

# TECHNICAL ACTIVITIES COMMITTEE, Report 2009-10

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## INTRODUCTION

This report was discussed during the Working Bureau Meeting and presented to the Executive Council during the Shanghai IASS Symposium. It was also presented during the plenary TAC session at the beginning of the Symposium.

## 1 GENERAL COMMENT

### 1.1 Implementation of IASS Policy on Technical Activities

A new policy on technical activities was approved during the IASS Symposium in Acapulco (2008). It was anticipated that this policy will be examined after three years. It was applied in Valencia (2009) and this year in Shanghai, and will be in London next year.

Two points of this new policy need to be underlined:

- As usual, each WG was asked to send an **annual report**. It was possible this year to have a direct meeting with all the chairmen and chairwoman (except for WG1 Tanks and Silos). During these meeting between the President of the IASS, the TAC Chairman, and the chair(wo)man of the working group, we tried to optimize the presentation of this annual report on the website of the IASS. It was certainly very useful for updating of web pages.
- **Organization of a session during the annual Symposium.** These sessions are very useful not only for giving a taste of the latest developments in the field of the WG, but also to attract new members. This year 16 sessions have been organized by the working groups, comprising 76 lectures. A special plenary session devoted to temporary structures has been co-organized by the WG 19, and had a great success during this symposium specially devoted to "Temporary and permanent Spatial Structures".

### 1.2 Technical Activities Committee Session

In order to underline the importance of the working groups in our association, a specific plenary session (TAC session) took place on Monday morning. Several objectives motivate this initiative:

- Improvement of the knowledge of our association for the delegates
- Presentation of the website, and working group web pages
- Expression of working groups that could not organize a session in Shanghai (WG1, 3, 4 & 17). Chairmen of WG 3 and 4 who attended this session had the opportunity to present their activities.
- Identification of the organized sessions for delegates who could be interested by one or more of them.
- Information on the Journal of the IASS

### 1.3 Working group websites

We tried to have a homogeneous presentation of the web pages, while keeping their specificities. All IASS members have access to these WebPages. It is anticipated to have a shortened presentation of working groups for non IASS members.

The main sections are:

- In a first set, three sections : "**Mission**", "**Background**" and "**Current Objectives**"
- The second set begins with an information of the last updating, and contains a section on "**Activities**" (the period covers the

activities since the preceding symposium, and includes those developed for the coming symposium until its beginning), and one of “**Future Anticipated Activities**”(The period may cover several years according to the working group project).

- A third set is devoted to “**membership**”: it begins by a “call for joining” the working group. The following list contains only IASS members. An additional list of non IASS members can be attached as document at the end the web page. Since the webpage is not completely visible by non members, several possibilities have been suggested to chairmen so as to make this “call for joining” by other means.
- The two last sections concern “**publication**” and “**links**”. It is possible for IASS members to download documents previously attached by the chair(wo)men as resources, and to benefit of useful links to other websites. Working groups are encouraged to use this possibility.

Every chair(wo)man has the rights for updating the working group webpage, with the possibility to ask for help either the TAC chairman or the secretariat. The IASS website is an ideal tool to distribute information to all members. Working groups are encouraged to send to the secretariat any information that can be published under “News”: all members of the association could have a clear view of the calendar of coming events that are related to Shell and Spatial Structures.

#### 1.4 Activities of working groups

Besides the organization of sessions during the Symposium, activities can include other matters such as:

- Organization of scientific meetings. Some of the working groups hold regular colloquia.
- 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 Kazuo Ishii).

- Preparation of guidelines
- Analysis of real cases.
- Publication of scientific papers in the Journal of the IASS and other international journals.
- Special Issues of the Journal of the IASS.
- Organization of special sessions in other scientific meetings.
- Publication of newsletters.
- ....

#### 1.5 Working group membership

If we read our statutes all members of a WG should be members of the Association.

##### ARTICLE 12

The Executive Council may from time to time create Working Groups as described in article four of the Statutes. Each Working Group shall consist of members of the Association and will be presided over by a Chairman appointed by the President. Each Working Group shall report to the Executive Council in writing once a year. The report of the investigations of each Working Group shall be submitted to the Executive Council who will have the right to approve or disapprove the publication of such report under the auspices of the Association.

Non IASS members who are interested by working groups activities can be accepted. 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 website, reception of the four annual Issues of the Journal of the IASS.

The case of geographical concentration in the working group membership is generally justified by local dominant interest for the field: it is for instance the case for WG 4 “Cooling Towers”, and WG 8 “Metal Spatial Structures” (particularly for earthquakes studies). Financial considerations for the organization of meetings and colloquia also explain this aspect. But all the groups make significant efforts to enlarge their membership: new co-chairing can help this geographical extension of membership, expression of the international character of the association.

## 2. COMMENTS ON WORKING GROUPS REPORTS

Besides the organization of sessions in Shanghai symposium that were presented in section 1.1, some

specific comments may be enhanced for each of the active working groups. Details appear on the website.

<b>WG 1 Tanks and Silos</b> <ul style="list-style-type: none"> <li>• Professor Michaël Rotter could not organize a session in Shanghai.</li> </ul>	Prof. Dr. J. Michael ROTTER (Chair)
<b>WG 3 Cooling Towers</b> <ul style="list-style-type: none"> <li>• Taking advantage of the 2nd International conference on Solar Power Technology ,September 2010, that he organized, Reinhart Harte suggests widening the scope of working group and submits the wording."WG 3 - Cooling and Solar Updraft Towers". This new name was accepted. WG 3 was exempted of organized session for Shanghai Symposium, but will organize one session in London.</li> <li>• Specific action will be developed for extending the membership outside Europe.</li> <li>• Dr.Eng Reinhard HARTE took part to Monday TAC session in Shanghai and presented its working group.</li> </ul>	Prof. Dr.Eng Reinhard HARTE (Chair)
<b>WG 4 Masts and Towers</b> <ul style="list-style-type: none"> <li>• Arrange the 25th meeting in Copenhagen, September 2011.</li> <li>• Encourage the Members of the Working Group to be members of the IASS</li> <li>• Eng. Ulrik STOTTRUP-ANDERSEN took part to Monday TAC session in Shanghai and presented its working group.</li> </ul>	Eng. Ulrik STOTTRUP-ANDERSEN (Chair)
<b>WG 5 Concrete Shell Roofs</b> <ul style="list-style-type: none"> <li>• Helped organize and co-edited a special issue of the J. IASS (Vol. 51, No. 1, n. 163, March 2010) in honor of the centenary of the birth of Felix Candela (co-editor J. Abel)</li> <li>• Posted on this website the now-completed first drafts of Chapters 2 through 6 of the State-of-the-Art Report and began seeking reviews and suggestions from all WG members on them.</li> <li>• Besides the organized session R. Sundaram presented his own works during a plenary session.</li> </ul>	Prof. John ABEL (Chair)
<b>WG 6 Tension and Membrane Structures</b> <ul style="list-style-type: none"> <li>• Organized a WG meeting on "Future issues of Tension and Membrane Structures" for the IASS Symposium 2010 in Shanghai. Dr.Kawabata was invited to talk about material properties of ETFE foil.</li> <li>• Writing a part of cable structures of the section of tension structures in the Jubilee Book of IASS is one of the WG activities</li> <li>• Marijke Mollaert (Blegium) and Ron Shaeffer (USA) were appointed as co-chairs by the President, enlarging the representation of these activities in Europe and USA.</li> </ul>	Prof. Dr. Ken'ichi KAWAGUCHI (Chair)

<p><b>WG 8 Metal Spatial Structures</b></p> <ul style="list-style-type: none"> <li>• The activities of this working group can be summarized with two “key expressions”: buckling and dynamic issues. The WG is finalizing the report for buckling analysis and develops his action for dynamic and earthquake analysis.</li> <li>• This working group was very active during the Shanghai symposium, it is mainly developed in the Asian part of the world. People are more concerned by dynamic Issues in this region.</li> <li>• Co chairing of the WG was confirmed for Professors Toru Takeuchi (Japan), and Su-Duo Xue(China). Professor V. Gioncu resigned before symposium after many years of activity.</li> </ul>	<p>Prof. Dr. Shiro KATO (Chair)</p>
<p><b>WG 12 Timber Spatial Structures</b></p> <ul style="list-style-type: none"> <li>• Ongoing work on “state-of-the-art” report</li> <li>• Specific action will be developed for extending the membership outside Europe.</li> <li>• Professor Minjuan He, who organized the WG session in Shanghai was appointed as co chair by the President</li> </ul>	<p>Prof. John CHILTON (Chair)</p>
<p><b>WG 13 Computational Methods</b></p> <ul style="list-style-type: none"> <li>• Merged Sub-Working Group on Computational Morphogenesis into WG13 and added the members of the former Sub-WG into those of WG13.</li> <li>• Posted on this website the review paper on current state of Computational Morphogenesis published on the International Journal of Space Structure, Vol.25, pp. 75-82, 2010, in a special issue after the joint IAASS-IACM conference in Ithaca, USA, with John Abel as a guest editor</li> <li>• Carlos Lazaro (Spain) and Kai UweBletzinger (Germany) were appointed as co-chairs, and Makoto Ohsaki (Japan) as vice chair during this symposium.</li> <li>• A shortened new name “Computational Methods” was submitted, and will be definitively adopted after dialogue inside the WG.</li> </ul>	<p>Prof. Dr. Hiroshi OHMORI (Chair)</p>
<p><b>WG 15 Structural Morphology</b></p> <ul style="list-style-type: none"> <li>• After the Acapulco International seminar this WG is defining his new scientific policy. Several study groups have been chosen like Deployable and Foldable Structures- Adaptive Formworks- Computation and Geometry.</li> </ul>	<p>Andrew BORGART (Chair)</p>
<p><b>WG 17 Historical Structures</b></p> <ul style="list-style-type: none"> <li>• Current objective of WG17 is documenting the early shell structures in each country.</li> <li>• Coupled activity with other groups is encouraged ; a first work is achieved with WG 5 “Concrete Shell Roofs”</li> <li>• The “Archives of the IAASS : Actors and Projects” is also a field of interest for this Working Group.</li> <li>• The working group is encouraged to organize a session during London Symposium.</li> </ul>	<p>Dr. Görün ARUN (Chair)</p>

<b>WG 18 Environmentally Compatible Structures</b>	Prof. Dr. Ludevit VEGH (Chair)
<ul style="list-style-type: none"> <li>• Preparation of the Proceedings of the 8th Correspondence Seminar dedicated to unification of the theoretical fundamentals and terminology of ECS.</li> <li>• Preparation of the detached WG 18 seminars. The first detached seminar is likely to be organized in Milano by Dr Carlo Monticelli within the SEWC Milano Congress in 2011</li> <li>• Publication of the textbook "Introduction in the theory of ECS" and publication of the Proceedings of the 8th Seminar. The aim of the textbook is to initiate discussion and research on problems of the theory of ECS.</li> <li>• The name "Environmentally Compatible Structures" (ECS) was adopted.</li> </ul>	
<b>WG 19 Temporary Spatial Structures</b>	Eng. Tatsuo MUROTA (Chair)
<ul style="list-style-type: none"> <li>• Work on the draft of the structural design guideline for temporary spatial structures.</li> <li>• Contribute a section to Part II of the IASS Jubilee Book related to temporary spatial structures.</li> <li>• Contribute a presentation to Plenary Panel Discussion on "Temporary and Permanent Structures" for the IASS Symposium 2010 in Shanghai.</li> </ul>	

### 3. CONCLUSION

It appears that this year the first step of the new defined policy for technical activities, organized sessions, has been quite successful. We could this year improve the updating of the website and took advantage from our meetings with the President and the chairs of the working groups. It will be necessary time, the next year, to assess this policy.

It should be noticed that the more recent working groups (Computational methods, Structural Morphology, Historical Structures, Environmentally Compatible Structures, Temporary Spatial Structures), are "transverse" groups. Previous ones were dedicated to specified sub classes of Shell and Spatial Structures. As IASS members we should keep this in mind when we are asked to think on future activities and working groups.

*As chair of this Technical Activities Committee I encourage all working groups*

- To organize specific sessions for the London IASS Symposium in 2011. They

should have done when this report will be published.

- To attract eminent experts,
- To benefit of the possibilities of the website; chairs are invited to update regularly the information
- To extend the scope of their activities beyond session organizations
- To produce state of the art reports, newsletters, scientific papers, guidelines
- To take any the initiatives they consider to be positive
- ...

*As chair of this Technical Activities Committee I encourage all IASS members to participate to working groups*

*See you next year in London!*

*R.Motro*

*TAC Chairman*