



# Rock Around the University (RAU) - transplanted rock exposures for outdoor geological skills training on campus

Gordon Curry, Tim Dempster, & Cristina Persano, School of Geographical and Earth Sciences, University of Glasgow, Glasgow, Scotland, UK [Gordon.Curry@Glasgow.ac.uk](mailto:Gordon.Curry@Glasgow.ac.uk)



The University of Glasgow is built on a hill, is surrounded by parks, and there are many open spaces between the large number of university buildings in the surrounding area – ideal terrain for geological fieldwork (and training in the application of structure contours).



RAU exposure close to the main University building.

## Benefits

Being located on the campus means that there are no travel or accommodation expenses for students, few timetabling issues, and few general logistical complications and natural complexities than in remote fieldwork locations. In addition, students benefit from receiving 'instant' on-site feedback from staff on the challenges, problems and pedagogic issues that they encounter.

RAU allows us to introduce rigorous field-based teaching at an early stage in geoscience courses and to stimulate and encourage reflective learning. Students locate, analyse and synthesise information in the field to provide effective solutions to problems and use RAU as a self-directed learning experience where they build confidence while working independently in a familiar environment. Hence the students reinforce their field skills before experiencing independent work in remote areas. In effect RAU uses the campus as a sustainable geoscience teaching resource, which has all the advantages of a real fieldwork experience with minimal logistical complications and costs for students.

Students are much better prepared for their first major residential fieldwork having completed the RAU programme, and are much more confident in their field skills. RAU has allowed us to address more effectively the disconnect between laboratory and fieldwork skills, and remote fieldwork classes are now more focussed on the application, rather than the development, of field skills. RAU has also had the effect of enhancing the awareness of geoscience among the entire University community, due to the presence of students carrying out fieldwork on campus. Indeed the core message that the entire campus can be used as an educational resource has proved infectious and has been adopted by other subjects.

The blocks require virtually no maintenance, and the resource could readily be updated or extended by adding additional exposures or repositioning and re-orientating existing blocks.

RAU has allowed us to address more effectively the disconnect between laboratory and fieldwork skills, and as result remote fieldwork classes are now more focussed on the application, rather than the development, of field skills.

## Rationale

RAU mimics a real-life fieldwork experience, but on-campus rather than at remote locations. Although applicable to all stages of the geoscience curriculum, RAU has been particularly useful in developing and reinforcing fundamental field skills in early year students, prior to their first residential field class away from the University. Many timetabled sessions which were previously held in indoor laboratories, are now entirely or partially conducted in much more realistic outdoor settings, which has proved to be extremely effective and popular among both students and staff.



Outdoor teaching laboratory on measuring the plunge and trend of minor folds in metamorphic rocks

## Use of Rock around the University

RAU allows progressive, reflective, and effective on-campus outdoor training of a wide-range of geological field skills and concepts, including: geological mapping; the use of structure contours to predict geological boundaries in terrains lacking abundant exposures; calculating the thicknesses of stratigraphic units; construction of cross-sections; notebook entries (the description, analysis and measurements of rock features and structures); and, the interpretation and reconstruction of 3D structure and geological history. Students visit the RAU exposures both during timetabled supervised 'lab' sessions and in their own time, providing an authentic fieldwork experience in a controlled location where key geological skills can be developed at the optimal rate for individual students.



A RAU basalt exposure beside a path on campus



RAU Schist (with minor folds) and limestone exposures installed beside a lane on the University campus.

## Background

Rock Around the University (RAU) is a teaching resource constructed in 2012 which is composed of 16 large (~2.5m) blocks of "local" Scottish rock which have been transplanted and orientated into carefully planned locations and elevations between the buildings of the University of Glasgow to look like natural exposures. The primary purpose of RAU is to enhance the learning experience of undergraduate geoscience students.



Garden landscaping installed after the blocks were placed has been built around the RAU exposure, which improves accessibility.

## Assessments

A wide range of assessments options were included in the original design of RAU, and have been successfully utilised over the last eight years with classes of over 100 students. The assessments can be used with large classes as there are a variety of internal checks on a student's attainment of intending learning outcomes (for example the relations between dip measurements, stratigraphic thickness estimates, the spacing of structure contours, and the inferred positions of geological boundaries).



RAU exposure, in several pieces, beside a new building which was built after RAU was installed.



An enclosure added around a RAU exposure during recent garden landscaping – the gravel prevents overgrowth by vegetation and improves accessibility.

## Construction and Design

The project was funded by a grant from the Learning and Teaching Development Fund of the University of Glasgow, and involved co-operation both with the Estates and Management Service in the University of Glasgow, and with suppliers of blocks of rock from local quarries. The key to the success of the project was extensive initial planning.

The blocks chosen were deliberately not museum specimens but were selected to ensure that they presented a realistic fieldwork challenge.



One of the RAU exposures in a flowerbed beside a University building.

## Accessibility

RAU exposures are all situated close to level, paved pedestrian pathways, and all are in readily accessible locations.

## More information

Rock around the University is also used in recruitment and outreach, and is open to schools, amateur geoscientists, and anyone interested in Earth history.

Printed leaflets are available describing Rock Around the University, and more information is available at <https://www.gla.ac.uk/schools/ges/community/rockaround/>.



Photography not allowed