First Announcement for

2019 Harbin Institute of Technology International Ice and Snow Innovation Design and Construction Competition

Harbin Institute of Technology (HIT), Harbin, China

2019 Harbin Institute of Technology International Ice and Snow Innovation Design and Construction Competition

1 Theme of the Competition

Ice and snow architecture originated in Arctic areas. It is a natural part of the polar culture and a special cultural product of the interaction between human beings and the polar environment. A deeper understanding of polar culture, regional materials and techniques can lead to new innovations and possibilities that will contribute to sustainable developments. By using ice and snow in cold climate area, there will be no damage to the environment. Contemporary research in technology, industry and the culture of ice and snow architecture will lead to innovations in material, structure, form, construction method and functionnal application. The result will be an important contribution to the infrastructure for the ice-snow industry and culture in cold regions.

To stimulate academic research and to strengthen cultural exchanges and promote academic cooperation in snow and ice architecture HIT, UArctic and the IASS Working Group 21 have organized the *2019 HIT International Ice and Snow Architecture Innovation Design and Construction Competition.*

The competition will be held in December 2019 on the campus of HIT, as one of the centennial celebration activities of HIT. The theme of the competitions is: contemporary Arctic Ice House design based on Arctic traditions and innovation in ice and snow construction. The competition invites outstanding talents and professionals in relevant fields of ice and snow architecture to realize a small-sized dwelling. The following aspects must be taken into account:

- environmental impact;
- cultural heritage;
- technological innovation

2 Topic of the competition

Polar Dwelling – Design and Construction Competition of Contemporary Arctic Igloos

3 Design principles

1.Respecting the construction history of polar ice and snow architecture

2.Expanding the technological innovation of ice and snow architecture

3.Adapting the special polar climatic environment

4.Giving functions to ice and snow architecture. After the competition, the entries can be used for practical purposes.

5.Efficient construction method

4 Site location

The site is located in the campus of HIT. (The construction land is chosen according to the actual situation at the time of construction.)

The size of each team's construction site of is 12m×12m.

5 Participants

It is proposed to invite 8-10 teams, each team consisting of 5-10 students and 1-2 instructors.

Firstly, participating teams must submit their design proposals. From these proposals ,6 to 8 excellent proposals will be selected for the actual construction.

6 Design requirements

1. Architectural form: The floor plan of the architectural project should be within the range of 10m×10m. Architectural form requires novelty, unique beauty, embodying the charm of ice and snow architecture, reflecting the current trend of the times and adapting to the theme of polar environment.

2. Architectural space: The design works should have usable space inside, which people can enter for a visit experience, and it should also meet certain indoor living conditions. Designers can arrange specific functions according to their own design intentions.

3. Architectural structure: In the process of design, attention should be paid to the cooperative design of architecture and structure, the rational expression of architectural image, and the safety and rationality of the structure.

4. Architectural materials: To use ice, snow and ice/snow-based composites.

5. Architectural construction: There are no specific restrictions on construction methods,

but all construction schemes should be guaranteed to cause no damage to the site and carried out at a low cost. Each college construction team has a fund of 50,000 Chinese yuan($7200).

6. Team members: Each team consists of 1-2 instructor(s) (reimbursement of round-trip tickets, provision of board and lodging)， and 5-10 students (provision of board and lodging).

7 Work requirements

1. The design proposal must meet the following requirements: overview of conceptual ideas, drawing of *plans, elevations and sections*, digital model, structural analysis, construction scheme and overall design description.

2. The architectural work design must meet the requirements of innovation and integrity.

3. The structure work design must meet the requirements of rationality and reliability.

4. The design results are provided in the form of A3 layout drawings (PDF format) and model electronic documents.

8 Entry requirements

1. Applicants can participate alone or as a team with 5-10 people. Team leader and advisors (1-2) should be marked when enrolling.

2. There is no limit to the number of design submissions that each team can submit.

3. All works should meet the theme of the competition theme and the requirements of the construction works.

4. When submitting work, please submit accurate personnel information, ranking, contact information, and participating units (allowing different universities to participate in a consortium).

5. If invited to participate in the field construction, please provide the consent letter of the university or institution.

9 Financial support

The organizer will provide construction funds about ¥_50,000 to each college construction team for teachers' round-trip ticket board and lodging and students' board and lodging. Other expenses should be paid by oneself.

10 Registration and submission

This activity adopts the combination of invitation and free registration.

Interested individuals or teams, please download the registration form in the public mail of

the Construction Camp－IAA_HIT@163.com（password－iaahit）. After filling in the form, please send it to the Mailbox of the Construction Festival Organization －Ice_Organization@163.com before August 30th, 2019, and get the participation number of the Construction Festival. (Note: Please do not delete the registration form in the public mailbox of Construction Camp.)

Other submissions are as follows:

1. Drawings: Each participating team should submit relevant technical drawings to express the design results, so as to facilitate the organizer's review of construction possibilities. The deadline for submitting the schedules of plan drawings, construction and visits is September 30th, 2019.

2. Information submission: Each participant's personal introduction should be attached to the end page of drawing brochure.

3. Submission form: The above results will be compressed into a document, named exhibition number responding to registration, and sent to the mailbox of the organization of the construction Festival activities.

4. After being reviewed by the accrediting and validating agency, the excellent works will be selected to be constructed and exhibited in the ice-snow architecture design exhibition.

11 Contact information

1) Competition Inquiry and Information Reading

Public email: IAA_HIT@163.com， Password: iaahit

Wechat Official Accounts: ArchIce

Contacts：email: Ice_Organization@163.com

Peng Luo: TEL: +8613936243408

Yuxin Nie: TEL: +86 13199089866

2)Registration and submission of works

Construction camp offical email: Ice_Organization@163.com

12 Schedules5

1. Phase 1 (Registration Phase)

Registration Deadline: August 30th, 2019

2. Phase 2 (Scheme Design Phase)

Submission Deadline: September 30th, 2019

Questions related to the competition will be responded to via e-mail. Please pay attention to checking email replies and updating and publishing information related to construction and operation.

3. Phase 3 (Technology Deepening and Construction Preparation Phase)

(1) Review time: October 7th-October 20th, 2019

(2) Release time of competition results: October 20th, 2019. After the publication of the selected works, relevant teams or individuals should contact the organizers in time and communicate the follow-up details.

(3) Technology deepening time: October 21th-December 20th, 2019

4. Phase 4 (Construction Phase)

(1) Time: December 16th-22th, 2019 (or December 28th, 2019-January 5th, 2020)

(2) Location: The southwest square of the library of HIT, No.92 Xidazhi Street, Nangang District, Harbin City, Heilongjiang Province, China.

(3) Remarks: The selected works are actually constructed, and the specific details are determined by communication with the organizer.

5. Phase 5 (Achievement Exhibition and Closing Ceremony)

(1) Closing Ceremony Time: December23th, 2019

(2) Exhibition Time: December24th, 2019–February 2020

(3) Location: The southwest square of the library of HIT, No.92 Xidazhi Street, Nangang District, Harbin City, Heilongjiang Province, China.

(4) Remarks: Certificates for excellent works will be awarded at the closing ceremony of the Construction Festival.

13 P*rize and award*

After being reviewed by the accrediting and validating agency, the works will be selected and evaluated comprehensively to produce the final awards.

1st Prize (1team) ($_1,500 and certificate)

2nd Prize (2teams) ($_1,000 and certificate)

3rd Prize (3 teams) ($_500 and certificate)

Excellence Award (several teams) (Certificate)

14 Series of Activities

1) Series of Academic Reports: Polar Environment and Ice-snow Construction

2) International Ice-snow Construction Camp-Polar dwell

3) Ice and snow architecture design exhibition

Sponsors：Harbin Institute of Technology (HIT), UArctic, the Working Group 21 of the International Association of Thin Shells and Spatial Structures（IASS Working Group21）

Organizers: School of Architecture of HIT, UArctic HIT Training Center

Note: Previous activities of the construction camp can be found in the appendix——A Review of Past Works