

REPORT ON THE IASS TECHNICAL ACTIVITIES, 2014–2015

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1. INTRODUCTORY REMARKS

The aim of the annual report of the Technical Activities Committee (TAC) is to summarize the main activities, results and news related to the IASS Working Groups (WGs).

If you are a member of the Association, you will be familiar with the IASS policy on Technical Activities, which includes the organization of Working Group sessions during IASS annual Symposia and the reporting of WG activities in the website of the Association.

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. WG webpages include information about mission, objectives, activities and membership of each group, as well as links to relevant related documentation.

Besides the organization of sessions in the annual Symposia, Working Groups carry out diverse technical activities ranging from the organization of scientific meetings to the preparation of guidelines, reports or scientific papers, as well as the edition of special issues of the Journal of the IASS. You may find more detailed information about WG membership, organization and activities in the IASS website, and in previous TAC reports available in this [link](#).

2. ACTIVITIES DURING 2014-2015

During the period 2014 – 2015, Working Group 20 has started its activity, Working Group 19 has completed its mission and there have been changes in the chairmanship of some other groups. Furthermore, several sessions, colloquia and conferences have been organized by WGs, and the guidelines prepared by WG 19 have been recently made available. The next sections

provide more details about WG activities.

2.1. News related to the Working Groups

The IASS Executive Council, during the August 2015 meeting in Amsterdam, approved the following decisions related to Working Groups:

- **Renovation of Chairpersons in WG 12 - "Timber Spatial Structures"**. Prof. John Chilton has stepped down as chair of WG 12. Dr. **Andreas Falk** (currently co-chair, together with Min-juan He) was nominated by the IASS President to take on the role.
- **Renovation of Chairpersons in WG 13 - "Computational Methods"**. Prof. Hiroshi Ohmori has resigned as WG 13 chair. Prof. **Makoto Ohsaki** (former vice-chair) was nominated as co-chair (together with Profs. Bletzinger and Lázaro) by the IASS President.
- **Dissolution of WG 19 - "Temporary Spatial Structures"** after the completion of its mission.

The IASS President and the EC members expressed their gratitude to Prof. Chilton, Prof. Ohmori, and Mr. Murota for their efforts and remarkable achievements as past chairs of the WGs.

2.2. Status of the WG8 and WG19 Guidelines

A hardcopy of the "**(Draft) Guide to Buckling Load Evaluation of Metal Reticulated Roof Structures**", prepared by WG8, has been mailed (beginning of 2015) to WG members and other interested persons. The Working Group goes on with the plan to finish the report with comments from the community.

The "**Structural Design Guidelines for Temporary Spatial Structures**" prepared by WG 19 have been approved by the reviewers.

The document is already available for downloading in the members-only part of the WG 19 website, together with the main papers referenced in the guidelines.

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.

2.3. Summary of Working Group reports

WG 3 Cooling and Solar Updraft Towers

Prof. Dr. Eng. Reinhard HARTE (Chair)

- Organized a joint *International Conference on Industrial Chimneys and Cooling Towers (ICCT2014)* in Prague, Czech Republic, October 8-11, 2014, www.icct2014.org
- Current membership: 20 IASS Members

WG 4 Technical Expert Group on Masts and Towers

Eng. Ulrik STØTTRUP-ANDERSEN (Chair), Eng. Mogens G. NIELSEN (Secretary)

- Has edited two special issue of the *J. IASS* on Towers and Masts (Parts 1 & 2) Vol. 55 (2014) No. 2 & 3.
- Has held the 27th meeting of the WG in Prague, in September 2015.
- Current membership: 37 IASS Members

WG 5 Concrete Shell Roofs

Prof. Dr. Sigrid ADRIAENSSENS, Prof. Dr. Philippe BLOCK (Chairs)

- Organized a two-part session at the IASS 2015 Symposium in Amsterdam.
- Was involved in the co-sponsoring of the conference *International Conference on Shells, Plates and Beams (SPB2015)* held in Bologna, Italy, 16-18 September 2015.
- Plans to edit a special issue of the *J. IASS* to be published in 2016.
- Current membership: 32 IASS Members

WG 6 Tension and Membrane Structures

Prof. Dr. Ken'ichi KAWAGUCHI, Prof. Marijke MOLLAERT, Prof. Ronald SCHAEFFER (Chairs)

- Organized a three-part session at the IASS 2015 Symposium in Amsterdam.
- Co-edited together with WG 13 a special issue of the *J. IASS* on Membrane Structures (Vol. 56 No.1, 2015.)
- Will organize the *TENSINET - COST ACTION TU1303 SYMPOSIUM 2016* at the University of Newcastle.
- Is contributing to the committee for the revision of the "Tensile Membrane Structures Standard" for ASCE
- Current membership: 27 IASS Members

WG 8 Metal Spatial Structures

Prof. Dr. Shiro KATO, Prof. Toru TAKEUCHI, Prof. Dr. Su-Duo XUE (Chairs)

- Organized one session at the IASS 2015 Symposium in Amsterdam.
- The (Draft) Guide to Buckling Load Evaluation of Metal Roof Spatial Structures has been revised and distributed to WG members and interested persons. At present, WG 8 are collecting suggestions, proposals and other information to be incorporated to the Draft.
- A new Working Committee of the WG has been organized to prepare a Guide to Earthquake Response Evaluation of Metal Roof Spatial Structures.
- Aims to organize sessions in IASS2016 in Tokyo, Japan with focus on *Form, Buckling, Earthquake Response, and Reliability* of metal spatial structures.
- Current membership: 19 IASS members. Specific action is being developed for extending the membership outside Asia.

<p>WG 12 Timber Spatial Structures Dr. Andreas FALK, Prof. Dr. Minjuan HE (Chairs)</p> <ul style="list-style-type: none"> Organized a two-part session on <i>Timber and bio-based design of visionary structures and systems</i> at the IASS 2015 Symposium in Amsterdam. Organized 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. www.facebook.com/IASS2015Tokyo Will organize a special session at the IASS 2016 Symposium in Tokyo. Plans to edit a special issue of the J. IASS on Timber Spatial Structures. Current membership: 24 IASS members.
<p>WG 13 Computational Methods Prof. Makoto OHSAKI, Prof. Dr.-Ing. Kai-Uwe BLETZINGER, Prof. Dr. Carlos LÁZARO (Chairs)</p> <ul style="list-style-type: none"> Participated in the <i>11th World Congress on Computational Mechanics</i> held in Barcelona in July 2014 (http://www.wccm-eccm-ecfd2014.org) Co-edited together with WG 6 a special issue of the IASS Journal on <i>Membrane Structures</i> (vol. 56 n.1, 2015.) Organized a session on <i>Computational Morphogenesis</i> at IASS 2015 Amsterdam Organized three sessions at the <i>Membranes 2015</i> Conference held in Barcelona in October 2015 (http://congress.cimne.com/membranes2015/) Plans to organize a Session in the next IASS 2016 Symposium to be held in Tokyo. Current membership: 26 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"> Co-organized the <i>Digital Technology and BIM</i> track at the IASS Symposium 2015 in Amsterdam. Organized five special sessions at the IASS Symposium 2015 in Amsterdam. Supported the organization of the IASS 2015 Symposium. Plans to review current study group plan, and further populate and consolidate SMG study groups. Will organize special sessions at IASS 2016 Tokyo. Current membership: 53 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 the international conference <i>Re-Evaluating Contemporary Designs in Historical Context (RE-COND'15)</i> in Istanbul, Turkey, on 22-24 July 2015 (http://recond15.sewc-tr.com/) Current membership: 23 IASS Members.
<p>WG 18 Environmentally Compatible Structures Dr. Petr VEGH (Chair)</p> <ul style="list-style-type: none"> Co-organized a joint Colloquium with WG 12 in 2015 on <i>Bio-based and Bio-Inspired Environmentally Compatible Structures</i> at Tokyo Denki University, Tokyo, April 10-13, 2015. www.facebook.com/IASS2015Tokyo Aims to strengthen the relationship between the topics of the group and the specificity of the IASS. Current membership: 6 IASS Members.
<p>WG 19 Temporary Spatial Structures Eng. Tatsuo MUROTA (Chair)</p> <ul style="list-style-type: none"> Has revised and finished the <i>Structural Design Guidelines for Temporary Spatial Structures</i>. They are available in the members-only WG website. Has finished its mission

WG 20 Teaching of Shell and Spatial Structures**Prof. Dr. Olga POPOVIC LARSEN, Dr. Alireza BEHNEJAD (Chairs)**

- Was founded at the IASS-SLTE Symposium 2014 in Brasilia
- Organized a session on *Teaching: Spatial Structures for Complex Contexts* at the IASS Symposium 2015 in Amsterdam.
- Plans to organize a workshop on the Teaching of Shell and Spatial Structures in Bangalore, India during the fall of 2015
- Current membership: **29** 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] **Bletzinger, K.-U., Mollaert, M. (Guest Eds.)**, Membrane Structures, Special Issue of the *J. IASS*, Vol. 56, No. 1, 2015, March 2015.
- [4] Annual Reports of the IASS Technical Activities Committee ([link to the site](#))