Excursion 1 Building stones of Glasgow

Key details

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Themes	Building stones and facing stones, and their sources.
Features	Various sandstones, granites, marbles, gneiss, oolitic and fossiliferous limestones, breccias, travertine etc.
Maps	Plans of central Glasgow available from Tourist Information Office, St Vincent Place (and see (Figure 1.1)).
Distance and Time	About 1200 m or 0.75 miles: allow two hours at least.
Access	City Chambers provides free guided tours at 10.30 am and 2.30 pm on Monday, Wednesday and Friday.

In the city of Glasgow it is possible to see a great variety of rocks used in many different ways. A walk through the centre can provide an introductory course in the identification of rocks–sedimentary, igneous and metamorphic–in hand specimen. Many of the facing stones have been imported from overseas and are beautifully polished to show their constituent minerals. This is a suitable winter excursion when the weather does not allow trips further afield. This account describes a 'starter' route with a range of typical examples. Numerous other walks can then be added and explored (Lawson 1981).

Start at the southern exit of Buchanan Street Underground station [NS 59063 65493] (Figure 1.1). The old station was excavated in sandstone, with plaster and paint applied directly to the sandstone walls, and immediately to the north there was an extensive area of sandstone quarries which supplied much of the stone for building the older (pre-1835) parts of Glasgow (Lawson 1984). There is now no surface evidence of these quarries.

On the west side of Buchanan Street at the corner of Nelson Mandela Place is the former Royal Scottish Academy of Music & Drama (1908–9), whose red sandstone comes from the New Red Sandstone (Permian) of Locharbriggs in Dumfriesshire. It is a fairly even-grained sandstone with cross bedding on such a large scale that some blocks show parallel bedding. On either side of the main entrance, blocks can be seen which have been cut with 'mirror image' bedding. Some blocks show good cross bedding (up-side-down!): the intricate carving of the sandstone is impressive. Red sandstones like this were commonly used in Glasgow from the late 19th century onwards.

In the middle of Nelson Mandela Place the Tron Church (1807) is built of a contrasting cream sandstone of Carboniferous age. Numerous fine bedding planes are picked out with brown organic matter. The partings, up to a few centimetres thick, often show cross sections of ripple marks. This sandstone is very typical of the local sandstone and may even have come from the quarries farther up the road. The facade is of smooth ashlar, the rear and sides of tooled blocks. On the next corner is the Stock Exchange building (1875) built of a cream-coloured Carboniferous freestone, i.e. a sandstone without obvious bedding planes and which can therefore be cut evenly in all directions. It was quarried at Overwood in Lanarkshire. Thus, in three adjacent buildings, the three main types of sandstones used in the building of Glasgow can be studied. In other buildings throughout the city the same three types, from various quarries can be seen over and over again, sometimes alone, sometimes mixed. Although other materials, including brick, may have been used in the internal construction all these buildings appear outwardly as sandstone buildings.

On the opposite (east) side of the street, at the corner with West George Street, there is a modern building showing a completely different use of stone. The Clydesdale Bank is a concrete frame structure clad with thin slabs of granite used both for protection and decoration. The surface may be highly polished or be flame finished to a rough texture. The granite is coarse grained and largely made up of red feldspar and grey quartz with smaller amounts of biotite and hornblende. The texture can be well seen on the polished panels. This granite came from Sierra Chico in Argentina. Continuing along West George Street, the next building, Dale House, also uses a South American 'granite', one of the creamy-brown rocks which have become popular as facing stones in recent years. Although referred to in the trade as a

granite, one of its most obvious features is conspicuous banding with large crystals of cream-coloured feldspars. This is a metamorphic rock, a gneiss, and not an igneous granite, although the minerals are similar. It comes from the Campo Grande region of Brazil. The upper storeys and columns near the entrance of the building are clad with a cream sandstone from Stainton in the north of England. Other rock types can be seen in the entrance, including cream limestone (Serpeggiante 'marble') on the floor, and a dark brown travertine on the walls, both rocks from Italy.

On the north side of this part of West George Street, the Connell building (nos 34–38), shows a typical combination of stone used in many of the older city centre buildings. The lower storeys, pillars, steps and balustrades have the flesh coloured Peterhead granite with its pink feldspars, clear quartz and dark mica. Xenoliths are common and may be quite large. The upper storeys are of the red Locharbriggs sandstone which has here been carved with fine detail into ships, locomotives and other engineering sculptures.

Moving eastwards into George Square note the browny pink Tranos granite from Finland at the Standard Chartered Bank on your left. George Square was largely rebuilt during the 19th century and there are many of the solid Victorian buildings for which Glasgow is so famous. These mainly have cream sandstone exteriors with some granite at lower levels. The City Chambers on the east side is clad with Dunmore and Polmaise Sandstone from the Carboniferous of Stirlingshire. It has pink Correnie granite from Aberdeenshire at ground level. The richly decorated interior is well worth a visit (free guided tours at 10.30 am and 2.30 pm on Monday, Wednesday and Friday). On the west side, the Merchants' House and the Bank of Scotland, also of Dunmore Sandstone, are quite typical. Stone from Stirlingshire was commonly used in the centre of Glasgow and was normally transported by rail. Generally it is a good quality stone which weathers well. Such stone may be used as ashlar with a rusticated or vermiculated finish. In the Head Post Office on the south side of the Square it was combined with stone from Giffnock (to the south of Glasgow) and from Hermand (near Linlithgow). On the north side of the square is a new office block clad in the rather yellowy green sandstone from Springwell in Co. Durham. Also on the north side is Queen Street Station which was built on the site of some of the old quarries. When the bulk of the good sandstone had been removed, the quarries provided convenient excavations for the railway companies which were seeking space for their new termini. In the centre of the square are various statues. Sir Walter Scott stands on a tall column of honey coloured sandstone from Eastwood quarry near Giffnock while most of the smaller statues and the war memorial are on plinths of granite, largely from Scotland, although that below James Watt in the SW corner, with its large white feldspar phenocrysts may be from Cornwall. Greggs Bakery on the south side is clad at ground level with green slate, a metamorphosed volcanic ash of Ordovician age, from Cumbria.

From the SW corner of George Square walk into St Vincent Place, a short street with a great variety of stone. On the north side are, in turn, the Dunmore Sandstone of the Bank of Scotland, the white tiles and green serpentinous marble pillars at nos 12–16 and red sandstone from Mauchline (in Ayrshire) at no. 24. This last is the former Citizen newspaper office whose name can still be seen carved in the sandstone at first floor level. The Clydesdale Bank at the corner has a balustrade of an unpolished granite whose very large pink feldspar phenocrysts make it easily recognizable as Shap granite from Cumbria. On the south side of St Vincent Place, near George Square, are several older (early 19th century) buildings of local ripple-marked sandstone. The office block at nos 19–29, is of Carboniferous Blackpasture Sandstone from Northumberland. The Tourist Office (at nos 31–39) is housed in another sandstone block: the pillars at the entrance are of a dark fine grained granite with small white feldspar phenocrysts, which may be the 'blue' Cairngall granite from Aberdeenshire: the balustrades are of the more typical Peterhead type.

Continue west along St Vincent Street to the junction with West Nile Street. On the SW corner Mappin and Webb has a facing of pink limestone which is full of fossils. There are algal structures, corals, gastropods and bivalves all veined with dark pink stylolites.Stylolites are irregular zig zag boundaries often developed in limestones which form by solution and re-deposition of the calcium carbonate at pressure points. They may cut across the fossils. This is probably Estoril 'marble' of Cretaceous age from Portugal. The banks at the NW and SE corners have grey granite near ground level and cream sandstone above, a very common combination. The canopy at the NE corner is of the coarse-grained feldspar rich rock from Norway called larvikite. Here it is the dark 'emerald' variety; there is also a pale blue variety which is often used.

Further along the street contrasts can again be seen. No. 86 to no. 90 is a white, or off-white building of limestone, unusual in Glasgow. This is Portland limestone from Dorset which is well known in the south of England, e.g. in London,

but was not often used in Scotland. It is of upper Jurassic age, is often oolitic and commonly contains fossils. When clean it is startlingly white but often becomes stained black. Next to it is more larvikite and a green brecciated serpentinous marble.

Continue on to the next block beyond Hope Street where, on the north side, are buildings of the red Locharbriggs sandstone and beyond is the Scottish Amicable Assurance Company Office (no. 150). This is clad with the dark Bleubraun granite from Sweden. The blocks show a distinct banding when viewed from a distance. The interior, in marked contrast with the sombre exterior, is finished in highly polished cream Botticino 'Marble'. This handsome rock shows a splendid development of stylolites. Originally all Botticino marble came from near Brescia, but now similar limestones are also quarried in Sicily and sold under the same name. There are sometimes small exhibitions open to the public, in the foyer.

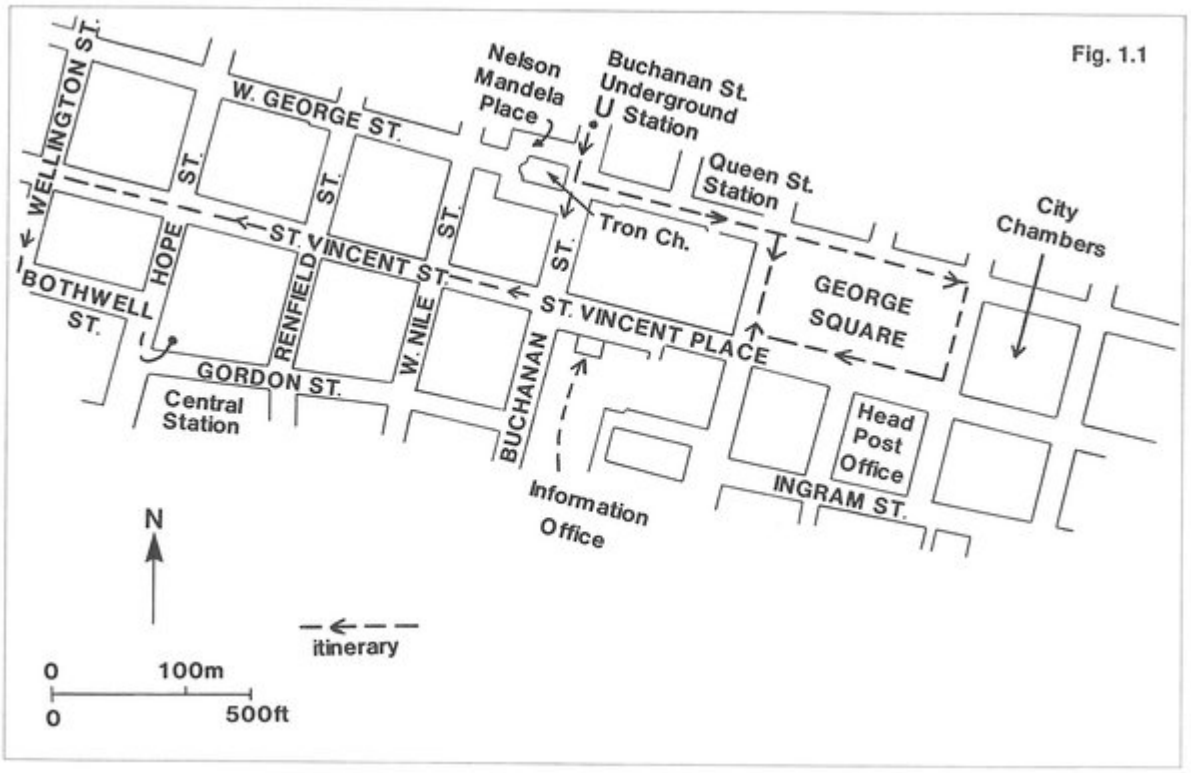
A detour can be made here by turning north up Wellington Street past a sunken garden of cream travertine, to Ashley House at the corner with West George Street. This has columns faced with another version of Portland stone which comes from beds above the more commonly used Portland Whitbed; this is the highly fossiliferous Portland Roach. The shells have often been dissolved away leaving a rock full of cavities. There are many moulds of highly turreted gastropods e.g. *Aptyxiella* and bivalves like *Laeoitrigonia*. Beneath the windows is the more typical Whitbed limestone. Retrace your steps down Wellington Street. On the SE corner of St Vincent Street (no. 145) is a 'traditional' red sandstone/red granite building where the sandstone shows good large scale cross bedding. Walk down Wellington Street noting the various uses of sandstone and limestone and then turn left (east) along Bothwell Street. At the corner with Hope Street, Imperial Mahogany granite from Dakota, U.S.A. has been used as cladding in the Abbey National Building Society office. From here Central Station can be seen, a sandstone edifice built mainly of Giffnock Sandstone in 1884. Opposite the station, on the corner of Gordon Street the Bradford and Bingley Building Society has made impressive use of two contrasting rocks. Much of the front is the Baltic Brown granite from Finland with its characteristic 'Rapakivi texture of large round pink feldspar phenocrysts. In sharp contrast part of the front is of creamy pink limestone breccia, the fragments being of oolitic limestone. The rock is from Italy and is known as Rosaro Marble.

From here the walk can be continued in any direction. Attempt your own identifications.

References

LAWSON, J.A. 1981. Building Stones of Glasgow. Geological Society of Glasgow.

LAWSON, J.A. 1984. Sandstone Quarries in Glasgow. Proc. Geol. Soc. Glasgow.



(Figure 1.1) Sketch map of central Glasgow showing route of excursion.