

REPORT ON THE IASS TECHNICAL ACTIVITIES, 2013 – 2014

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1. INTRODUCTORY REMARKS

Since 2013, the annual report of the Technical Activities Committee (TAC) is posted in the IASS website following the decision of the Working Bureau and the Executive Committee of our Association.

1.1. IASS Policy on Technical Activities

According to the IASS policy on Technical Activities, every year the IASS active Working Groups are asked (a) to prepare an annual report and upload it to the IASS WG website, and (b) to organize a special session during the IASS annual Symposium.

In this way, IASS members and other interested participants may stay informed and/or participate in the new developments of each WG.

This year, **eight sets of sessions comprising 95 presentations have been organized by the WGs in the Brasilia Symposium.**

The revised IASS policy on Technical Activities was approved by the Executive Council at the 2011 Symposium in London. After a period of three years, **the Executive Council of the IASS in the meeting held in Brasilia on September 14, 2014, has decided to extend the validity of the policy for a renewed period of three years.**

1.3. Working group webpages

I would like to remind that all IASS members have full 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**”, and one of “**Future Anticipated Activities.**”
- A third set is devoted to “**Membership.**”
- The two last sections concern “**Documentation**” and “**Links**” with technical documentation related to the Working Group.

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**
- **Preparation of reports and state-of-the-art reviews** of fields related to the WG
- **Preparation of guidelines**
- **Edition of special issues** of the *Journal of the IASS*
- **Publication of scientific papers** in the *Journal of the IASS* and other international journals
- **Organization of special sessions in other scientific meetings**
- **Analysis of real cases**
- **Publication of newsletters**

1.5. Working group membership

According to the [statutes of the IASS](#) (TITLE IV – Article 22) the members of a WG should be members 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*.

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.

Most Working Groups have between 20 and 25 IASS Members.

2. ACTIVITIES DURING 2013-2014

2.1. News related to the Working Groups

The IASS Executive Council, during the recent meeting in September approved the following decisions in relation to the Working Groups:

- **New denomination for Working Group 3.** Considering the specific character of this group, the new name “**Technical Expert Group on Masts and Towers**” has been adopted. The EC also took the opportunity to congratulate the chairpersons of this group for the significant increase of the membership.
- **Renovation of Chairpersons in WG5.** Profs. John Abel and Tibor Tarnai expressed their wish to step aside from their positions in

WG5. The EC nominated Profs. **Sigrid Adriaenssens and Philippe Block** as co-chairs of WG5 “Concrete Shell Roofs”, and expressed deep gratitude to the former chairs for their continued efforts.

- **New WG on Teaching of Shell and Spatial Structures.** Following a proposal which received wide support among IASS members, the new Working Group 20 “Teaching of Shell and Spatial Structures,” with Prof. **Olga Popovic Larsen** as Chair and Dr. **Alireza Behnejad** as Co-chair, has been created. It aims to encourage the work on methods of teaching spatial structures.

2.2. Status of the recent WG8 and WG19 Guides

The “**(Draft) Guide to Buckling Load Evaluation of Metal Reticulated Roof Structures**”, prepared by WG8, has been peer reviewed and subsequently revised by the authors. WG 8 plans to make a limited distribution of the revised manuscript with the aim to collect new suggestions, comments and proposals, to be incorporated in a final version of the document.

The “**Structural Design Guidelines for Temporary Spatial Structures**” is under revision by the authors. WG 19 Chair plans to be ready with this task in the next months.

2.3. 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.

WG 3 Cooling and Solar Updraft Towers

Prof. Dr. Eng. Reinhard HARTE (Chair)

- Participated in the 81st CICIND Conference in Venice, Italy, April 30 - May 3, 2014: <http://www.cicind.org>
- Is organizing a joint International Conference on Industrial Chimneys and Cooling Towers (ICCT2014) in Prague, Czech Republic, October 8-11, 2014, www.icct2014.org
- Current membership: **21** IASS Members

<p>WG 4 Technical Expert Group on Masts and Towers Eng. Ulrik STØTTRUP-ANDERSEN (Chair)</p> <ul style="list-style-type: none"> • Co-edited two special issues (n. 180 & 181, 2014) of the <i>J. IASS</i> on the theme “Masts and Towers” (editor U. Støttrup-Andersen) – refs. [1] and [2] • Will held the 27th meeting of the WG in Prague, September 2015 • Current membership: 40 IASS Members
<p>WG 5 Concrete Shell Roofs Prof. Dr. Sigrid ADRIAENSSENS, Prof. Dr. Philippe BLOCK (Chairs)</p> <ul style="list-style-type: none"> • Organized two sessions at the IASS-SLTE 2014 Symposium in Brasilia: "<i>Design and Performance of Concrete Shell Roofs Subject to Extreme Loadings</i>" and "<i>Nontraditional Forming and Reinforcement of Concrete Shells.</i>" • Is advancing the progress on the on-line State-of-the-Art/Practice Report on Concrete Shell Structures • Current membership: 25 IASS Members
<p>WG 6 Tension and Membrane Structures Prof. Dr. Ken'ichi KAWAGUCHI, Prof. Marijke MOLLAERT, Prof. Ronald SCHAEFFER (Chairs)</p> <ul style="list-style-type: none"> • Participated at the “<i>Structural Membranes 2013</i>” Conference in Munich (Oct. 9-11, 2013) with a plenary lecture - http://congress.cimne.com/membranes2013 • Organized a session at the IASS-SLTE 2014 Symposium in Brasilia. • Current membership: 25 IASS Members
<p>WG 8 Metal Spatial Structures Prof. Dr. Shiro KATO, Prof. Toru TAKEUCHI, Prof. Dr. Su-Duo XUE (Chairs)</p> <ul style="list-style-type: none"> • A “(Draft) <i>Guide to Buckling Load Evaluation of Metal Roof Spatial Structures</i>” has been prepared by the group, peer-reviewed, and is now under final revision process. • From late 2012, a group has started working in the preparation of a “<i>Guide to Earthquake Response Evaluation of Metal Roof Spatial Structures.</i>” • Organized a two-part session at the IASS-SLTE 2014 Symposium in Brasilia on “<i>Form, Strength and Earthquake Response</i>” • Current membership: 19 IASS members. • Specific action is being developed for extending the membership outside Asia.
<p>WG 12 Timber Spatial Structures Prof. John CHILTON, Dr. Andreas FALK, Prof. Dr. Minjuan HE (Chairs)</p> <ul style="list-style-type: none"> • Organized a session on the topic “<i>The Potential of Reduced Environmental Footprint Through Timber Spatial Structures</i>” at the IASS-SLTE 2014 Symposium in Brasilia. • Is organizing a joint Colloquium with WG 18 in 2015 on “<i>Bio-based and Bio-Inspired Environmentally Compatible Structures</i>” at Tokyo Denki University, Tokyo, April 10-13. 2015. • Plans to edit a special issue of the <i>J. IASS</i> on Timber Spatial Structures. • Current membership: 24 IASS members.
<p>WG 13 Computational Methods Prof. Dr. Hiroshi OHMORI , Prof. Dr.-Ing. Kai-Uwe BLETZINGER, Prof. Dr. Carlos LÁZARO (Chairs) Prof. Makoto OHSAKI (Vice-Chair)</p> <ul style="list-style-type: none"> • As a result of the 2012 IASS-IACM Conference held in 2012 in Sarajevo, two special issues of the Journals “<i>Engineering Structures</i>” and “<i>Computers & Structures</i>” have been published (links to the contents can be found in the WG webpage.) • Participated in the 11th World Congress on Computational Mechanics held in Barcelona in July 2014 (http://www.wccm-eccm-ecfd2014.org) • Organized a session at the IASS-SLTE 2014 Symposium in Brasilia. • Current membership: 25 IASS Members.

<p>WG 15 Structural Morphology Dr. Jeroen COENDERS, Prof. Dr.-Ir.-A. Niels DE TEMMERMAN, Prof. Dr. Bernard MAURIN(Chairs)</p> <ul style="list-style-type: none"> • Consolidated the Study Groups: Transformable Structures – Adaptive Formworks – Computation and Geometry – Origami – Curved Surface Structures – Active Bending. • Organized a six-part session at the IASS-SLTE 2014 Symposium in Brasilia. • Is contributing in the organization of the next IASS Symposium 2015 in Amsterdam • Current membership: 52 IASS Members.
<p>WG 17 Historical Spatial Structures Prof. Dr. Görün ARUN (Chair)</p> <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 • Organized a session at the IASS-SLTE 2014 Symposium in Brasilia. • Current membership: 26 IASS Members.
<p>WG 18 Environmentally Compatible Structures Dr. Petr VEGH (Chair)</p> <ul style="list-style-type: none"> • Organized the 10th International Correspondence Jubilee Seminar on ECS in Prague, October 30, 2013. • Is organizing a joint Colloquium with WG 12 in 2015 on “Bio-based and Bio-Inspired Environmentally Compatible Structures” at Tokyo Denki University, Tokyo, April 10-13. 2015. • Organized a two-part session at the IASS-SLTE 2014 Symposium in Brasilia. • Current membership: 6 IASS Members. • Aims to strengthen the relationship between the topics of the group and the specificity of the IASS.
<p>WG 19 Temporary Spatial Structures Eng. Tatsuo MUROTA (Chair)</p> <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.
<p>WG 20 Teaching of Shell and Spatial Structures Prof. Dr. Olga POPOVIC LARSEN, Dr. Alireza BEHNEJAD (Chairs)</p> <ul style="list-style-type: none"> • This group has been created at the EC Meeting in Brasilia • Mission of the WG is to encourage work on methods of teaching spatial structures • Current membership: 28 IASS Members.

3. CONCLUSION

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. In this respect, the gradual renovation of the chairmanship, the production of technical documents, the edition of Journal issues and the creation of new Groups are tokens of the dynamism and activity of our Association.

As in the past years, I would like to acknowledge the efforts of all 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. I also welcome the new WG Chairs, and stress the gratitude of the association to the Chairs who are leaving their office.

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

- [1] ***Støttrup-Andersen, U. (Guest Ed.)***, Masts and Towers – Part 1, Special Issue of the *J. IASS*, Vol. 55, No. 2, 2014, June. 2014.
- [2] ***Støttrup-Andersen, U. (Guest Ed.)***, Masts and Towers – Part 2, Special Issue of the *J. IASS*, Vol. 55, No. 3, 2014, Sept. 2014.
- [3] Annual Reports of the IASS Technical Activities Committee ([link to the site](#))