**The First Announcement**

**The 10th Innovation Competition in Construction Engineering and Management (ICCEM)**

***1. Background***

The Innovation Competition in Construction Engineering and Management (ICCEM) is a high-level innovation competition, targeting graduates and undergraduates majored in civil engineering and construction management. It is sponsored by Hong Kong Gammon Construction Limited, organized by the Tsinghua University Department of Construction Management, the Tsinghua University School of Civil Engineering, and undertaken by both the Postgraduate Student Union and Student Association of Science and Technology in the Department of Civil Engineering and Construction Management, Tsinghua University.

Since the first competition in 2007, it has been successfully held for nine years. Originated from Tsinghua University, it has become a nationwide competition since 2009. A large number of students from Chinese top universities have participated in this competition. With rich experience, the organizing committee further promoted the 5th competition to an influential international one in 2011, and invited participants from US, UK, Australia, Hong Kong and other countries or regions. ICCEM covers various domains concerning construction engineering and management, such as construction technologies, construction management, laws and regulations, urban planning and management, and urban economics and real estate.

This year is the 10th Anniversary of ICCEM. The organizing committee is committed to enhancing the cooperation with universities and construction companies worldwide to promote the ICCEM into an internationally influential platform of communication and innovation in the field of construction.

***2. Objective***

The purpose of ICCEM is to encourage active innovative practices and inspire more high-level innovative talents in the construction and other relevant fields. It provides opportunities for students to improve innovation skills by taking good advantage of the academic and industrial resources. In addition, it also provides a platform for students worldwide to communicate and share thoughts.

ICCEM encourages the participants to solve construction engineering and management problems using multi-disciplinary knowledge, including engineering, construction management, urban planning and management, economics and law, humanities and social sciences, computer technology and etc.

***3. Organization***

The organizational structure of this year’s competition is similar to that of the 9th competition, which includes three departments, namely the steering committee, reviewing committee and the organizing committee.

The steering committee consists of industrial experts from Gammon and professors from universities, and is responsible for determining the topic of ICCEM and offering assistance and guidance to participants on research directions and methods.

The reviewing committee, including the preliminary review committee, the final competition committee and the financial supervision committee, is responsible for ensuring the quality of topics, the fairness in assessment, the transparence in financial operations, as well as the resolution of disputes. The preliminary review committee consists of teachers from relevant departments of universities participating in the competition. The final competition committee consists of well-known experts from the academia and Gammon. The financial supervision committee consists of teachers from School of Civil Engineering of Tsinghua University.

The members of the organizing committee are selected from the Postgraduate Student Union, Student Association of Science and Technology in the Department of Civil Engineering and Construction Management, and students from other universities. Sub-committees will be set up in other universities, which are responsible for promotion, communication, coordination, event services, administration, finance and other related work. The organizing committee consists of four divisions, namely the division of information publication, division of coordination, division of competition organization, and division of administration. The division of information publication will be in charge of competition promotion and information collection. The division of coordination will be responsible for coordinating the work of the sub-committee as well as contacting the reviewing committee to organize the preliminary evaluation of participants’ works. The division of competition organization is responsible for the organization of the finals and the prize award ceremony. The division of administration is responsible for providing support for other divisions.

***4. Theme***

**The Future of City and Construction Engineering**

With the development of the construction industry and urbanization, the economy boosts and people’s living standard improves. Nonetheless, coming along with the prosperity are problems such as ecological environment problems and energy crisis. These issues are actually threatening the future development of the human civilization. People-oriented and sustainable development are far-reaching topics concerning urbanization and construction engineering.

In order to encourage students to ruminate on the above development trend, we call for radical ideas for future developments and innovative solutions for the current urbanization and construction problems. The theme covers but is not limited to:

* Sustainable development
* Smart city
* Resilient city
* Off-site construction
* Smart construction and robotics
* Application of emerging technology
* Green construction
* Safety, health, environment and well-being

***5. Time and Schedule***

This competition will last from **January to June 2017**.

|  |  |
| --- | --- |
| Time | Content |
| Before Mar.15, 2017 | Registration |
| Before Apr. 15, 2017 | Preliminary work submission |
| Apr.16 - Apr. 30, 2017 | Preliminary evaluation |
| May.1 - Jun.29, 2017 | Work improvement and re-submission |
| Jun.30, 2017 | Final competition and awards ceremony |

* **Registration deadline:** 24:00, 15/3/2017.
* **Preliminary work submission deadline:** 24:00, 15/4/2017.
* **Final work submission deadline:** 17:00, 29/6/2017.

***6. Prizes***

|  |  |  |
| --- | --- | --- |
| Awards | Quotas | Amount (before tax) |
| 1st Prize | 1 | ￥10,000 |
| 2nd Prize | 2 | ￥7,000 |
| 3rd Prize | 3 | ￥4,000 |
| 4th Prize | 6 | ￥2,000 |
| 5th Prize | Other qualified teams in the Preliminary Review | ￥500 |

**Notes:**

(1) This competition follows the principle that “quality comes before quantity” and prizes may not be given if there is no competent work.

(2) Awards of more than ￥800 are subjected to taxation at the winner’s own expense.

(3) For works that reach a relatively higher level (1-2 groups), we will recommend them to apply for the CIB (International Council for Research and Innovation in Building and Construction) Student Research Fund to finance their further research, or to enter the Construction Industry Council’s innovation competition.

***7. Requirements for Participants***

(1) Graduate and undergraduate students officially matriculating in a university in China or overseas are welcomed to participate in this competition. There is no restriction on the students’ majors. Students should participate as teams of two to six members. Teams are encouraged to collaborate with and seek support from the industry.

(2) The teams shall designate a team leader who will be responsible for communication and coordination with the organization committee. Each team may have up to 2 junior engineers from the industry as team members. The junior engineers may not serve as the team leader.

(3) Team formation follows the principle of free combination, and we encourage joint cooperation between universities. However, each student can only participate in one team, and each team can only submit one work.

***8. Preliminary Evaluation***

Preliminary works **can be presented either in Chinese or English.** When you submit your preliminary work, **a short video (3-5 minutes) which illuminates the idea and achievement is recommended.**

The first round of evaluations will be carried out by the preliminary review committee composed of teachers from participating universities. After reviewing all works, the committee will give a rank to all works. **Based on the results provided by the reviewing committee, the organization committee will choose 12 groups to enter the final competition. Other qualified works will be given a Participation Award.**

The review process will be carried out anonymously. Reviewers will make their assessment according to the principle of fairness and impartiality. If the reviewers’ scores on the same work show some substantial deviation, the organizing committee will remove the score with the maximum bias or carry on a re-evaluation.

Preliminary score results will be provided to all participating groups. The review of works is based on the following criteria: works’ innovation, enrichment of content, expressions of results. Specific criteria are as follows:

**(1) Innovation**

* The scope of topics could vary, but should focus on innovation
* Question raised is new, or view point towards the question is unique
* Research methods and problem solutions are new

**(2) Content enrichment**

* Rigorous data, analysis, reasoning and other aspects
* Reliable data and underlying data sources
* Reasonable research and analysis methods

**(3) Expressions of results and paper writing**

* Expression is logical with concise language and format
* Results are expressed in a diverse, innovative, and creative way

**Table 1 Standardized score table for reference**

|  |  |  |
| --- | --- | --- |
| Innovation scores | 100 | Topics of vitally important innovation and strong practical value, using unique perspectives to analyze problems and strongly creative research methods or innovative solutions |
| 80 | Topics of important innovation and some practical value, with its research methods or solutions of a certain creativity. |
| 60 | Topics of some practical value, using appropriate research methods or solutions  |
| 40 | Topics that not innovative, lack of practical value, and solution can’t handle the question well |
| Content enrichment scores | 100 | Thorough and systematic literature study, using new data, data and documentation can offer good support to research methods and the participants' view |
| 80 | Relatively systematic literature research, data is real, proper, and can support the research methods and the participants’ view. |
| 60 | Conducted some literature study, has certain data to support participants’ view |
| 40 | Not enough literature study, lack of data or examples to support participants’ view. |
| Expression scores  | 100 | Problem-solving process is logical and concise; the results are expressed in a clear and diverse way, with concise language and format |
| 80 | Problem-solving process is logical; the result is expressed in a clear and appropriate way |
| 60 | Problem-solving process is rational, the result is expressed with fluent language and correct format  |
| 40 | Problem-solving process is lack of logic, and the expression is inappropriate.  |

The highest score is 100 points. In order to encourage the players to focus on the innovation of research topics, the comprehensive score will be formed as:

**Total score = innovation score × 40% + content enrichment score × 30% + expression scores × 30%**

***9. Final Competition***

The final works, presentation documents, defense, group presentation and all other related activities **must be in English.**

The final results are calculated based on the final judges’ score. And the judges’ score will be based on three aspects: innovation, rigorousness, presentation performance.

**(1) Innovation**

* Topic is innovative, or provides intelligent insights and knowledge
* Topics have certain research value
* Unique point of view
* Research methods and solutions to the problem are innovative

**(2) Rigorousness**

* Work shows evidence of detailed data and rich literature reviews, evidence-based perspective
* Research methods are appropriate
* Process of the study is logical and well-articulated

**(3) Presentation performance**

* Presenting the research results in a diverse way
* Presenting in a logical and concise way
* Answering questions directly and well-founded.
* Proper time management

**Total score = Innovation score × 60% + Rigorousness score × 20% + Presentation scores × 20%.**

The organizing committee is responsible for the accommodations and meals of competitors in the final stage. **But the travel expenses can’t be reimbursed.**

***10. Research Funding***

(1) In order to encourage participants to carry out innovative practice and improve the quality of works, ICCEM has established a special research funding to support the research of competition works.

(2) The participating groups can apply for the fund for research needs and submit a research plan. The review committee will determine whether to provide financial supports (RMB 500 -2000 yuan) based on an integrated evaluation of the significance, value and feasibility of the project.

(3) Teams that have received the funding shall carry out the research according to the research plan and timely submit periodic reports.

***11. Works and Intellectual Property***

The competition does not accept works or content that has already won the competition previously. Competition participants and Gammon Construction Corporation Limited shall share the ownership and intellectual property of all submitted works.

ICCEM do not accept works that have already been awarded before.

***12. Registration***

If you are interested in the competition, you could register your information through either of the two following ways:

* Through the website:

Please go to the website of the competition before Mar. 15, 2017: http://summerschool.pm.tsinghua.edu.cn/. You will find the page for registration.

* Through email:

Please complete the registration form in appendix and submit to iccem\_thu@outlook.com before Mar. 15, 2017

* Through QR code:

You can scan the following QR code and complete the questionnaire before Mar. 15, 2017 to register:



You will receive a confirmation in 24 hours after you submit your registration information.

The 10th ICCEM Organizing Committee

Jan. 13, 2017