

REPORT

Nottingham's Castle Rock

Castle Rock is doomed to disappear. That is of course in the geological long-term. As an upstanding block of relatively weak rock, the ravages of natural erosion will eventually see it off. In the short-term, it is still with us, though weathering and degradation of the rock faces are inevitable processes. So Nottingham Council aims to keep its iconic Rock in good shape, and a swathe of engineering works were initiated over the last winter.

In years gone by, there had been a philosophy that a good covering of soil and vegetation on the Rock was generally beneficial, with the leaf cover shedding the rain and a root mat holding it all together. This also appealed to the bio-conservationists who liked greenery, and to the City Treasurer who could cut down on the cost of clearance work. But that approach was not the best. Whereas a good root mat gives stability to a soil, by offering tensile strength and also better drainage, the same roots do little but harm to rock.

Once roots are into rock fractures, they just keep on growing, forcing the blocks of intact rock apart and significantly reducing the strength and stability of the rock mass. Individual blocks are heaved off exposed faces and fall to the base, where they form a ramp of talus unless regularly cleared away. Or, ivy can do the damage and then hold the blocks unseen in its mantle until they fall off at random times. The root impact is best seen in the caves in Castle Rock. Each joint has tiny rootlets, and a few have much larger roots, hanging down. Bedding in the Rock's sandstone is hardly visible in a clean face, but almost all the rock actually has distinct bedding planes at intervals of about 10 or 20 mm, and the finest roots are surprisingly effective at working along these weaknesses. The result is bedding plane failure in the cave roof spans; some of the caves just behind the rock face on Castle Road have this on a massive scale. And what is visible in the caves is also happening unseen on almost all the Rock's faces.

So the current stabilisation works started with a major clearance of the vegetation. Some of the larger trees have been taken down because their roots were

reaching far into the rock; shrubs that had established in open joints and fissures are being removed; and the great screens of hanging ivy have been cut away. At the foot of the Rock at the corner into Peveril Drive, the holly trees have been removed as their roots were breaking down the roof of the nearby Water Cave. Two large trees on the Castle Boulevard lawns have also been removed, but a single tall ash tree has been retained at the wish of the planners because it is a native species, though it now looks rather out of place. A side effect of all this has been a huge improvement in the appearance of Castle Rock. Especially round its southern end, west of Brewhouse Yard, it is once again a bold geological feature, instead of just another blob of urban greenery. The Nottingham Castle Sandstone has regained its type locality back from the holly and the ivy.

A cover of soil and low plants is kept on the upper slopes that lie back at lower angles, and one of the main challenges for the contractors has been to manage and control this boundary between soil cover and bare rock along the crests of the main faces. Once cleared of vegetation, the works follow on with repairs to the rock. Judicious concreting and reinforced plastic coating is under way where needed, notably sealing the main fissures where roots deep inside cannot be removed but must be prevented from re-growth. Rock repairs are almost invisible where loose sand is rubbed by hand over the cement or plastic before it has gone hard, to create a good "sandstone" surface. A careful search reveals where this has been done, but most casual observers just do not see most of this critical repair work. This will include repairs within the caves, including the Western Passages which it is hoped can soon be re-opened to extend the tours through Mortimer's Hole, creating the loop tour that was so popular some years ago.

The follow-up work on the Rock is going to centre on trimming back the ever-creeping vegetation. This will be done, by rope-access workers swinging across the rock faces, perhaps once every two or three years, in what should be a declining task once the vegetation is more continuously under control. Then Castle Rock should survive a little longer as the Nottingham landmark that we all know.

Tony Waltham



The newly cleaned south end of Castle Rock, as seen from Castle Boulevard.