone work caused by the previous erection of scaffolding to the building's façade. Hundreds of these holes have been repaired by inserting stone plugs to repair the holes drilled into the walls.

Ashwood used an Apollo fixing with a six millimetre self-tapping screw screwed into the joints between the stones blocks that the walls are constructed from, to avoid the need to drill holes into the stone to fix the scaffolding to.

### **Stone Cleaning**

Before the repair work began the stone was gently 'cleaned.' Research into the different processes for stone cleaning was carried out with the support of HES and the Doff steam cleaning system was chosen and approved by City of Edinburgh Council. It consists of a low pressure, high temperature steam cleaning process that removes the 'build up' of biological soiling and pollutants without affecting the surface patina of the stone.

Water is fed into a hot-box where it is subjected to temperatures as high as 150°C. The resultant heated water, or vapour, is then filtered through a heat resistant hose to the nozzle at a rate of between 3 to 10 litres per minute.

Once cleaned, the surface dries within minutes to prevent any long-term damage as a result of trapped moisture. This super-heated water system has been used to clean Westminster Abbey, Oxford University, and the Tower of London and is particularly effective in removing biological matter and general dirt and grime without causing harm or shock to the substrate of the stone.

For the really dirty, blackened areas a Joss Torc cleaning system was used. This uses a very fine abrasive sand, similar in texture to the iron oxide sand used for finger printing. This is delivered via a low pressure jet to gently clean the stone and can be targeted at selected areas.

The dirt and grime that has built up over the years has been removed to reveal the neo classical details and carvings on the walls of Old College and above the building's impressive arched entrance.

Conservation Architect, Dawson Stelfox from Consarc Design explains the challenges faced by the project: "Cleaning of historic stone buildings is potentially controversial and fraught with difficulties. The 'patina' or authentic ageing of a building is quite often a key part of its character and great damage can be done by over-zealous cleaning. On the other hand, a build-up of dirt and biological growth can hold moisture and accelerate decay and dirty buildings tend to get further neglected leading to their long term decline. Achieving the fine balance between gentle, conservation based, cleaning and over restoration is difficult, but well worth the effort of finding.

“Every building and location is different so there is no substitute for site trials in unobtrusive areas and in the case of Old College discreet tests were done on the West College Street side and the results used to apply for and achieve Listed Building consent with the approval of HES. The systems used are highly controllable to allow surface dirt and growth to be gently removed without damaging the underlying stone, retaining the fine grain of tooling marks and the weathering of the age and revealing once more the detail and craftsmanship.”



### **Conclusion**

The renovation work carried out at Old College has been transformational. Over the years the heavy build-up of thick layers of grime, pollutants and biological growth had affected the stone surfaces, obscuring the wide range of finishing and tooling details that were used on the original stonework. Through our work to clean and restore these original details we have breathed new life into the building's façade and given it back its vitality and uniqueness to reaffirm its position as the centrepiece of the University.



*Lewis Docker, Apprentice stone mason shaping a stone edging before it is fitted into place.*