



Global Heritage Stone

Circular No 7

October 2013

www.globalheritagestone.org

Information and discussion on the

'Global Heritage Stone Resource' (GHSR)

**A new international designation recognising natural stone resources
that have achieved widespread utilisation in human culture**

This project operates as the "Heritage Stone Task Group" (HSTG) of the "International Union of Geological Sciences" (IUGS) and under "Commission C-10 Building Stones and Ornamental Rocks of the International Association of Engineering Geology and the Environment" (IAEG C-10)

President: Björn Schouenborg **Email:** bjorn.schouenborg@cbi.se
Secretary General: Barry Cooper **Email:** barry.cooper@unisa.edu.au

OPENING MESSAGE

Much has happened since Circular No 6 was issued last March.

Since then HSTG has had a very successful inaugural conference in Vienna in association with the General Assembly of the European Geosciences Union (EGU) in Vienna with 31 papers and posters presented at the one day session on 12 April.

It was so successful in fact that the project was featured by the British Broadcasting Commission (BBC) which can be viewed and read at www.bbc.co.uk/news/science-environment-22097403 and www.bbc.co.uk/news/science-environment-22102933 .

All Board members attending the conference also met informally one evening and discussed future plans for the Group. In addition there was a discussion session for all conference participants at the end of oral presentations.

Most notably, the Geological Society of London (GSL) requested that HSTG submit a publication proposal based on heritage stone presentations made at the conference. This has since been done with participants being contacted and a proposal being approved for 20 papers. This publication proposal has been made possible as a consequence of a Memorandum of Understanding between IUGS and the GSL.

Details of the proposed volume and its contents are provided in a separate section below.

The European Geoscience Union has since encouraged us to have a similar session at the EGU General Assembly in 2014. This has been agreed even though our major conference will be held in Turin, Italy, 15-18 September 2014, as a session at the 12th Congress of International Association of Engineering Geology and the Environment, our sponsor.

Since our last Circular, our website www.globalheritagestone.org has also been significantly revised with our GHSR and GHSP Check Lists being provided to the general public for the first time.

An HSTG progress report has also been published in *Episodes* 36: 8-10. It provides details of our formal establishment to the wider geological profession.

In addition, a paper entitled “Portland Stone: A nomination for ‘Global Heritage Stone Resource’ from the United Kingdom” by Terry Hughes, Graham Lott, Michael Poultney and Barry Cooper has been published in September in *Episodes* 36: 221-226. This is available at www.episodes.co.in/contents/2013/september/pp221-226.pdf

It is hoped that this second paper will provide a useful model for future GHSR nominations. It will be forwarded to the HSTG Board for consideration of its GHSR nomination over the next few months.

Our numbers of correspondents continue to increase. As of 1 October 2013 we have 203 members from 46 countries. Please feel free to nominate additional HSTG Corresponding Members.

Barry Cooper
Secretary General

2013 VIENNA CONFERENCE VOLUME – GEOLOGICAL SOCIETY OF LONDON

Working Title:

“Heritage Stone: An Introduction”

Editors:

Dolores Pereira (Corresponding Editor), Brian Marker, Sabina Kramar,
Barry Cooper, Björn Schouenborg

Aims of the Book

The book is planned as the first of several volumes over the next few years that discuss, document and propose formal GHSR designations.

Proposed Content

1. Barry Cooper
The "Global Heritage Stone Resource": Past, Present and Future
2. Brian Marker
Basis for application of criteria for definition of Global Heritage Stone
3. Björn Schouenborg, Jenny Andersson & Mattias Göransson
Natural stones of historic and future importance in Sweden
4. Tom Heldal & Rolv Dahl
Global stone heritage: larvikite, Norway
5. Sabina Kramar, Mojca Bedjanič, Breda Mirtič, Ana Mladenović, Boštjan Rožič, Dragomir Skaberne, & Nina Zupančič
The Significance of Podpeč limestone in the Cultural Heritage of Slovenia
6. Andrey Bulakh
Building and Ornamental Stone in the History of St Petersburg Architecture
7. Anders Wikström & Dolores Pereira
The Kolmården serpentine marble in Sweden, a building stone found at many levels in the society.
8. Afat Serjani & Sabina Kramar
Drrpulli Stone and Gjirokastra World Heritage in Albania
9. Luis Lopes & Ruben Martins
Portuguese Marbles as Stone Heritage
10. Angela Almeida & Arlindo Begonha
Contribution of Portuguese two-mica granites to stone built heritage
11. Jana Horak, Terry Hughes & Graham Lott
Welsh Slate: A Candidate for Global Heritage Stone Status
12. Rafael Navarro, Dolores Pereira, Carlos Rodríguez-Navarro & Eduardo Sebastián-Pardo
Sierra Nevada serpentinites. An important element in the architectonic heritage of Granada (Spain).
13. Dolores Pereira, Ana Gimeno & Santiago del Barrio
Piedra Pajarilla: A candidate for nomination as Global Heritage Stone Resource from Spain
14. Rafael Fort, Mónica Álvarez de Buergo, M^aJosé Varas-Muriel & Elena Mercedes Pérez-Monserrat
Colmenar limestone as a resource for built heritage

15. Alessandro Borghi, Valentina Berra, Anna d'Atri, Giovanna Antonella Dino, Mariano Gallo & Luca Martire
Stone materials employed in monumental buildings in the historical centre of Turin (Piedmont - NW Italy)
16. Alessandro Cavallo & Givoanna Antonella Dino
Dimension stone exploitation and cultural heritage in the Verbano-Cusio-Ossola district - Piedmont, northern Italy
17. Nicola Careddu & Silvana Grillo
Rosa Beta granite (Sardinian pink Granite): A heritage stone of international significance from Italy
18. R. Přikryl & A. Stastna
Opuka as the traditional natural stone from the Bohemian Cretaceous Basin (Czech Republic): a review to its genesis, composition, properties, and uses.
19. Mateja Golež
Traces of the heritage arising from the Macelj Sandstone, Slovenia
20. Piero Primavori, Paola Blasi & Paola Marina
Global heritage recognition of the Carrara Marble and Roman Travertine in Italy

Submission Date

Papers have been requested by 15 December 2013 with peer review to follow.

HERITAGE STONE CONFERENCE - TURIN, ITALY – SEPTEMBER 2014

The 2014 heritage stone conference has been planned as part of the XII IAEG conference to be held in Turin, Italy, 15-18 September 2014.

Heritage Stone is part of Session 5.3 entitled: “Building Stones & Ornamental Rocks: Resource evaluation, Technical assessment, Heritage designation”.

The deadline for offers of papers has already passed and a volume of papers is now being compiled that will be available at the conference.

Papers being considered for the conference include:

1. Brian Marker. Granite from south-west England - a possible Global Heritage Stone.
2. Alessandro Reina & Loi Maristella. Environmental background in Apricena quarries (Apulia, Southern Italy).
3. Barry Cooper. Some Examples of Heritage Stones from Australia.
4. V.K. Sharma. Dimensional stone (heritage stone) and their characterization in the monuments of central India.

5. Seppo Leinonen. P-T-XCO₂ pseudosection modeling of talc-magnesite soapstone.
6. Dolores Pereira & Barry Cooper. A "Global Heritage Stone Province" in association with the UNESCO World Heritage City of Salamanca, Spain.
7. Joanna Pinińska, Alicja Bobrowska & Dominik Łukasiak. Geomechanical Assessment of the Aging Resistance of Siliceous Limestones at the Medieval Stone Constructions in the Kazimierz Dolny Town (Poland).
8. Tatiana Durmekova, Peter Ruzicka, Miroslav Hain, Maria Caplovicova & Lubomir Bagel. Changes in marbles quality after sodium sulphate crystallization and long-lasting freeze-thaw testing.
9. Rafael Navarro, Dolores Pereira, Ana Gimeno & Santiago del Barrio. Characterization of the natural variability of Macael serpentines (Verde Macael) (Almería, S of Spain) for their appropriate use in the building industry.
10. Paavo Härmä, Olavi Selonen & Hannu Luodes. The Wiborg Granite Batholith - the main production area for natural granite in Finland.
11. Arto Peltola, Olavi Selonen & Paavo Härmä. Production of Granitic Press Rollers in Finland.
12. Beatrix Moshhammer. Andreas Rohatsch & Michael Unterwurzacher. Best-known examples of ornamental stones expressing Austria's Cultural Heritage, considered as proposals for Global Heritage Stone Resource: Adnet Marble, Untersberg Marble and Leitha Limestone.
13. Wolf Mayer. The uses of natural stone in the building of Canberra, Australia's National Capital.
14. Stefano Cuccuru, Leonardo Casini, Antonio Puccini & Giacomo Oggiano. Petrographic, physical-mechanical and radiological characterization of the Rosa Beta granite (Corsica-Sardinia Batholith).
15. Rafael Navarro, Josefina Sánchez-Valverde & Jose M. Baltuille. The natural stone in the historic buildings of the city of Granada (South of Spain). Features of a possible candidate for the designation of "Global Heritage Stone province".
16. Alessandro Cavallo & Giovanna Antonella Dino. Granites from the Verbano-Cusio-Ossola district (Piedmont, northern Italy): exploitation as heritage stone. Recommended Granite Route.
17. Björn Schouenborg & Linus Brander. On the production control of dimension stone as a consequence of CE-marking requirements.
18. Richard Přikryl, Martin Vavro & Jakub Gajda. Locally produced soapstone as a source of scarce sculptural material: a case study from northern Moravia (Czech Republic).

19. Richard Prikryl, Martin Čada & Miroslav Raus. Arkoses and akosic sandstones from the molasse of Variscan orogene in the Bohemian Massif (Czech Republic) as important natural stone: testing of material and exploration of abandoned quarries potential.
20. Tom Heldal & Per Storemyr. Fire on the rocks: heat as an agent in ancient hard stone quarrying.
21. Tom Heldal & Per Storemyr. Quarrying hard rock with stone tools in ancient Egypt.
22. Rossana Bellopede & Paola Marini. Size effect in flexural strength test on dimension stones.
23. Hannu Luodes, Paavo Härmä, Heikki Pirinen & Olavi Selonen. Evolution of natural stone assessment methods.
24. Nike Luodes, Hannu Luodes, Heikki Pirinen & Paavo Härmä. Methods to evaluate the natural stone weathering condition in selected historical buildings within the project "Efficient use of natural stone in the Leningrad region and south-east Finland.
25. Sabina Kramar, Breda Mirtic, Ana Mladenovic, Mojca Bedjanic & Andrej Smuc. Karst region in Slovenia: a potential global heritage stone province.
26. Linus Brander & Björn Schouenborg. CE-marking of natural stone - practical application and solutions in Sweden.
27. Sara Fasana. Traditional stone roofs; characterization of stone slates surfaces for covering stability.
28. Luís Sousa & José Lourenço. Building stone evaluation applied to the weathered granites - the case of Amarelo Real (north Portugal).
29. Luis Lopes & Ruben Martins. Estremoz Marbles, Portugal: Dimension and Stone Heritage since the Roman Period.
30. Ian Thomas & Barry Cooper. Hierarchical approaches toward safeguarding heritage building stone resources in England and Wales.

OTHER HERITAGE STONE MEETINGS

Following the success of the 2013 Heritage Stone session, the European Geoscience Union (EGU) is encouraging us to offer a similar session entitled "Natural stone research and Heritage stone designation" at the EGU General Assembly in Vienna 27 April-2 May 2014. Please see www.egu2014.eu/home.html for details. Abstracts can already be submitted and the deadline date for abstract submission is 16 January 2014. Heritage Stone is listed under the Energy Resources & Environment (ERE) section of the programme.

The 5th “Global Stone Congress” is also currently planned in Antalya, Turkey from 22-25 October 2014. Please watch www.globalstone2014.org/ for further details. The deadline for abstract submission is 25 April 2014, while the early registration deadline is 23 May 2014.

A 2015 heritage stone conference is being planned for North America (USA or Canada) by Joe Hannibal, Brian Pratt and Nelson Shaffer.

The 2016 conference will likely be linked with the 35th International Geological Congress to be held in Cape Town, South Africa, 27 August – 4 September 2016.

INTERIM GHSR LIST (REVISED OCTOBER 2013)

Since our last Circular several additions have made to our interim or standing list of potential GHSRs.

The attached Excel File is the current Interim GHSR List.

Please remember that our interim list is just that, a list (in an Excel File) that is arranged alphabetically by country with summary details of a potential name, geological age, heritage aspect, contact person, action status, etc. It provides only a tentative guide for future prioritising of our efforts.

Comments and proposals for additions to our Interim GHSR List are always welcome

Following placement on the interim list, the following general procedures for subsequent GHSR designation are suggested:

- Use the Check List, that is provided at our website www.globalheritagestone.org to gather the essential defining information of each GHSR nominee. A summary checklist has also been published in Cooper *et al* (2013a, b)*.
 - * Cooper, Marker & Thomas (2013) “Towards international designation of a heritage dimension stone” *Key Engineering Materials* 548: 329-335.
 - * Cooper, Marker, Pereira & Schouenborg (2013). “Establishment of the ‘Heritage Stone Task Group’ (HSTG)”. *Episodes* 36: 8-10.
- Prepare a research paper around this essential information with an introduction, review of the nominee, together with a concluding statement which compares this nomination with other potential GHSRs. A model for this is provided by :-
 - * Hughes, Lott, Poultney & Cooper (2013). Portland Stone: A nomination for “Global Heritage Stone Resource” from the United Kingdom. *Episodes* 36: 221-226.
- Publish the GHSR nomination as a research paper in a peer reviewed technical Journal or heritage stone symposium volume.

This publication can then be assessed by the HSTG Board and the nominated stone approved, if deemed acceptable.

Research articles are possible in *Episodes* (the IUGS Journal), *Geoheritage*, *Journal of Architectural Heritage* or other peer reviewed journals with a distinctive tendency towards construction and architectural heritage topics. Special volumes, such as that planned in association with the Geological Society of London, are an alternative publication outlet.

CHECKLIST FOR GLOBAL HERITAGE STONE PROVINCE (GHSP)

Early in the development of the Global Heritage Stone project it became clear that more than one internationally significant stone type could occur in the same region and that these could also be associated and related geologically. The Carrara Marble region in north western Tuscany in Italy is an obvious case in point.

As a consequence in our last Circular a draft GHSP Checklist was offered for critical comment.

Since the last Circular comments have been received and a revised GHSP Check List has been placed on the Global Heritage Stone website together with the GHSR Check List

The most notable GHSP Check List revision has been the recognition of the possibility that natural stones that are unrelated geologically may be linked in a GHSP definition notably if they are associated geographically as well as part of human heritage. For example a granite and sandstone may be associated geographically in a GHSP and be utilised together in a city that has world heritage status.

The revised GHSP Check List is provided in the Box below.

<p style="text-align: center;"><u>CHECKLIST FOR “GLOBAL HERITAGE STONE PROVINCE” CITATION</u> (Revised October 2013)</p> <p>Formal Name for this proposed “Global Heritage Stone Province”: (This should be the commonly used name)</p> <p>Origin of Name (optional):</p> <p>Other Names: (This may include other names given to the designated province)</p> <p>Area of Occurrence: (This specifies the geographic area where the designated province occurs)</p> <p>List of constituent “Global Heritage Stone Resource” designations that are included within this designated Province: (This lists those stone types within the province for which a separate formal description as a designated ‘Global Heritage Stone Resource’ has been prepared)</p> <p>List of other known constituent heritage stone types, not otherwise designated, with assessment of international/national/regional status that are also included within this designated Province: (This lists other heritage stone types having international, national or regional significance)</p> <p>Geological Setting: (Information on geology that places the designated province in a wider geological perspective)</p>

Unifying characteristics within this province:

(Information that specifies the unifying features of heritage stone within the province)

Natural variation of geology within this province:

(Information on any natural changes within the designated province)

Vulnerability:

(This should assess the overall availability of stone types in the province for future use and the constraints on supply)

Historic Use and Geographic Area of Utilisation:

(This should provide a brief summary statement on the historic and geographic use of the stone from designated province)

Construction:

(This should provide an exemplary list of the most significant use of specified stone from this province)

Principal Literature related to the Designated Stone Province:

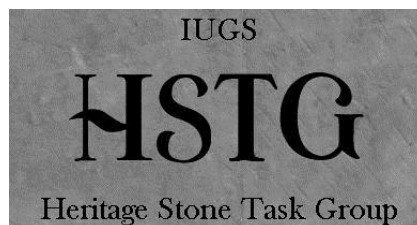
(List major scientific papers, books and popular literature dealing with the designated province)

Any other items:

A LOGO FOR HSTG

HSTG Vice President Southern Europe, Lola Pereira has received a few comments on the proposed HSTG logo. A revised design is shown below.

If no other comments are received over the next few weeks, it will become our official logo to be used on this Circular and other HSTG publications.



NEW HSTG CORRESPONDING MEMBERS

Since our last Circular the following people have been added to our list of HSTG Corresponding Members. Please welcome all these stone enthusiasts to the world of heritage stone.

<i>Australia</i> Geoff Quick	Andreas Rohatsch Kerbert Summesberger	<i>Cyprus</i> Ioannis Ioannou
<i>Austria</i> Vera Hammer	<i>Canada</i> Antony Berger	<i>France</i> Philippe Taquet
Thomas Hofmann	<i>China</i> (Mrs) Xuemei Yun	<i>Greece</i> Andreas Magganas
Maria Heinrich		<i>Italy</i>
Beatrix Moshammer		

Alessandro Cavallo
Dino Giovanna Antonella
Slovenia
Ludovic Kubicar
Mateja Golez
Tomaz Majcen
Sweden

Anders Wikström
United Kingdom
Rob Inkpen
Rob Irwin
Hugh Torrens
United States

John Diemar

Do you know of other people or organisations that are interested in HSTG work?
Please let us know, so they can be added to our list of correspondents. As of 1 October 2013
we have 203 corresponding members from 46 countries.

HSTG BOARD MEMBERS, 2012-2016

President (*ex officio* Chair IAEG C-10)

Dr Björn Schouenborg
Materials Department
SP Swedish National Testing and Research
Institute
Box 857, SE-501 15 BORÅS, SWEDEN
Email: bjorn.schouenborg@cbi.se

Secretary General

Dr Barry J. Cooper
Barbara Hardy Institute
Department of Natural and Built
Environments
University of South Australia
Adelaide SA 5001 AUSTRALIA
Email: barry.cooper@unisa.edu.au

Vice President Southern Europe

Professor Dolores Pereira
Institute for Science and Technology
Studies
Universidad de Salamanca
37008 Salamanca, SPAIN
Email: mdp@usal.es

Vice President Central Europe

Dr Sabina Kramar
Slovenian National Building and Civil
Engineering Institute,
Dimičeva 12, 1000 Ljubljana, SLOVENIA
Email sabina.kramar@zag.si

Vice President Western Europe

Prof. dr. Jan Elsen
Department of Earth & Environmental
Sciences
K.U.Leuven
Geo-instituut - Postbus 2410
Celestijnenlaan 200E - B-3001 Heverlee
BELGIUM
Email: jan.elsen@geo.kuleuven.be

Vice President North America

Dr Joseph T. Hannibal
Cleveland Museum of Natural History
1 Wade Oval Drive
Cleveland OH 44106-1767 USA
Email: jhannibal@cmnh.org

Vice President North America

Professor Brian R. Pratt
Department of Geological Sciences
University of Saskatchewan
114 Science Place
Saskatoon, Saskatchewan S7N 5E2
CANADA
Email brian.pratt@usask.ca

Vice President North America

Dr Nelson R. Shaffer
Indiana Geological Survey
611 N. Walnut Grove Ave.
Bloomington, IN 47405, USA
Email shaffern@indiana.edu

Vice President South America

Professor Fabiano Cabañas Navarro
Institute of Science and Technology
UNIFAL - Federal University of Alfenas
Campus Poços de Caldas, MG
BRAZIL
Email: fabiano.navarro@unifal-mg.edu.br

Vice President East Asia

Dr Hirokazu Kato
Central 7, 1-1-1 Higashi Tsukuba,
Ibaraki, 305-8567,
Geological Survey of Japan,
AIST(Advanced Industrial Science and
Technology)
JAPAN
Email: h.katou@aist.go.jp

Vice President Africa

Dr Phil Paige-Green
Infrastructure Engineering
CSIR Built Environment
PO Box 395
Pretoria 0001 SOUTH AFRICA
Email: ppaige@csir.co.za

Member

Dr Brian R. Marker
Independent Consultant
40 Kingsdown Ave
London W13 9PT
UNITED KINGDOM
Email: brian@amarker.freemove.co.uk

PLEASE ADDRESS ALL CORRESPONDENCE TO THE
HSTG SECRETARY GENERAL, WHO IS ALSO EDITOR AND COMPILER OF THIS
CIRCULAR