

by B. J. Cooper¹, B.R. Marker², D. Pereira³ and B. Schouenborg⁴

Establishment of the “Heritage Stone Task Group” (HSTG)

1. Barbara Hardy Institute, School of Natural & Built Environments, University of South Australia, Mawson Lakes SA 5095 Australia.

E-mail: barry.cooper@unisa.edu.au

2. 40 Kingsdown Avenue, London W13 9PT, United Kingdom. *E-mail: brian@amarker.freeserve.co.uk*

3. Faculty of Sciences, University of Salamanca, Plaza de la Merced s/n, 37008 Salamanca, Spain. *E-mail: mdp@usal.es*

4. Swedish National Testing & Research Institute, Brinellgatan 4, Box 857 SE-501 15 Borås Sweden, *E-mail: bjorn.schouenborg@cbi.se*

Introduction

During the 34th International Geological Congress, held in Brisbane, Australia in August 2012, the Heritage Stone Task Group (HSTG) was formally established within IUGS with links to Commission C-10 Building Stones and Ornamental Rocks, International Association of Engineering Geology and the Environment (IAEG C-10).

HSTG had its origins at the 33rd International Geological Congress in Oslo, Norway where it was accepted as a project by IAEG C-10. Subsequently a paper was published in *Episodes* (Cooper, 2010). This report led to its acceptance as an IUGS Task Group in 2011. HSTG Terms of Reference were approved at the IUGS Executive Committee Meeting in San Sebastian, Spain in February 2012. In Brisbane, an inaugural HSTG business meeting was held and a Managing Board was approved for the period 2012–2016.

Members of the inaugural HSTG Board of Management are as follows:

President (*ex officio* Chair IAEG C-10): Dr Björn Schouenborg (Sweden)

Secretary General: Dr Barry J. Cooper (Australia)

Vice President Southern Europe: Prof. Dolores Pereira (Spain)

Vice President Central Europe: Dr Sabina Kramar (Slovenia)

Vice President Western Europe: Prof. dr. Jan Elsen (Belgium)

Vice President North America: Dr Joseph T. Hannibal (USA)

Vice President North America: Prof. Brian R. Pratt (Canada)

Vice President North America: Dr Nelson R. Shaffer (USA)

Vice President South America: Prof Fabiano Cabañas Navarro (Brazil)

Vice President East Asia: Dr Hirokazu Kato (Japan)

Vice President South Asia: Dr. Harel Thomas (India)

Vice President Africa: Dr Phil Paige-Greene (South Africa)

Member: Dr Brian R. Marker (UK)

As of 1 December 2012, HSTG has 161 correspondents from 40 countries. Geoscientists wishing to affiliate with the Task Group should register with the Secretary General.

Aims and Vision

The specific goal of HSTG is to facilitate formal designation of those natural stone types that have achieved widespread recognition in human culture and to create the “Global Heritage Stone Resource”

(GHSR) as a term for this designation. Stones that have been used in heritage construction, sculptural masterpieces, as well as in utilitarian (yet culturally important) applications are obvious candidates. In association with this aim there is a need to promote the adoption and use of the GHSR designation by international and national authorities. HSTG will also maintain a register of GHSR approved stones.

HSTG is the first IUGS involvement in the realm of dimension stone (= hard rock used for building, decorative, ornamental or other similar purposes). Its primary aim will create the first ever international geological (as opposed to technical/mechanical) standard associated with dimension stone.

As a consequence of HSTG formation, the largest known international grouping of dimension stone geologists has already been established as “Corresponding Members”. This network has significant potential for further expansion.

HSTG work will initially centre on soliciting and approving citations for GHSR status. As a first step an interim or standing list of potential GHSRs is being established. Citations will then need to be developed together with an essential research paper that advocates GHSR recognition in each case. Following this report a GHSR nomination and research paper for “Portland Stone” from the United Kingdom is published as a model citation for future reference and consideration for possible adoption (Hughes *et al.* in press 2013).

Following satisfactory documentation, HSTG Terms of Reference advise that recognition of GHSR status will be formally approved by the HSTG Board of Management. The Board is encouraged to consult national or regional authorities and Corresponding Members with respect to draft citations and to revise draft citations as appropriate if deemed necessary.

As an alternative to GHSR approval the HSTG Board may also designate a heritage stone as having national or, perhaps, regional significance. Even newly available dimension stone resources may be considered a prospective heritage stone if they meet the necessary criteria in the future. By this method many types of dimension stone might eventually be categorised as a type of heritage stone. A long term HSTG vision may be the preparation of an “International Guide to Heritage Stone Designation”.

In general and unlike any other geological standard, the GHSR proposal uniquely addresses the crossover domain between the geological sciences and human culture, given that it will focus both on the place of natural stone extraction as well as on the end utilisation of the extracted resource. It is envisaged that GHSR designation will



HSTG inaugural business meeting in Brisbane, Australia, August 2012: From left - José Kullberg (Portugal), Dolores Pereira (Spain), Björn Schouenborg (Sweden), Brian Marker (UK), Barry Cooper (Australia), Phil Paige Green (South Africa), Atiye Tugrul (Turkey), Rogério Rocha (Portugal), Rolv Dahl (Norway).

complement, and enhance, existing standards and international recognition.

Pre-establishment Phase

During the period 2008-2012, four “Global Heritage Stone Circulars” were issued in May 2009, September 2010, June 2011 and March 2012 and distributed to an ever growing list of Corresponding Members. A website, www.globalheritagestone.org, accessible to the public, has also been established where copies of all Circulars remain available together with up-to-date information about the project.

Links have been established with UNESCO World Heritage, International Union for the Conservation of Nature (IUCN), International Council on Monuments and Sites (ICOMOS) and the International Centre for the Study of Restoration and Preservation of Cultural Property (ICCROM) and these organisations have been placed on distribution list for all HSTG information.

At the beginning of the heritage stone project the label “World Heritage Stone Resource” was proposed (Cooper, 2008) however this designation terminology was subsequently abandoned due to its potential confusion with UNESCO World Heritage status. The Global Heritage Stone project has also developed with assistance of regional dimension stone organisations, such as the English Stone Forum. This organisation has, as its principal objective, the encouragement of greater public interest and awareness of the stone built heritage of England and the threats it faces. It also works to encourage the use of English stone for the public benefit and to ensure the availability of the stone required for the maintenance of the built heritage and new buildings. Similarly CONSTRUROCK is working in Spain to establish extensive stone resource databases, initially including all natural stone and quarries in Spain together with new and historical stone buildings that have utilised the quarried material.

In the period 2010-2012 the heritage stone project has also been the subject of presentations (both oral and poster) at the following conferences:

- Global Stone Congress, Alicante, Spain (March 2010)
- 11th Congress of the International Association of Engineering Geology and the Environment (IAEG), Auckland, New Zealand, (September 2010)
- Global Stone Congress, Alentejo (Borba), Portugal (July 2012)
- 34th International Geological Congress, Brisbane, Australia (August 2012)
- International Congress on Science and Technology for the Conservation of Cultural Heritage, Santiago de Compostela, Spain (October 2012)

Future Meetings

In the immediate future HSTG is aiming to establish an annual technical meeting initially as sessions within existing conferences.

In 2013, HSTG is planning to meet in association with a session of European Geosciences Union (EGU) General Assembly, to be held in Vienna, Austria in April 2013. Details of the session are as follows: Natural stone research and Heritage Stone Designation EGU Conference Session ERE3.4.

The 2014 conference is envisaged as a session of the 12th IAEG conference to be held in Turin, Italy in September 2014. The same year will also bring another edition of the “Global Stone Congress”.

Depending on contributions, publication of papers will result.

Checklist for Heritage Stone designation

In order to achieve GHSR designation the HSTG Terms of Reference advise that a stone should have most of several specific characteristics. Most notable of these attributes are wide-ranging geographic application and historic use for a period of at least 50 years.

The nominated dimension stone should also have been utilised in significant public or industrial projects and there should be wide recognition of the stone for its cultural importance, potentially, for example, including association with national identity or a significant individual contribution to architecture.

It is beneficial that stone remains available in active quarrying operations whilst other potential benefits (including cultural, scientific, architectural, environmental, commercial) should be considered.

In order to nominate a GHSR, it is suggested that the following features of the stone need to be documented:

- *Formal GHSR name*
- *Stratigraphic (or geological) name*
- *Other names* (names given to different types or variants of the nominated stone)
- *Commercial designations* (additional commercial names used to market the nominated stone)

- *Area of occurrence* (geographic area where the nominated stone occurs in nature, a map is required)
- *Location of quarry or quarries* (sites of active and abandoned quarries of the stone, specific locations may be specified as a reference locality)
- *Geological age and geological setting* (details of sedimentary basin/ fold belt, tectonic domain, igneous activity etc that place the designated stone in a wider geological perspective)
- *Petrographic name* (technical name of stone as determined by geological assessment)
- *Primary colour(s) and aesthetics of stone*
- *Natural variability*
- *Composition* (distinguishing mineralogical characteristics)
- *Geotechnical properties* eg Water Absorption, Density, Porosity, Compressive Strength, Flexural Strength, Salt Crystallisation, Saturation Coefficient
- *Suitability* (assessment on utilisation, for example, cut building blocks, sculpting stone, roofing, monuments, polished decorative use, technological objects etc.)
- *Vulnerability and maintenance of supply* (availability of future supply including possibility of constraints on supply)
- *Historic use and geographic area of utilisation* (historic and geographic utilisation of the nominee especially in significant heritage or archaeological applications)
- *Heritage utilisation* (an extensive list the significant buildings, monuments, sculptures etc, including dates of construction)
- *Related heritage issues* (information on significant heritage issues that affect the nominated stone for example, alternative heritage listing of buildings or quarry areas associated with the stone, supporting museums, sculpture parks etc.)
- *Other designations (optional)* (proposal of additional designations, for example the epithet ‘Classic World granite/marble/etc’, ‘International Decorative Stone Icon’ etc)
- *Related dimension stones* (other dimension stones that are related geographically, geologically or utilised together with nominee, including those in associated Global Heritage Stone Province)
- *Principal literature related to the designated stone* (major scientific papers, books and popular literature dealing with the

nominee)

- *Images*(images, historic photos and line illustrations for publication)
- *Any other relevant items*

Benefits of Heritage Stone designation

The designation of heritage stones has numerous long term benefits. For geologists, GHSR designation facilitates formalisation of the characteristics of natural stone materials, for professional purposes and otherwise, in an internationally accepted context. Following from this a mechanism for legally defining a stone type is provided, for example in a similar manner to existing European Union legal provisions that protects food and wine varieties from specific regions.

Undoubtedly heritage stone designation will create increased awareness of natural stone amongst professional workers, not only in geology, but also in engineering, architecture and stone/ building conservation. Such awareness will extend to the general public. In addition heritage stone designation will enhance international co-operation for the research and documentation of natural stone resources.

Finally it is anticipated that heritage stone designation will encourage proper management of natural stone resources and, as part of this, future safeguarding of dimension stone resources can also be addressed.

References

- Cooper, B.J., 2008, Recognition of a “World Heritage Stone Resource”: A proposal. Abstracts 33rd International Geological Congress, Oslo, Norway, 6-14 August 2008 (compact disc reference only)
- Cooper, B.J., 2010, Toward establishing a ‘Global Heritage Stone Resource’ designation. *Episodes*, v. 33, pp. 38-41.
- Hughes, T., Lott, G.K. Poultney, M.J. & Cooper, B.J., in press 2013. Portland Stone: A nomination for “Global Heritage Stone Resource” from the United Kingdom.