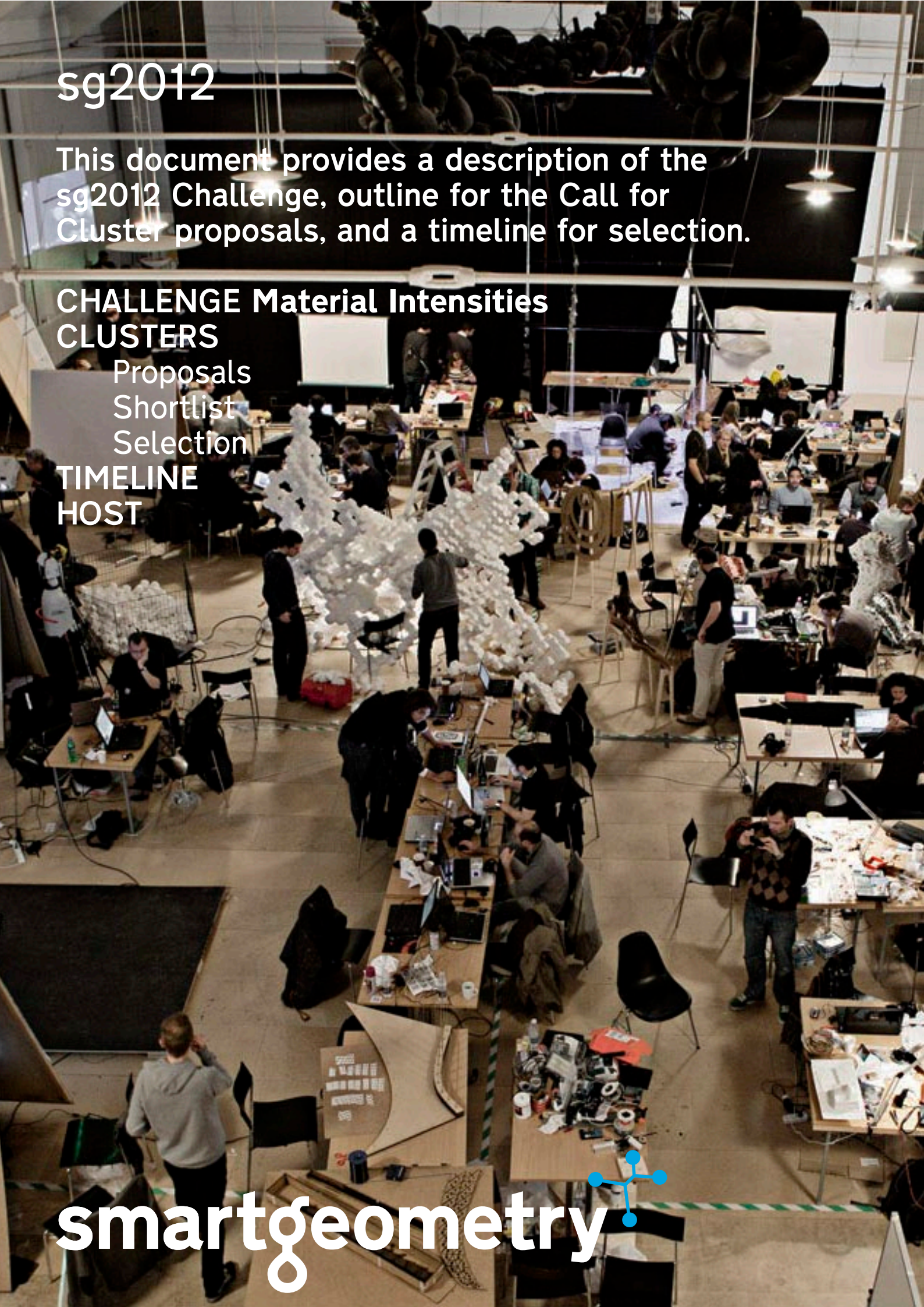

sg2012

This document provides a description of the sg2012 Challenge, outline for the Call for Cluster proposals, and a timeline for selection.

CHALLENGE Material Intensities
CLUSTERS
- Proposals
- Shortlist
- Selection

TIMELINE
HOST

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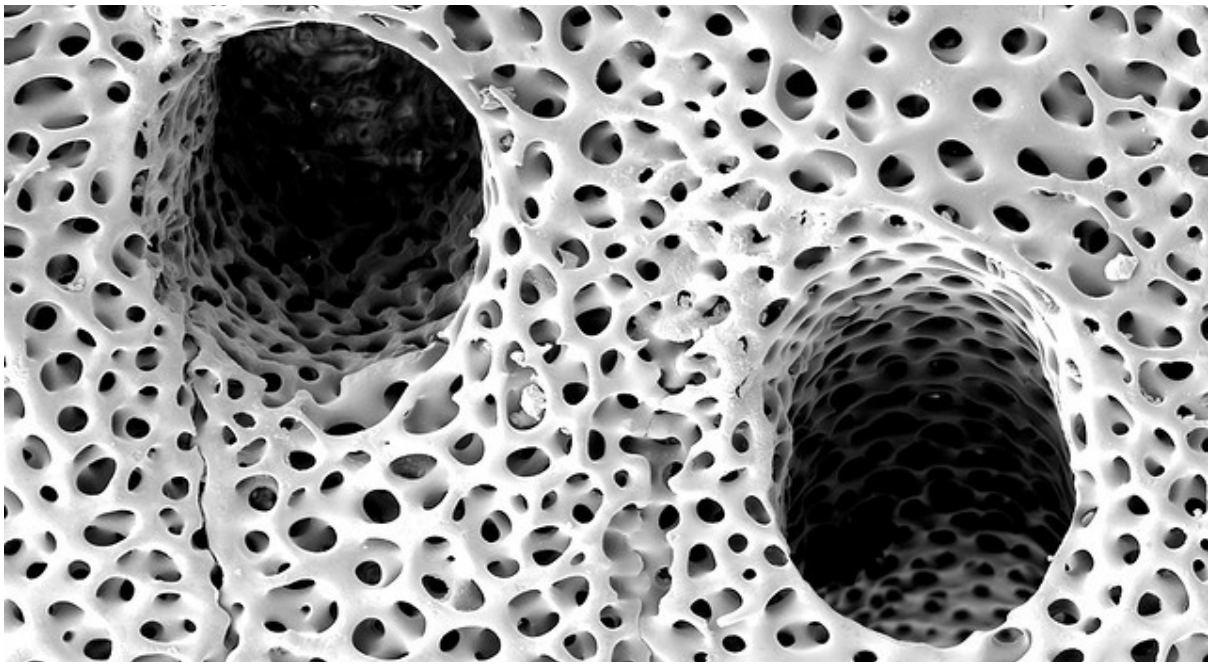
sg2012 Challenge **Material Intensities**

Challenges provides the focus for each year's SmartGeometry event. Crucial in any challenge is defining the scope, the critical context, and the contemporary framework within which the challenge sits, giving direction to both the Workshops and each Conference day.



Material Intensities
Simulation, Energy, Environment

Imagine the design space of architecture was no longer at the scale of rooms, walls and atria, but that of cells, grains and vapour droplets. Rather than the flow of people, services, or construction schedules, the focus becomes the flow of light, vapour, molecular vibrations and growth schedules: design from the inside out.

The sg2012 challenge, Material Intensities, is intended to dissolve our notion of the built environment as inert constructions enclosing physically sealed spaces. Spaces and boundaries are abundant with vibration, fluctuating intensities, shifting gradients and flows. The materials that define them are in a continual state of becoming: a dance of energy and information.

Material potential is defined by multiple properties: acoustical, chemical, electrical, environmental, magnetic, manufacturing, mechanical, optical, radiological, sensorial, and thermal. The challenge for sg2012 Material Intensities is to consider material economy when creating environments, micro-climates and contexts congenial for social interaction, activities and organisation. This challenge calls for design innovation and dialogue between disciplines and responsibilities.

sg2010 Working Prototypes strove to emancipate digital design from the hard drive by moving from the virtual to the actual in wrestling with the tangible world of physical fabrication. sg2011 Building the Invisible focused on informing digital design with real world data. sg2012 Material Intensities strives to energise our digital prototypes and infuse them with material behaviour. They have the potential to become rich simulations informed by the material dynamics, chemical composition, energy flows, force fields and environmental conditions that feed back into the design process.

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sg2012 Workshop Clusters

The sg2012 workshop will be organised around Clusters. Clusters are hubs of expertise. They comprise of people, knowledge, tools, materials and machines. sg2012 Clusters provide a focus for workshop participants working together, within a common framework. Clusters provide a forum for exchange of ideas, processes, and techniques and act as a catalyst for design resolution.

An open invitation will be extended to anyone either in sg community or beyond to submit cluster proposals based upon this year's challenge **Material Intensities: Simulation, Energy, Environment**

Cluster proposals should include:

- Names of Cluster Champions
  Smartgeometry can cover travel and accomodations for two Cluster Champions.
  Additional cluster champions are welcome if they are able to cover their own expenses.
- 100 word bios including previous experience running workshops and your experience with the topics of this year's challenge
- Aims of cluster
- Goals of Cluster
- Pre-workshop requirements
- Hardware Requirements
- Software Requirements
- Material Requirements
- Industrial Partners + Commercial Collaborators
  Primary Sponsors Bentley Systems and the acadmic programs of our host RPI are also excellent available partners
- Sponsors
- Overview of proposed schedule for each of four workshop days

Cluster proposal should be no more than 500 words (excluding bios) and include 2 emblematic images.

A strong emphasis is laid this year on multi-discplinary partnerships between practice, academia, construction, and especially industry. Smartgeometry is able to assist in finding partners.

Deadline Monday 19 September 2011

All cluster proposals will be reviewed and a majority of those submitted will be shortlisted and published for review by the sgCommunity on Wednesday 21 September 2011.

Cluster selections will be based on a peer review process. In dialogue with the host venue, RPI, 10 clusters will be chosen. The selection will aim to achieve a broad spectrum of approaches to the challenge with each cluster addressing the challenge in innovative ways. Selection will be based on well laid out achievable goals within the four day timeframe. Cluster should aim to provide participants with unique opportunities that would otherwise be unavailable. Cluster proposals that facilitate collaboration and cross fertilisation will be encouraged be it across disciplines, with industry or other research partners. The selection process will, in most cases, involve an extended dialogue with potiential clusters to refine and develop propsals in time for the opening of workshop applications.

Public announcement of selected clusters will coincide with opening of workshop applications on 21 October 2011.

Questions should be directed to **2012@smartgeometry.org**

Submissions need to be in PDF format via the form at **www.smartgeometry.org**

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sg2012 Timeline

2011 May 19 Thursday	**Call for Challenges**
2011 June 17 Friday	**Deadline Call for Challenges**
2011 June 20 Monday	**Short list of Challenge proposals for feedback from sgCommunity**
2011 August 1 Monday	**Announcement of sg2011 Challenge** **Call for Cluster Proposals**
2011 September 19 Monday	**Deadline Cluster Proposals**
2011 September 21 Wednesday	**Publishing of Cluster Proposals**
2011 October 21 Monday	**Announcement of sg2012 Clusters** **Opening of sg2012 workshop applications**
2011 December 31 Saturday	**Workshop Applications close**
2012 March 19 - 24 Monday - Saturday	**SmartGeometry 2012**

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sg2012 Host

DATES
Workshop: March 19 - 22 2012 Monday - Thursday
Two day Conference: March 23 - 24 2012 Friday - Saturday

VENUE
Hosts for sg2012 at Rensselaer Polytechnic Institute include both the School of Architecture and the Experimental Media and Performing Arts Center.

Rensselaer's history and strengths as a world-class engineering school afford a unique environment for design at the School of Architecture. In addition to it's own Undergraduate emphasis on design, computation, and the built environment, its Graduate research programs include the Lighting Research Center, the Architectural Acoustics Program and Center for Architectural Science and Ecology (CASE).

CASE's innovative research in emerging architectural and sustainable building systems and technologies exploits the newest methods of data gathering, computation and fabrication techniques. This research takes place at the intersection of academia and practice through research grants and strategic associations with the building industry.

The Experimental Media and Performing Arts Center (EMPAC), a pioneering facility devoted to research and performance across a range of digital and phycial media, will be the venue for the Workshop and Conference. EMPAC offers cascading public mezzanines for Workshop Clusters, 2 high-tech configurable black box studios, and two large performance spaces for use during the conference.

WORKSHOP EQUIPMENT
The workshop at the School of Architecture, located at the Greene Building adjacent to EMPAC, includes large format laser cutters, CNC mills, Ceramic Presses, a full woodworking shop and a range of other fabrication tools (more details to be posted soon). Additional equipment required for Workshop Clusters will be hosted either at the School of Architecture or in the workshop space at EMPAC.

EMPAC offers a range of cutting-edge options regarding digital media in their experimental studios and throughout the building. The facility is directly connected to RPI's campus supercomputer, and options are being explored for its potential use during the event. Detailed information is forthcoming.

CONNECTIONS
Both RPI and SG have strong connections in the region with fabricators, equipment providers, and companies in the software industry. Clusters interested in partnerships in industry are encouraged to discuss options with SmartGeometry and the organizers at RPI.