

REPORT ON THE IASS TECHNICAL ACTIVITIES, 2012–2013

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1. INTRODUCTORY REMARKS

The annual report of the Technical Activities Committee (TAC) will be posted in the IASS website following the decision of the Working Bureau and the Executive Committee of our Association.

The IASS policy on Technical Activities was approved by the Executive Council in 2008. It was successfully implemented during a three-year (2009-2011) trial period [1], [2]. The Executive Council agreed to a three-year extension (2012-2014) of this policy in the meeting that took place at the 2011 Symposium in London. As a result of the new actions, IASS members and other interested participants could attend the Working Group Organized Sessions in all Symposia from 2009, and in this way, they could stay informed and/or participate in the new developments of each WG.

As in the past years, I would like to acknowledge the efforts of the Working Group chairs in coordinating the WG activities, recruiting members, preparing reports and technical documentation, and contributing the Organized Sessions at the various recent Symposia.

1.1. IASS Policy on Technical Activities

The policy on Technical Activities relies on two fundamental actions:

- Each WG is asked to prepare an **annual report**. According to the renewed policy guidelines approved in London, all Working Group chairs have used the updating tool of the IASS website in order to upload their reports. All reports are therefore accessible to IASS members in the Internet.
- Each WG commits to **organize a session during the annual Symposium**. The Organized Sessions are a useful tool not only for giving a taste of the latest developments in the field of the WG, but also to attract new members and

relevant experts. This year, 9 sets of sessions have been organized by the Working Groups, comprising 191 lectures.

1.2. Technical Activities Committee Session

In order to underline the importance of the Working Groups in our Association, a specific plenary speech by the TAC Chair took place on the first day of the Wroclaw Symposium. Several objectives motivated this initiative:

- To improve the knowledge of our Association by the Symposium delegates,
- To present the IASS website, and Working Group web pages,
- To summarize the activities of Working Groups that could not organize a session in Seoul,
- To identify the Organized Sessions for delegates who could be interested to attend one or more of them,
- To inform about the *Journal of the IASS*,
- To make a brief announcement of future technical conferences endorsed by the IASS (annual symposia, WG colloquia, and other IASS-endorsed conferences.)

The TAC plenary session is intended to recur at all future Annual Symposia.

1.3. Working group webpages

All IASS members have access to the Working Group webpages. An abridged presentation of Working Group activities for non-members is available on the public part of the website. The organization of each page follows a common structure, which allows keeping the specific characteristics of each WG. The main parts of the website report are:

- A first set comprising three sections: “**Mission**”, “**Background**” and “**Current Objectives**”. They are self-explanatory, and are the ones also posted on the **public part** of the website.
 - The second set begins with information of the last updating date, and contains a section on “**Activities**” (the period covers the activities since the preceding symposium, and includes those developed until the Seoul Symposium), and one of “**Future Anticipated Activities**” (The period may cover several years according to the specific Working Group projects).
 - A third set is devoted to “**Membership**”: it begins by a “call for joining” the Working Group. The subsequent list contains IASS members. An additional list of experts (non IASS members) can be attached as a document at the end of the web page. Since the webpage is not completely visible by non-members, distribution of flyers has been suggested to WG chairpersons in order to attract new members.
 - The two last sections concern “**Documentation**” and “**Links**.” It is possible for IASS members to download documents previously attached by the chairpersons as resources, and to benefit of useful links to other websites. Working groups are encouraged to use this possibility. It is advisable to scan documents, such as older reports, recommendations, and other publications of the various Working Groups, creating an **archive** that could be read by IASS members. Chairs have also been asked to upload a flyer related to their Working Group. This has already been accomplished by some WGs.
- than 50 delegates from 20 countries participated in this successful event.
- **Preparation of reports and state-of-the-art reviews** of fields related to the WG, like those published in previous years (for example “Structural Design of Retractable Roof Structures” by Prof. Kazuo Ishii.)
 - **Preparation of guidelines:** WG 8 presented during the Wroclaw Symposium the “Draft Guide to Buckling Load Evaluation of Metal Reticulated Roof Structures.”
 - **Edition of special issues** of the *Journal of the IASS*. WG 5 together with WG 17 has edited a special double issue on the work of Pier Luigi Nervi (vol. 54, nos. 2 & 3.)
 - **Publication of scientific papers** in the *Journal of the IASS* and other international journals.
 - **Organization of special sessions in other scientific meetings**, like WG 5 and WG 13 at the IASS-IACM 2012 Conference, which took place last March in Sarajevo.
 - **Analysis of real cases.**
 - **Publication of newsletters.**

It should be remarked that more recent Working Groups (Computational Methods, Structural Morphology, Historical Spatial Structures, Environmentally Compatible Structures, and Temporary Spatial Structures) have transversal character. Previous ones were dedicated to specific sub-classes of Shell and Spatial Structures. This feature conditions the way in which each group carries out its activities.

It is also planned to include slideshows collecting a few photographs of each WG to illustrate the public WG pages.

1.4. Activities of Working Groups

Besides the organization of sessions in the annual Symposia, Working Groups carry out diverse technical activities such as:

- **Organization of scientific meetings.** Some of the Working Groups hold regular colloquia and international seminars. This year, WG 4 (Masts and Towers) organized the 26th Working Group Meeting in Paris on September 8-12, 2013. More

1.5. Working group membership

According to the statutes of IASS the members of a WG should be members of the Association.

TITLE IV - ARTICLE 22

The Executive Council may from time to time create Working Groups as described in Article 7 of the Statutes. Each Working Group shall consist of members of the Association and shall be presided over by a Chairperson appointed by the President. Each Working Group shall report to the Executive

Council in writing or on the website once a year. The report of the investigations of each Working Group shall be submitted to the Executive Council who shall have the right to approve or disapprove the publication of such report under the auspices of the Association.

Experts (non IASS members) who are interested by the activities of a Working Group are welcome as WG members. The objective is to encourage them to join our Association by explaining the advantages attached to membership: reduced fees for Symposia, access to the totality of the website, reception of the four annual Issues of the *Journal of the IASS*.

The geographical concentration in the Working Group membership is generally justified by a local dominant interest in the field: it is the case of WG 3 “Cooling Towers,” or WG 8 “Metal Spatial Structures” (particularly for earthquake studies.) Financial considerations for the organization of meetings and colloquia also play a significant role. All groups make remarkable efforts to enlarge their membership, and new co-chairing can help the geographical extension, expressing the international character of the Association. This situation happened recently in WG 6 “Tension and membrane structures”: two new co-chairs were appointed with the purpose to cover Europe and America.

Most Working Groups have between **20** and **25** IASS Members.

2. ACTIVITIES DURING 2012-2013

Several changes in WG Chairpersons took place this year:

- Changes in WG 15 (Structural Morphology): Andrew Borgart resigned as Chair due to academic commitments. René Motro expressed his gratitude for his excellent work and nominated Jeroen Coenders (former Co-chair) as new Chair, and Niels De Temmerman as new Co-chair. Bernard Maurin continues as Co-chair.
- Changes in WG 18 (Environmentally Compatible Structures): Ludevit Vegh communicated his wish to leave his office as Chair, but to continue working for the WG. René Motro expressed his gratitude for his excellent leadership and encouraged him to continue his activity in the WG with the status of Past-chair. René Motro nominated Petr Vegh (former Co-chair) as new Chair, and informed that the designation of a Co-chair is still pending. It is desired to strengthen the relationship between the topics of the group and the specificity of our association.

The dissolution of WG 1 (Tanks and Silos) was decided by the Working Bureau and confirmed by the Executive Council. Interested persons may continue the activity in the frame of WG 5 and WG 8.

2.1. Summary of Working Group reports

A summary of the main activities of each of the active Working Groups is included in the following pages. Further details may be found on the corresponding WG website.

<p>WG 3 Cooling and Solar Updraft Towers</p> <ul style="list-style-type: none"> Organized the 6th International Symposium on Cooling Towers in Cologne, Germany in 2012, http://www.isct2012.de Participated in the 3rd International Conference on Solar Updraft Tower Power Technology SUTPT 2012 in Wuhan, China in October 2012 Organized a four-part session (19 papers) at the IASS Wroclaw 2013 Symposium Organized a special session on Solar Updraft Towers at SEMC 2013 Symposium in Cape Town, South Africa, www.semc.uct.ac.za Plans to organize a joint International Conference on Industrial Chimneys and Cooling Towers (ICCT2014) in Prague, Czech Republic, October 8-11, 2014, www.icct2014.org Current membership: 19 IASS Members Specific action is being developed for extending the membership outside Europe 	<p>Prof. Dr. Eng. Reinhard HARTE (Chair)</p>
<p>WG 4 Masts and Towers</p> <ul style="list-style-type: none"> Encourage the members of the Working Group to become members of the IASS. Organized the 26th meeting in September 2013 in Paris, France with approx. 60 participants from approx. 20 countries (39 presentations.) Plans to edit a special issue of the <i>J. of IASS</i> on Towers and Masts Current membership: 29 IASS Members 	<p>Eng. Ulrik STOTTRUP-ANDERSEN (Chair)</p>
<p>WG 5 Concrete Shell Roofs</p> <ul style="list-style-type: none"> Organized a session at the IASS-IACM 2012 Conference in Sarajevo, http://www.gf.unsa.ba/iass-iacm-2012/. Contributed a special section of the June 2012 issue of the <i>J. IASS</i> on “Retrospectives on Concrete Shells.” [3] Co-organized a three-part session (14 papers) on the theme “P.L. Nervi: Art and Technology in Building” at the IASS Wroclaw 2013 Symposium (joint session with WG 17). Co-edited a double special issue of the <i>J. IASS</i> on the theme “P.L. Nervi: Art and Technology in Building”, jointly with WG 17 (co-editors J. Abel, G. Arun and M. Chiorino.) [4] Plans to organize a session on the design and performance of concrete shell roofs subject to extreme loading conditions at the IASS 2014 Symposium in Brasilia. Current membership: 29 IASS Members 	<p>Prof. John ABEL (Chair)</p>
<p>WG 6 Tension and Membrane Structures</p> <ul style="list-style-type: none"> Organized eight sessions (35 papers) at the IASS Wroclaw 2013 Symposium. Contributed a keynote lecture at the Tensinet Symposium 2013 in Istanbul (May 8-10, 2013) - http://www.tensinet2013.org Participated at the “Structural Membranes 2013” Conference in Munich (Oct. 9-11, 2013) with a plenary lecture - http://congress.cimne.com/membranes2013/frontal/default.asp Organizes the discussion of the state-of-the-art of tension structures in the world and promotes the exchange of information about regional standards. Current membership: 28 IASS Members 	<p>Prof. Dr. Ken'ichi KAWAGUCHI (Chair)</p>

WG 8 Metal Spatial Structures <ul style="list-style-type: none"> • The activities of this WG8 focus on two main design concerns: Buckling, and Earthquake Response of Metal Spatial Structures. • Organized a four-part session on the theme “Buckling and Realization”, and a three-part session on the theme “Earthquake and Performance” (31 papers) at the IASS Wroclaw 2013 Symposium. • A “Draft Guide to Buckling Load Evaluation of Metal Roof Spatial Structures” has been prepared by the group, and is now under review process. • From late 2012, a group has started working in the preparation of a “Guide to Earthquake Response Evaluation of Metal Roof Spatial Structures. ” • WG Sessions will be organized in future IASS Symposia in order to promote discussion and exchange information among IASS members. • Current membership: 18 IASS members. • Specific action is being developed for extending the membership outside Asia. 	Prof. Dr. Shiro KATO (Chair)
WG 12 Timber Spatial Structures <ul style="list-style-type: none"> • Organized a two-part session (10 papers) at the IASS Wroclaw 2013 Symposium. • Plans to organize a special session on the topic “The potential of reduced environmental footprint through timber spatial structures” at the IASS 2014 Symposium in Brasilia. • Plans to organize a joint Colloquium with WG 12 in 2015. • Plans to edit a special issue of the <i>J. IASS</i> on Timber Spatial Structures. • Current membership: 24 IASS members. 	Prof. John CHILTON (Chair)
WG 13 Computational Methods <ul style="list-style-type: none"> • Organized a session on the topic “Beam and Rod Models” at the IASS-IACM 2012 Conference in Sarajevo. http://www.gf.unsa.ba/iass-iacm-2012/ • Organized a five-part session (23 papers) at the IASS Wroclaw 2013 Symposium. • Plans to contribute in the organization of the next IASS-IACM 8th Conference on Computation of Spatial Structures, Harbin, China in 2015 (dates to be determined) • Current membership: 25 IASS Members. 	Prof. Dr. Hiroshi OHMORI (Chair)
WG 15 Structural Morphology <ul style="list-style-type: none"> • Consolidated the Study Groups: Transformable Structures – Adaptive Formworks – Computation and Geometry – Origami – Curved Surface Structures – Active Bending. • Organized five sessions and three two-part sessions (55 papers) at the IASS Wroclaw 2013 Symposium. • Edited a special issue of the <i>J. IASS</i> on the theme “Structural Morphology” (co-editors A. Borgart, J. Coenders.) [5]. • Current membership: 52 IASS Members. 	Dr. Jeroen COENDERS (Chair)
WG 17 Historical Spatial Structures <ul style="list-style-type: none"> • Current objective is documenting early reinforced concrete shell and folded plate structures all over the world. A web database is structured to allow for contributions of IASS members. www.iasswg17.com • Co-organized a three-part session (14 papers) on the theme “P.L. Nervi: Art and Technology in Building” at the IASS Wroclaw 2013 Symposium (joint session with WG 5.) • Co-edited a double special issue of the <i>J. IASS</i> on the theme “P.L. Nervi: Art and Technology in Building”, jointly with WG 5 (co-editors J. Abel, G. Arun and M. Chiorino.) [4] • Current membership: 24 IASS Members. 	Prof. Dr. Görün ARUN (Chair)

WG 18 Environmentally Compatible Structures <ul style="list-style-type: none"> Organized a two-part session (10 papers) at the IASS Wroclaw 2013 Symposium. Organized the 10th International Correspondence Jubilee Seminar on ECS in Prague, October 30, 2013. Plans to organize a joint Colloquium with WG 12 in 2015. Current membership: 6 IASS Members. Aims to strengthen the relationship between the topics of the group and the specificity of the IASS. 	Dr. Petr VEGH (Chair)
WG 19 Temporary Spatial Structures <ul style="list-style-type: none"> Is revising the “Draft structural design guidelines for Temporary Spatial Structures” (presented during the IASS Seoul Symposium 2012) according to the comments of the reviewers. Plans to gather commentaries and practical information for the guidelines in order to finish the mission of the group. Current membership: 7 IASS Members. 	Eng. Tatsuo MUROTA (Chair)

3. CONCLUSION

The current policy on Technical Activities is producing successful results in terms of knowledge of the WG activities by IASS members and Symposium delegates, participation in the WG activities, and increase in the production of technical reports, guidelines and publications.

I believe that Working Groups constitute the essential backbone of the Association. We need active groups with well-defined missions and targets. The technical and scientific activities of the groups are key for the progress of the IASS.

I offer my support to the WG Chairs for their initiatives and actions. **I encourage all IASS members to participate in the groups, and all Working Groups to continue with their activities**, especially,

- Organizing specific sessions in future Symposia, and attracting relevant experts,
- Publicizing their activity by posting documents and links, providing illustrations for the public part, updating their web pages and producing flyers,
- Extending the scope of their activities beyond session organization,
- Producing scientific papers, state-of-the-art reports, guidelines, and newsletters.

REFERENCES

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