

**Invitation for Expression of Interest (EOI) from Eligible  
Architects/Architectural Firms**

**TO**

**Design & Drawing for the "Research Station of Precision and Smart  
Agriculture" and "Underwater Robot Test Facility" at IISc,  
Chellakere Campus**

**Ref No – IISc/ME/EOI-01/2023-24**



**Department of Mechanical Engineering  
Indian Institute of Science, Bangalore – 560 012**

## **I. Background:**

The Indian Institute of Science (IISc) invites an expression of interest from Architects and Architecture firms to participate in an architectural design competition to design the "Research Station of Precision and Smart Agriculture" and "Underwater Robot Test Facility" at IISc, Chellakere Campus.

The Indian Institute of Science (IISc) is renowned for pioneering research and academic excellence in science and technology. IISc's commitment to interdisciplinary research has led to groundbreaking discoveries in fields ranging from engineering and biotechnology to fundamental sciences. With an intent to expand IISc's research capabilities and contribute significantly to India's scientific advancements globally, IISc established its new campus in Challakere in 2018. This 1500-acre second campus is 220 km from Bengaluru, in Challakere Taluk of Chitradurga District, Karnataka. The location is an isolated and conducive environment, away from urban disturbances, allowing for sensitive scientific investigations and experiments. This new campus aimed to harness the potential of this unique setting to facilitate interdisciplinary studies and provide state-of-the-art facilities for probing the depths of space, exploring fundamental physics, and advancing scientific frontiers.

The IISc Department of Mechanical Engineering is dedicated to advancing the objectives of the institute, and it led the way in the development of two cutting-edge research facilities at the Challakere campus: the "Research Station of Precision and Smart Agriculture" and "Underwater Robot Test Facility". The agricultural research endeavors will encompass open fields and polyhouses dedicated to rigorously testing precision agriculture technologies. These facilities will also include controlled growth environments for plants and cutting-edge imaging infrastructure, ensuring comprehensive exploration and development in this field. On the other hand, the Underwater Robot Test Facility will be designed for the development, meticulous testing, and live demonstration of a diverse array of manned/unmanned surface/submerged robotic subsystems. A specialized Deep Water Test Facility will also be established to support and advance deep-sea research and exploration.

This will be a single-stage competition where the conceptual designs submitted by the shortlisted Architects/firms will be evaluated, and one Architect/Firm will be selected.

## **II. Eligibility Criteria:**

- a. Registration- The Architect should be registered with the Council of Architecture, India.
- b. Experience- The Architect/ Architectural Firm should have at least 5 years of experience overall and a minimum of 3 years of experience working on similar assignments with academic institutions and allied agencies as of 31/12/2023.

- c. Past Assignment- The Architect/Architectural Firm must have at least one completed project handled in the past equivalent to or above a budget of **Rs 2 crore** in the last three years. IISc can demand proof of Occupancy Certificate if necessary.
- d. Professional Fees- Applicant should have collected Professional fees of at least **Rs. 5 Lakhs** per year in the last three financial years.
- e. Declaration for Transparency- Applicant should not be under a declaration of ineligibility for corrupt and fraudulent practices issued by Govt. of India/ State Govt.

(Please submit self-declaration format as per Annexure)

### **III. Project Details:**

#### **A. Research Station of Precision and Smart Agriculture**

- a. Development of Open field (9000 square feet), Controlled Nutrient delivery facility (8000 sq. ft.), Poly houses (2000 sq. ft.) and Lab space (1000 sq. ft) for testing out various precision agriculture technology.
- b. Open field: To be flattened and readied for plant growth, laying topsoil layer if needed, Irrigation facility, to be fenced for protection from cattle.
- c. Controlled Nutrient delivery facility: Concrete flooring, Retractable rainwater shelter, to accommodate about 300 Mini lysimeters with water, power, and data connections.
- d. Poly houses: One polyhouse is to be built as per design available with the faculty in charge. (The available design can be shared upon request by the firm)
- e. Lab space: 1000 sq. ft. (25 ft x 40 ft, RCC roof) and should be designed in such a way that all the research stations are seamlessly accessible.
- f. All these facilities should be feasible/accessible to install Drone-based irrigation and imaging systems, Sensors (like soil moisture), and IOT-based solutions for distributed sensing.
- g. The expected cost of the project is approximately Rs. 50 lakhs.

#### **B. Underwater Robot Test Facility**

- a. Warehouse type facility of about 11,000 square feet housing a large water tank, small water tank, measurement rooms, and a high-pressure testing facility room.
- b. Large water tank (2925 square feet, 20 ft deep) equipped with water flow generation capability (~2 m/s) for simulating currents/disturbances.
- c. Small water tank (500 square feet, 5 ft deep) for turbidity testing and control

- d. Separate water tank measurement room
- e. Separate room for high-pressure test facility for simulating deep open environments.
- f. The expected cost of the project is approximately Rs. 2 crores.

**IV. Scope of Work:**

- a. To prepare sketch designs/presentation drawings (Both Research Station of Precision and Smart Agriculture and Underwater Robot Test Facility), making revisions as per requirements of the Mechanical Engineering Department till sketch designs are finally approved by the competent authority and making preliminary estimated cost.

**V. Criteria for Shortlisting:**

The shortlisting of architects/firms will be done by a committee set up by Competent Authority, IISc.

The criteria used for evaluation would be:

Sl. No.	Criteria	Weightage
<b>1.0</b>	<b>Experience</b>	<b>20</b>
1.1	Number of years in architectural practice	06
1.2	Past Assignments- experience in dealing with similar Projects listed under V(d)	14
<b>2.0</b>	<b>Technical Aspects</b>	<b>60</b>
2.1	Expertise and experience of key personnel (Separate list of permanent staff with proof of EPF Payments and Temporary staff to be enclosed along with educational qualification details)	20
2.2	Quality of past projects relevant to the current project listed under V(d)	40
<b>3.0</b>	<b>Financial strength</b>	<b>20</b>
3.1	Professional fees collection figure for last three years	20

**VI. Documents required for validating eligibility criteria**

- a. Registration- Certified copy of valid registration with the Council of Architecture, with names and addresses, qualifications and registration number allotted by CoA.
- b. Office Location- Certified copy of the Registration of Practice or other valid relevant document (to be specified by Architect/Architectural firm),

- c. Experience- Certified copy of valid registered partnership deed OR Certified copy of valid JV agreement, if applicable.
- d. Past Assignment- Details of past projects equivalent to or above Rs. 2 crore in the last three years. These projects should involve design of academic campuses, research labs, corporate R&D buildings.

EOI with all enclosures should be emailed to [chair.me@iisc.ac.in](mailto:chair.me@iisc.ac.in) with a copy to [office.me@iisc.ac.in](mailto:office.me@iisc.ac.in) or posted to the Department of Mechanical Engineering, Indian Institute of Science, Sir C V Raman Road, Bengaluru – 560012 on or before **5 p.m. on Jan 23, 2024**. Late submissions will not be considered.

**IISc reserves the right to reject any/or all the EOIs without assigning any reasons whatsoever.**

Annexure

Self-Declaration Format

Ref. No.:

Date:

To,  
The Registrar  
Indian Institute of Science

With reference to my/our expression of interest to IISc, it is hereby declared that I/ (name of firm) was not declared ineligible for corrupt & fraudulent practices either indefinitely or for a particular period by any Govt or other agency.

I/ (name of firm) also declare that there are no contractual restrictions or legal disqualifications or other obligations which will prohibit from me/us entering this bid and each and every one of the statement and particulars contained herein are correct.

Signature of the Applicant

Date:

Place:

Seal