National Award Competition for Students 2025

For the best Innovative use of Steel in Architecture

ARCHITECTURAL DESIGNING OF A STEEL DISASTER RELIEF SHELTER, SUNDARBANS

Institute for Steel Development & Growth (INSDAG)

Announcement for NACS (A) 2025

NATIONAL AWARD COMPETITION FOR STUDENTS (2025) FOR THE BEST INNOVATIVE USE OF STEEL IN ARCHITECTURE

THEME: ARCHITECTURAL DESIGNING OF A STEEL DISASTER RELIEF SHELTER, SUNDARBANS

THE INSTITUTE

Institute for Steel Development and Growth (INSDAG) is a non-profit making, member-based organization established at Kolkata by the Ministry of Steel, Govt. of India and the major steel producers in the country. The Institute primarily works towards the development of advanced design methodologies and technical marketing by expanding applications of steel in different segments, upgrading skills and know-how, creating awareness amongst potential users, providing efficient steel-usage technology /design aids / teaching aids, upgrading skills/ know-how, disseminating steel related information / database, establishing intimate industry-university interface and communicating the benefits of steel vis-à-vis other competitive materials, etc. To promote steel usage in India, the Institute has identified various projects / thrust areas under the direction of its Executive Council.

THE MISSION

To work in unison with all the stakeholders in the Steel Industry so as to evolve ways & means for more efficient use of steel and provide optimum value to the customer.

THE OBJECTIVE

To create interest among the students of Architecture in using steel as a medium of their architectural expression and in exploiting numerous advantages of structural Steel as a material of construction, the Institute organises a ***"National Competition for Students for the Best Innovative use of Steel in Architecture"*** as a part of its Industry-University interface. Starting from the year 1999-2000, the Institute is arranging an interesting and exciting competition every year for the students of Architecture all over India with a view to recognizing and rewarding the talents of budding Young Architects of tomorrow for ***"Excellence in Steel Architecture"***.

THE THEME

The Theme of the competition for the year 2025 is **ARCHITECTURAL DESIGNING OF A STEEL DISASTER RELIEF SHELTER, SUNDARBANS**

THE PRIZES:

1st Prize	**:**	**Rs. 75,000/-**	**+**	**Certificate**
2nd Prize (2 nos.)	**:**	**Each Rs. 50,000/-**	**+**	**Certificate**
3rd Prize (2 nos.)	**:**	**Each Rs. 30,000/-**	**+**	**Certificate**

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ELIGIBILITY

The "Competition" is open to all first year to final year UG & PG Architecture Students from any AICTE / COA approved University / Schools of Architecture in India.

- **UG Students: Team of maximum 4 (four) students in the team**
- **PG Students: 1(one) PG + maxim. 3(three) UG students or, 2 PG students in one group**

Students from Schools of Design in India may also participate.

Students from different colleges may form groups but in such case the colleges should be from same zone

THE SELECTION

Four Zonal Selection Committees (one each for East, West, North & South Zone) consisting of renowned Architects and Faculties will make the Zonal Ranking (and Screening) of Entries at each Zone. In the ***Zonal Round***, max. 16 (sixteen) best Entries will be selected (preferably 4 numbers from each Zone) based on the Zonal Ranking of the proposals, as per the criteria formulated by the Committee.

The participants of 16 short listed entries will be duly informed and called to Kolkata to appear before the ***Central Selection Committee*** in the ***Final Round*** of the Competition to display and present their design entries around ***February 2026***. *The detailed programme will be intimated later to all concerned. The top five Entries will receive the Awards.*

ZONAL COORDINATORS:

EAST ZONE [Assam, Bihar; Jharkhand; Odisha; West Bengal; Chhattisgarh; Tripura; Meghalaya, Manipur, Mizoram, Nagaland, Arunachal Pradesh, Sikkim]
Prof. (Dr.) Sumana Gupta,
Department of Architecture and Regional Planning,
Indian Institute of Technology Kharagpur,
Kharagpur, West Bengal - 721302
Mobile: 9433729054
E-mail: sumana@arp.iitkgp.ernet.in

NORTH ZONE [NCR; Himachal Pradesh; Haryana; J&K; Punjab; Uttarakhand; Uttar Pradesh; Madhya Pradesh]
Prof. (Dr.) Mahua Mukherjee
Head, Department of Architecture & Planning, Joint Faculty,
Centre of Excellence in Disaster Mitigation and Management,
Indian Institute of Technology Roorkee
Roorkee, Uttarakhand, India - 247667
M: 9411500150
E-mail:mahuafap@iitr.ac.in

SOUTH ZONE [Andhra Pradesh; Telengana; Karnataka; Kerala; Tamil Nadu, Puduchery]
Prof. (Dr.) Gundu Sai Sanath
School of Architecture,
Reva University, Bangalore 560064
M: 9490272640
E-mail: saisanath.g@reva.edu.in,
INSDAG_NCSA2021southzone@reva.edu.in

WEST ZONE [Goa; Gujarat; Maharashtra ; Rajasthan]
Prof. (Dr.) Bhawana Vasudeva
HOD, Department of Architecture
The Maharaja Sayajirao University of Baroda,
Pratapgunj, Vadodara, Gujarat-390002
M: 9898022734
E-mail: bhavna.vasudeva-archi@msubaroda.ac.in

GENERAL RULES:

1. Each participating group is required to fill in the attached "Expression of Interest" (EOI) form in soft format for participation.
2. The participating students are required to enrol themselves as student member of INSDAG before submission of entries with student membership fees of Rs. 1000/- for each participant of the group.
3. Students who have already been enrolled as members of the Institute should mention their membership number only in the EOI form and need not pay any further membership fees.
4. Newly admitted PG students who had been INSDAG members while in UG need not to pay the membership fees again.
5. There is no limitation of the numbers of participating groups from any Institution.
6. Originality of work is essential, and the application will be disqualified, if found otherwise.
7. The decision of the Selection Committee is final and binding. Canvassing of any kind will lead to disqualification.
8. Family members / relatives of Selection Committee / INSDAG Staff are debarred from taking part in this competition.
9. All the entries / proposals received by INSDAG at all stages of the above competition shall be treated as property of INSDAG. However, all the drawing sheets, documents & models received in hard format will be returned to the teams after the final round is completed.
10. INSDAG will not take any responsibility in case of missing of any documents /communications (if any) from any side while in transit.
11. Student Membership fees once received by INSDAG against registration in this competition shall not be refunded for reason(s) whatsoever.
12. Outstation candidates appearing for the final round of the competition in Kolkata will be reimbursed with to-and-fro ordinary AC 3-tier sleeper class / AC Chair Car fare by the shortest route on production of proof of travel. Accommodation in Guest House / Hostel will be organised by INSDAG depending upon availability. **However, any Guidelines regarding assembling etc provided by the Government will prevail.**

DELIVERABLES & SUBMISSION:

Visit the link https://forms.gle/LPoJ6rGFgR7o2j6P6 for online registration and payment.
Or, the participants are invited to send their "**Expression of Interest" (EOI)** in soft format by email to **insdagindia@gmail.com**
The **membership fees of Rs 1000.00** for each participant by cheque may be dropped in the nearby drop box of UCO Bank/Internet Banking payable to INSTITUTE FOR STEEL DEVELOPMENT AND GROWTH, Kasba Branch, 170 Shantipally Chakraborty Para, Kolkata 700107.
S/B a/c No.- 08370100004683, IFSC- UCBA0002081

The participants are invited to send their *entries (drawings & report) to respective Zonal Coordinators and INSDAG within the date of submission of entry.*

EACH ENTRY SHOULD BE EMAILED IN SOFT FORMAT IN PDF (all documents), less than 25mb/email, in case multiple emails-should have a continuity like Part-1, 2 etc, to be SENT FROM THE SAME EMAIL ID.

HARD COPY NOT REQUIRED IN ZONAL EVALUATION
The entries (all documents) should be in pdf format and should contain the following:

- A self-declaration by the applicant(s) certifying the originality of the work
- A report - 8 pages (maxm.) A4 size (inspiration, case, idea exploration, material palette, concept)
- Drawings should be in appropriate scale (Preferably 1:500, 1:200, 1:100) and should contain
- Perspective View of the structures
- Conceptual Drawings
- Presentation Drawings
- Elevations of major structures
- Sections of major structures
- Details of steel used area
- Drawings to be self-sufficient, easily understood.
- Drawings in suitable scale – 6 nos. (maxm.) A1

FOR FINALISTS ONLY:

Additionally, the followings are required:

- A physical 3D model in suitable scale
- in software a walkthrough to exhibit the design detailing and overall form and PowerPoint presentation on the project

FINAL ROUND:

Each team will display their drawings in hard format, models at the venue, which will be evaluated personally by the Central jury members via personal interviews

This will be followed by an open presentation where the project may be explained by walkthrough and power point presentation (ppt within 10 slides). Duration: 20 mins (15 mins for ppt and walkthrough, 5 mins for Q & A)

DESIGN THEME:

ARCHITECTURAL DESIGNING OF A STEEL DISASTER RELIEF SHELTER, SUNDARBANS

Disaster Relief Shelter is designed to provide rapid, secure, and temporary housing solutions in the aftermath of natural disasters or emergency situations. Constructed using durable, weather-resistant materials, this shelter offers immediate protection from weather conditions like rain, wind, or sun, ensuring safety and comfort for displaced individuals. The modular and scalable design allows for quick assembly and adaptability to different environments, making it ideal for use in areas affected by floods, earthquakes, or other catastrophes. Easy to transport, set up, and maintain, this shelter is a practical solution for disaster relief operations.

The plain land on which the relief shelter is located nearby on main road at Sundarbans, South 24 parganas, West Bengal.

- Individual units to large-scale community shelters, we can meet any need.
- The shelters offer a safe haven in the face of adversity.
- Units serve various purposes, from housing to medical centers and command posts.
- Local climatic conditions shall be considered in order to provide structure affected by flood, cyclone or other catastrophes.
- Garbage Bins of suitable size at proper locations shall be provided.
- Proper drainage arrangements in the shelter shall also be made so that water do not stagnate.
- Use of solar energy in the shelter shall be explored for lighting of important places to save electrical energy

DESIGN REQUIREMENT

Project Objectives

- Provide safe, durable, and quickly deployable shelters for disaster-affected communities.
- Ensure resilience to cyclones, flooding, and storm surges.
- Promote modular and scalable design using steel for structural strength.
- Address local cultural practices, including joint family systems, cooking patterns, and livestock protection.
- Minimize environmental impact in the Sundarbans' sensitive mangrove ecosystem.

Structural and Material System

- **Primary Structure:** Light-gauge steel frame (corrosion-resistant)
- **Flooring:** Raised platform of galvanized steel deck or bamboo mat over steel frame
- **Roofing:** Sloped metal sheets with insulation and overhangs for rainwater harvesting
- **Wall Panels:** Steel sheet cladding or insulated composite panels (PUF), optionally bamboo/jute reinforcement for local adaptation
- **Foundations:** Steel pile or screw foundations suitable for wetland soil

Key Design Considerations

- Elevated plinth or stilt structure (minimum 2.5–3 m above ground)
- Cyclone- and flood-resilient steel frame
- Passive ventilation and thermal comfort
- Lightweight and corrosion-resistant materials
- Locally appropriate form and culturally sensitive spatial layout
- Modular design for rapid assembly and future scalability

Environmental & Climatic Integration

- **Ventilation:** Cross-ventilation with operable louvered windows
- **Lighting:** Daylighting through translucent roof panels
- **Cooling:** Passive stack ventilation and raised floor cooling
- **Resilience:** Wind-resistant bracing, flood-safe height, rust-proof joints
- **Sustainability**: Use of solar panels, rainwater harvesting, and eco-sanitation

Services

- **Water:** Rainwater harvesting with filtration for drinking & greywater use
- **Sanitation:** Eco-toilets or bio-toilets, decentralized wastewater systems
- **Energy:** Standalone solar energy units with battery storage
- **Waste:** Segregation and composting for organic waste; local collection system

Site Planning Guidelines

- **Orientation:** Maximize shade and airflow
- **Clustering:** Units arranged around courtyards to promote community
- **Accessibility:** Raised ramps, wide walkways
- **Disaster Access:** Emergency access routes for boats and vehicles
- **Vegetative Buffers:** Mangrove-compatible planting for erosion control

Other Facilities:

- **Medical Clinics:** The goal of medical clinics is to provide temporary medical services so that people who are sick or hurt in affected areas can get better.
- **Command Centers:** Command centers are operational hubs that make it easier for rescue and assistance efforts all over to work together smoothly with local authorities, international NGOs, and communities to understand the specific needs and challenges of each situation.
- **Storage Units:** The most important things that should be kept in storage boxes to make sure they get delivered safely are food, water, and medical supplies.
- **Classrooms:** It is important to give kids temporary places to learn so that they can keep up a regular learning situation.
- **Kitchen Units:** People in disaster zones should use kitchen units to facilitate group cooking and ensure they have access to the food they need.
- **Sanitation Facilities:** To meet public health standards, sanitation centers should have things like portable toilets and other facility.
- **Temporary Offices:** Temporary offices are home to administrative teams that are responsible for planning and allocating resources.
- **Community Hubs:** Community hubs are places where people who have been touched by the disaster can gather to talk to each other and get emotional support.

OTHER DETAILS:

The details about the site, development plan, sect

- DETAILED AREA PROGRAM – **Annexure I**
- SITE PLAN – **Annexure II** (Select any one Site A to E)

Site A- https://maps.app.goo.gl/Ka8szRgR22iKkcCX9?g_st=iw
Site B- https://maps.app.goo.gl/uU6ceAwci5vWg92e7?g_st=iw
Site C- https://maps.app.goo.gl/8R1RM86NuHdrtQEP8?g_st=iw
Site D- https://maps.app.goo.gl/ByUYfSrzRPbu23AWA?g_st=iw
Site E- https://maps.app.goo.gl/tSRStcGqPGLSzTSN7?g_st=iw

JUDGEMENT CRITERIA:

The submission would be graded according to the following criteria:-

1. The physical manifestation of the brief into the design – its form and functionality.
2. **The innovative and judicious usage of Steel in the design.**
3. The presentation of the said design – via. Drawings sheets (for both Zonal and Final Round, if selected) and physical model and 3D sketch-up model in software, walkthrough and PowerPoint presentation (for Final Round only, if selected).

GUIDELINES:

a. ***The proposed Relief Shelter will be standard in its features, quality, aesthetics and visual impact. The Architects are free to evolve the Steel Structures having any suitable shape satisfying the basic requirements furnished in the Brochure.***

b. ***Larger column free areas inside the Structures are desirable.***

The following suggestion may be considered:

a. One objective of the competition is to explain the basic concept of the design in an easy-to–understand way. Conceptual drawing may be used where necessary.

b. The proposed drawings of structures should be easy-to-understand visually (e.g. Features, quality, aesthetics and visual impact by colouring where necessary)

c. Students are free to evolve innovative ideas for the various aspects of the project but satisfying the basic requirements furnished in the Brochure

1.0 The following may be noted while working out the schemes:

- Innovative use of steel to the maximum extent in structural framing.
- Use of steel elements in roofing, cladding, fascia, stairs, main entrance gates and other areas as far as possible along with other construction materials.

2.0 Emphasis should be laid on design process and conception of innovative steel structures of various forms tempered with the practicality of putting the concept into reality along with Structural Stability.

3.0 Fire Safety/Lightning Protection norms are imperative. Encasement with concrete may not be adopted.

4.0 Detailed structural design and cost estimation / plumbing & sanitary design and auxiliary services design are outside the scope of the competition.

CODES AND REFERENCES:

1. Use of Internet and recent publications for obtaining information on similar Structures worldwide is suggested. However, direct copying is prohibited. (Also refer rules under submission criteria in the announcement section)

The following codes and may be used for reference purpose:

- IS:800, IS:801, IS:806, IS:875, IS:1161, IS:1893, IS:4923, IS:9595, IS:11384 – 2022
- National Building Code-2016
- Participants are free to refer suitable Indian/ Foreign codes as applicable.

All submitted Entries will receive Participation Certificates.

STEEL ELEMENTS:

All available Steel Elements may be used for the above purpose. These include:

- Steel Rolled Sections:
  Standard Beam Sections / Wide / Narrow Parallel flange Beam Sections, Channel Sections / Angle Sections etc.
- Steel Fabricated / Built-up Sections / Castellated sections
- Rectangular Hollow Sections / Square Hollow Sections / Circular Hollow Sections
- Plates and Flats, Rounds and Squares
- Wire Ropes
- Cold Formed Steel
- Corrugated /Plain/ Embossed Profiled Sheet
- Colour Coated/ Plastic Coated/Galvanized Sheet
- Stainless Steel Sheet and Sections
- High Tensile Steel, Weather Resistant Steel etc.

ENTRIES / APPLICATIONS

Last date of sending Expression of Interest – 30th October 2025
Last date of sending design entries – 15th December 2025

KEY POINTS FOR PARTICIPATION:

- To fill up the EOI in soft format, convert to PDF
- To take INSDAG's student's membership
- To email the EOI along with membership fees online by 30th October 2025 at **insdagindia@gmail.com**
- To Email the completed design entries by 15th December 2025 to the respective Zonal Coordinator & INSDAG.

REQUEST TO
Principals, Directors and HODs of all the Architectural Institutions.

This is a prestigious National Level Competition. This Brief may be assigned as a project / sessional work as a part of the curriculum of your students

Winning Colleges of the Competition (1999-2024)

Year	1st Prize	2nd Prizes	3rd Prizes
1999-2000	Anna University, Chennai	Rizvi College of Architecture, Mumbai Anna University, Chennai	SRM Engineering College, TN Jadavpur University, Kolkata
2000-01	LAD & SRP College, Nagpur	Priyadarshi College, Nagpur SRM College, Chengelpet	SRM College, Chengelpet SRM College, Chengelpet
2001-02	Academy of Architecture, Mumbai	Academy of Architecture, Mumbai Academy of Architecture, Mumbai	Anna University, Chennai Academy of Architecture, Mumbai
2002-03	Rizvi College of Architecture, Mumbai	Rizvi College of Architecture, Mumbai Dr. MGR Engineering College, Chennai	Dr. MGR Engineering College, Chennai Academy of Architecture, Mumbai
2003-04	TVB School of Habitat Studies, New Delhi	IIT, Roorkee Measi Academy of Architecture, Chennai	LAD & SRP College, Nagpur Measi Academy of Architecture, Chennai
2004-05	IIT, Roorkee	IIT, Roorkee Dr. MGR Engineering College, Chennai	IIT, Roorkee LAD & SRP College, Nagpur
2005-06	D Y Patil College of Arch, Pune	Anna University, Chennai Anna University, Chennai	IIT, Roorkee Jadavpur University, Kolkata
2006-07	Anna University, Chennai	Anna University, Chennai Jadavpur University, Kolkata	Apeejay SAP, Noida IIT, Roorkee
2007-08	Anna University, Chennai	Anna University, Chennai Anna University, Chennai	Anna University, Chennai Chitkara SPA, Patiala, Punjab
2008-09	School of Planning and Architecture, New Delhi	Measi Academy of Architecture, Chennai Measi Academy of Architecture, Chennai	Sathyabama University, Chennai Sathyabama University, Chennai
2009-10	VNIT, Nagpur (W-05)	Sathyabama University, Chennai (S-01) School of Planning and Architecture, New Delhi (N-04)	Bharati Vidyapeet College of Architecture,Pune (W-01) Jadavpur University, Kolkata (E-01)
2010-11	Measi Academy of Architecture, Chennai (S-09)	Jamia Millia Islamia, New Delhi (N-07) Sathyabama University, Chennai (S-07)	School of Planning and Architecture, Chennai (S-25), Jadavpur University, Kolkata (E-03)
2011-12	Measi Academy of Architecture, Chennai	School of Planning and Architecture, Chennai Jamia Millia Islamia, New Delhi	D C Patel School of Architecture, Gujarat, Measi Academy of Architecture, Chennai
2013	School of Planning and Architecture, Chennai	Birla Institute of Technology, Mesra Padmashree Dr D Y Patil Collge of Arch., Pune	Padmashree Dr D Y Patil Collge of Arch., Pune Measi Academy of Architecture, Chennai
2014	IIT, Kharagpur	School of Architecture, MMU, Ambala, Haryana, IIT, Kharagpur	VIT's Padmabhushan Dr. V.P. College of Arch., Pune Md. Sathak A J Academy of Architecture, Chennai
2015	IIT, Kharagpur (E-09)	School of Architecture, MMU, Ambala, Haryana (N-01) IIT, Kharagpur (E-07)	VIT's Pd. Dr. V.P. Colllege.of Arch., Pune (W-21) Md. Sathak A J Academy of Arch., Chennai (S-42)
2016	BIT, Ranchi	Sunder Deep College of Architecture, Gaziabad, UP, MITS, Gwalior, MP	Sardar Vallabhbhai Patel Inst. of Tech, Anand, Guj., IIT, Kharagpur
2017	School of Planning and Arch, New Delhi	School of Planning and Arch, Chitkara, Punjab, M M School of Architecture, Ambala	Excel College of Arch. & Planning, Tamilnadu, Smt. M Mundle College of Arch., Nagpur
2018	School of Planning and Architecture, New Delhi	IIT, Kharagpur School of Planning and Architecture, Chennai	Samata Mahajan of Chitkara University, Patiala, School of Planning and Architecture, New Delhi
2019	IIT, Kharagpur (EA-05)	School of Planning and Architecture, New Delhi(NA-16) Rachana Sansad's Academy of Arch., Mumbai (WA-04)	Rachana Sansad's Academy of Arch, Mumbai(WA-03) School of Planning and Architecture, Bhopal (NA-10)
2020	Rachana Sansad's Academy of Arch., Mumbai (WA-02)	Rachana Sansad's Academy of Arch., Mumbai (WA-04) Piloo Modi School of Arch., Cuttack (EA-06)	Piloo Modi School of Arch., Cuttack (EA-05) Dr. Bhanuben Nanavati Coll. of Arch. for Women, Pune (WA-01)
2021	Measi Academy of Architecture, Chennai (SA-45)	IIT, Kharagpur (EA-10) Rachana Sansad's Academy of Arch., Mumbai (WA-01)	Rachana Sansad's Academy of Arch.,Mumbai (WA-03) RVS Padmavathy School of Archi., Chennai (SA-05)
2022	Rachana Sansad's Academy of Arch., Mumbai (WA-02)	IIT Roorkee (NA-20) Rachana Sansad's Academy of Arch., Mumbai (WA-03)	KIIT School of Arch. and Planning, Bhubaneswar (EA-06) IIT Kharagpur (EA-34)
2023	Rachana Sansad's Academy of Arch., Mumbai (WA-01)	Crescent School of Architecture, Chennai (SA-13) IIT, Kharagpur (EA-09)	IIT Roorkee (NA-06) Crescent School of Architecture, Chennai (SA-08)
2024	IIT Roorkee (NA-07)	RVS Padmavathy School of Archi., Chennai (SA-48) IIT Roorkee (NA-03)	Rachana Sansad's Academy of Arch., Mumbai (WA-05) Measi Academy of Architecture, Chennai (SA-05)

Themes of the Competitions (From 1999 to 2024):

- Centre for Performance of Arts at Kolkata;
- Sports cum Recreation Centre at Chennai;
- International Standard Shopping Plaza at Mumbai;
- World-class National Art Gallery at Banjara Hills, Hyderabad;
- International Cricket Stadium at Raipur, Chhattisgarh;
- International Airport Terminal Building at Vishakhapatnam;
- World-class Permanent Trade Fair Complex at Kolkata;
- World-class Railway Station in Rajasthan;
- 200 bedded Hospital at Burari, Kaushik Enclave, Delhi;
- World-Class Vehicle Terminus;
- Steel intensive village;
- Steel intensive Martyr Memorial;
- Steel intensive (B+G+4) Storeyed Office Building;
- (B+G+8) Storeyed super specialty hospital in Kolkata;
- Cultural Complex-cum-Spiritual Centre in any urban centre in India;
- Steel intensive Highway amenities centre;
- Tall Building(s);
- Elevated Cycle Track;
- International Airport proposed by AAI;
- Proposed International Level Cricket Stadium Cum Cricket Academy at Ghaziabad in India;
- 200 Bedded Hospital to be constructed in 100 days for Corona related Patients;
- Architectural Designing of an International Level School at Gurgaon;
- Architectural Designing of a Multi-Events Stadium at Kiriburu, Jharkhand;
- Architectural Designing of a R&D Centre at Visakhapatnam Steel Plant;
- Architectural Designing of a Steel Serenity Eco-Resort, Digha;

Annexure I: DETAILED AREA PROGRAM

1 Area Requirements for Basic Steel Disaster Relief Shelter Unit (per family – 5 to 6 members)

Space	Area (m²)	Purpose / Notes
Living/Sleeping Area	12–15	Multipurpose use; space-saving furniture, foldable beds/mats
Kitchenette	3–4	Basic cooking facilities, natural ventilation
Toilet/Washroom Unit	2–3	Dry sanitation or eco-toilets if sewer system unavailable
Verandah/Transition Zone	4–5	Buffer zone; can be used for socializing, storing, resting
Storage	2	For essentials, clothes, food grain
Livestock Space (optional)	3–4	Separate but attached/adjacent; important in rural context
Total per unit	**26–30 m²**	

2. Cluster/Community Design (for 10-15 units)

Space	Area (m²)	Purpose / Notes
Circulation/Walkways	10–15% of the total built-up area	Elevated or raised plank walkways
Community Kitchen	20–25	Shared facility during relief phase; efficient resource use
Community Hall/Shelter	30–40	Temporary school, gatherings, emergency shelter
First Aid/Health Station	10–15	For primary medical assistance
Wash Area (Shared)	5–10	Common washing/clothes drying areas
Solar Panel/Utility Zone	5–10	For sustainable energy access and battery storage
Water Storage (Overhead)	5	Harvested rainwater or delivered supply
Waste Management Area	5-8	Composting or dry waste segregation
Plantation Buffer	Contextual	For storm buffering, shading, and water retention

3. Support Infrastructure (Site-Wide)

This applies to multiple clusters or a larger planned shelter community across 1–2 acres or more.

Facility	Area (m²)	Notes
Main Entry and Registration Area	15–20	Security + initial documentation of relief families
Storage and Relief Goods Depot	30–40	Safe, waterproof storage of food, blankets, medical kits
Waste Sorting / Incineration	10–15	If remote; manage non-biodegradable waste responsibly
Water Purification / RO Unit	8–10	Provide clean drinking water using portable RO systems or solar filtration
Community Mobility Dock (Boat Access)	20-25	Jetty, platform, or raft-based ferry point in case of submerged land routes
Communication & Admin Center	10-15	Emergency radio, public announcement system, coordination point
Animal Shelter and Feed Store	15-20	Temporary shelter for cattle; especially important for agrarian/rural families

4. Cluster / Community-Level Planning

Each cluster serves 10–12 families, ideally functioning like a self-sustaining micro-village during and post-disaster.

Component	Area (m²)	Purpose / Rationale
Circulation & Elevated Walkways	60–70	Raised for flood access; 1.2–1.5 m wide for foot & stretcher movement
Central Community Courtyard	80–100	Shared space for children's play, social gatherings, temporary shelter
Community Kitchen & Dining	20–25	Efficient cooking for shared meals during relief; reduces fuel usage
Community Shelter Hall / School	40–50	Emergency refuge during storms; multi-use for education, meetings, indoor activity
First Aid / Health Post	10–12	For minor injury/illness; stocked with essentials; coordinated with NGOs/local clinics
Women & Child Safe Space	15–20	Trauma-relief zone; designed to offer safe social and psychological support
Solar Energy Station / Utility Room	10–12	Solar panels & battery storage; backup for lights, phone charging
Rainwater Harvesting Tank	5–8	Collection from rooftops; treated for drinking purposes
Dry Waste and Composting Area	5–6	Segregated bins; compost organic waste; reduce ecological load
Wash/Clothes Drying Zone	5–8	Shaded area for shared hand-washing or laundry drying
Buffer Plantation / Wind Breaks	Variable	Local tree species for protection & soil retention (e.g., mangrove belt)

5. Area Statement Summary (Per Cluster of 10 Units)

Component	Area (m²)
10 Shelter Units	260–300
Community Facilities	100–120
Circulation	40–50
Utility & Buffer Spaces	30–40
Total Area	**450–500 m²**

6. Total Area Summary (Macro Plan for 100 People / 20 Families)

Category	Area (m²)
Individual Units (20)	580–640 m²
Cluster Commons (2 clusters)	200–250 m²
Support Infrastructure	150–200 m²
Open Space & Circulation	200–250 m²
Total Footprint	**1100–1300 m²**

7. Optional Add-ons for Resilience & Livelihood

Add-on	Purpose
Rooftop Vegetable Patch (if feasible)	Encourages food self-reliance
Community Skill Training Corner	Vocational activities post-relief phase
Floating Garden/Planter Beds	Resilient food systems; tested in flood-prone areas like Bangladesh
Digital Kiosk/Internet Spot	For coordination and family contact during disasters

EXPRESSION OF INTEREST FOR PARTICIPATION

(To be submitted on or before 30th October 2025)

NATIONAL COMPETITION FOR STUDENTS FOR THE BEST INNOVATIVE USE OF STEEL IN ARCHITECTURE

YEAR 2025

Please fill through this link **https://forms.gle/LPoJ6rGFgR7o2j6P6 for online registration and payment**
Or, fill in this form, scan, convert it to PDF and email to insdagindia@gmail.com. Kindly make the online payment for Membership

Name & Address of the college:

Name of the guiding faculty/ HOD:

Signature of the guiding faculty/ HOD with date:

Student's name (Capital)	Mr. / Ms.	:	
	Year of Study	:	Telephone No.:
	E-mail address	:	
Student's name (Capital)	Mr. / Ms.	:	
	Year of Study	:	Telephone No.:
	E-mail address	:	
Student's name (Capital)	Mr. / Ms.	:	
	Year of Study	:	Telephone No.:
	E-mail address	:	
Student's name (Capital)	Mr. / Ms.	:	
	Year of Study	:	Telephone No.:
	E-mail address	:	

I/We agree to participate in the Competition organized by INSDAG for the year 2025 and would request you to enrol my/our name/s in your database for record purpose. I/We also agree to become Student Member/s of INSDAG by paying **Rs. 1000/-** only for each one of us (onetime only). Consolidated Payment for whole group is allowed.

Payment Details: (Online)

NEFT / RTGS / IMPS	QR CODE	UPI
INSTITUTE FOR STEEL DEVELOPMENT & GROWTH, BANK: **UCO, Kasba Branch – Kolkata** SB a/c No – **08370100004683,** IFSC : **UCBA0002081**		***8334815444@ucobank***

Signature(s): 1. 2. 3. 4.

Date:

Please email the scan copy of the EOI form with payment receipt to:

insdagindia@gmail.com
Institute for Steel Development and Growth (INSDAG)

(Kind Attention - Mr. Sajal Kumar Ghorai (Mob. 9836093666)

Avail Student Membership of INSDAG
Pay one-time Rs. 1000/- for each participant for full period of student life and get benefits under student's category