

# National Competition for Students 2020

For the best Innovative use of Steel in Architecture



ARCHITECTURAL DESIGNING OF A 200 BEDDED HOSPITAL TO BE  
CONSTRUCTED IN 100 DAYS FOR CORONA RELATED PATIENTS



[Institute for Steel Development & Growth \(INS DAG\)](http://www.insdag.org)

## Announcement for NACS (A) 2020

# NATIONAL COMPETITION FOR STUDENTS (2020) FOR THE BEST INNOVATIVE USE OF STEEL IN ARCHITECTURE

THEME: : ARCHITECTURAL DESIGNING OF A 200 BEDDED HOSPITAL TO BE CONSTRUCTED IN 100 DAYS FOR CORONA RELATED PATIENTS

### THE INSTITUTE

Institute for Steel Development & 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 2020 is **ARCHITECTURAL DESIGNING OF A 200 BEDDED HOSPITAL TO BE CONSTRUCTED IN 100 DAYS FOR CORONA RELATED PATIENTS ANYWHERE IN INDIA**

### THE PRIZES

1st Prize	:	Rs. 45,000/-	+	Certificate
2nd Prize (2 nos.)	:	Each Rs. 30,000/-	+	Certificate
3rd Prize (2 nos.)	:	Each Rs. 20,000/-	+	Certificate

**All submitted Entries will receive Participation Certificates.**

### 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.

- for UG students, individual participant / team of maximum 4 (four) students in the team
- for PG students only 1(one) PG student either individually or in a team with maxm. 3(three) UG students

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 2021**. *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, Bhutan, Nepal]

**Prof. (Dr.) Arup Sarkar**

Department of Architecture, Town & Regional Planning  
Indian Institute of Engineering, Science & Technology  
(IEST) Shibpur, Howrah – 711 103, West Bengal  
M: 9830198481

E-mail: arupsarkar.ar@gmail.com

**WEST ZONE** [Goa; Gujarat; Maharashtra ; Rajasthan]

**Prof. (Dr.) Ravindra Deshmukh**

D.Y.Patil School of Architecture  
Sr.No.124, 2016 At/Post-Ambi, MIDC Road,Talegaon  
District Pune-410506, Maharashtra  
M: 9119195041

E-mail: svp.ambi@gmail.com, deshmukhr04@gmail.com

**NORTH ZONE** [NCR; Himachal Pradesh; Haryana; Jammu & Kashmir, Madhya Pradesh; Punjab; Uttarakhand; Uttar Pradesh]

**Ar. Ritu Verma**

Principal  
Om Sterling Global University  
NH-52 Hisar-Chandigarh, Road, Hisar, Haryana 125001  
M: 9125631357 / 8222888051

E-mail: rituverma06@rediffmail.com

**SOUTH ZONE** [Andhra Pradesh; Telengana; Karnataka; Kerala; Tamil Nadu, Puduchery]

**Prof. Madhavan Thirumeni**

Dean, McGan's School of Architecture  
Perar, Kotagiri Rd, Ooty, Tamil Nadu  
M: 9840044179

E-mail: mtmeni@gmail.com

## 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. 800/- for each participant of the group via online.
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 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 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

The participants are invited to send their "Expression of Interest" (EOI) in soft format by email to INSDAG@GMAIL.COM

**The membership fees of Rs 800.00 by cheque may be dropped in the nearby drop box of UCo Bank payable to INSTITUTE FOR STEEL DEVELOPMENT & GROWTH, Kasba, 170 Shantipally Chakraborty Para, Kolkata 700107S/B a/c No. 08370100004683, IFSC UCBA0002081**

The participants are invited to send their **entries to respective Zonal Coordinators 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**

**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 (two (2) facades or more)
- Sections (two (2) sections or more)
- Details of steel used area
- Applicants should try to make them easy to understand visually
- 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: 15 mins (10 mins for ppt and walkthrough, 5 mins for Q & A)**

### **DESIGN THEME**

**ARCHITECTURAL DESIGNING OF A 200 BEDDED HOSPITAL TO BE CONSTRUCTED IN 100 DAYS FOR CORONA RELATED PATIENTS**  
Land Area: 10 acres

World Health Organisation has declared COVID-19 a Pandemic. The Government, Healthcare professionals & researchers are doing their best in delivering the healthcare services. Equal efforts are being poured in for finding out the ways to prevention, remedy & arresting the further spread. India has received the brunt of dreaded viral infection & has confirmed many cases across the country. Indian Medical Association has been doing its professional job guiding the situations.

IMA team is continuously monitoring the rapidly changing COVID-19 situation in the country. Requirement of instant facilities have become prime important. In order to take care of the patients with this disease HOSPITALS are in great requirement. Hence schemes for fast track construction of hospitals with all facilities is the scheme of this competition.

The Following facilities may be considered

#### Clinical Facilities

- General medicine
- Anesthesia
- Medical Officers

#### Diagnostic Facilities

- Conventional Radiology
- Ultrasound
- C.T. Scan
- Pathology
- Micro Biology
- Bio-Chemistry

#### AudiometryTherapeutic Facilities

- General clinics
- Immunisation facilities
- Physiotherapy

#### Occupational therapy

- Pharmacy
- Indoor services (200 beds)
- Emergency ward (16 bedded)
- Round the clock emergency services
- O.T. services with pre and post operative ward (2 major O.T.s; 1 emergency O.T.)
- Blood Bank

### Miscellaneous Facilities

- Dietary services
- Laundry services
- Stores
- Centralised medical gas system
- Hospital waste management facilities (Autoclave / incinerator)
- Ambulance services
- Mortuary services / post mortem services / cold storage room
- Centralised air conditioning in specific areas
- Computerised hospital information system
- Library
- Conference room
- Administrative areas
- Medical records department
- Hospital Engineering service (PWD maintenance wing)
- Electric sub-station, pump house and water reservoir (both Semi-underground and Overhead)
- Canteen for staff and public
- Telephone exchange with EPABX system
- Residential quarter, hostel for resident doctors and nurses
- Parking area
- Other related facilities required for functioning of hospital

✚ Maximum Ground Coverage permissible is 30% + additional 5% for multilevel parking (not to be included in FAR).

✚ Maximum FAR permissible is 200.

✚ Maximum Height of the building permissible is 37 metre.

✚ Parking standard is 2.0 Equivalent Car Spaces (ECS) / 100 Sq. M of floor area.

✚ Toilet facilities for staff, patients and attendant of patients.

✚ Issues of Acoustics, Floor vibrations, Air conditioning system

The planning may be Without AC/Split individual AC

1. Dormitory type
2. Single Bed Type
3. Mix of dormitory and single bed

In case of dormitory type then transparent separating/ partition membrane is mandatory

Suitable Flooring and floor finish may be considered

**BIS: 12433 (Part 1,2) Basic Requirement for Hospital Planning must be referred.**

Hospital may be

1. Modular in nature
2. the Building may be prefab in nature
3. Vertical development may be preferred
4. As only one disease will be involved the study for its requirements and utilities will be specific and short (this is an ancillary study only)
5. Time is the essence of the theme. So a construction schedule will be the governing part.

### 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 Hospital will be of international standards in its features, quality, aesthetics and visual impact.***
- b) ***The Architects are free to evolve the Steel Structures having any suitable shape satisfying the basic requirements furnished in the Brochure.***
- c) ***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 your design in an easy-to-understand way. Conceptual drawing may be used where necessary.
- b. The proposed structure will be easy-to-understand visually (e.g. Features, quality, aesthetics and visual impact by colouring where necessary)
- c. Participants 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.
  - Use of Steel-Concrete Composite Structures may be proposed because it may be desirable to include RCC elements in some locations such as slabs etc.
- 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 – the latest versions of these codes are to be referred.
- National Building Code-2016
- Candidates are free to refer suitable Indian/ Foreign codes as applicable.

#### 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 September 2020**

**Last date of sending entries**  
– **31st October 2020**

#### 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 September 2020 at INSDAG@GMAIL.COM
- To Email the completed entries by 31st October 2020 to the respective Zonal Coordinator.

#### 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

For Communication Contact

Mr. M M Ghosh – Coordinator Mob: 9748482618 Email: insdag@gmail.com

### Winning Colleges of the Competition (1999-2019)

Anna University, Chennai ; Rizvi College of Architecture-Mumbai ; SRM Engineering College-Tamil Nadu ; Jadavpur University-Kolkata ; LAD & SRP College- Nagpur ; Priyadarshini College-Nagpur ; Academy of Architecture-Mumbai ; Dr. MGR Engineering College-Chennai ; TVB School of Habitat Studies-New Delhi ; IIT-Roorkee ; Measi Academy of Architecture-Chennai ; D Y Patil College of Architecture-Pune ; Apeejay SAP- Noida ; Chitkara SPA- Patiala ; SPA- New Delhi ; Sathyabama University-Chennai ; VNIT-Nagpur ; Bharathi Vidyapeeth College of Architecture-Pune ; Jamia Milia Islamia-New Delhi ; D C Patel School of Architecture-Gujarat ; Birla Institute of Technology-Mesra ; IIT-Kharagpur ; School of Architecture, IPS Academy-Indore ; School of Architecture, M M University-Ambala, Haryana ; VIT's Padmabhushan Dr. Vasantdada Patil College of Architecture-Pune ; Md. Sathak A J Academy of Architecture-Chennai; Sunder Deep College of Architecture-UP; MITS-Gwalior; Sardar Vallabhbhai Patel Institute of Technology-Gujarat; Excel College of Architecture & Planning-Tamilnadu; Smt. Manoramabai Mundle College of Architecture-Nagpur; Crescent Institute of Science & Technology-Chennai; REVA University, Rukmini Knowledge Park-Bangalore; Rajalakshmi School of Architecture-Chennai; Impact School of Architecture-Bangalore; Madhav Institute of Technology & Science-Gwalior; SAP, BBD University-Lucknow; Maulana Azad National Institute-Bhopal; Z.H.C.E.T, A.M.U-Aligarh; Lovely University-Punjab; KIIT-Bhubaneswar; Pornima University-Jaipur, School Of Planning & Architecture-New Delh, Indian Institute of Technology, Kharagpur

### Zonal Coordinators of the Competition (2004-2019)

Year	North Zone	East Zone	West Zone	South Zone
2004-2006	Prof. Anurag Roy Vastu Kala Academy's School of Architecture, New Delhi	Prof (Dr.) Manju Halder HOD, Dept. of Architecture, Bengal Engineering College & Science University	Prof Manoj Parmar Kamla Raheja Vidyanidhi Institute for Architecture & Environmental Studies, Mumbai	Prof. Harimohan Pillai HOD MES School of Architecture, Kerala
2006-2007	Prof. Anurag Roy Vastu Kala Academy's School of Arch, New Delhi	Prof. K B Mahapatra Director; Piloo-Mody College of Architecture, Orissa	Prof. (Dr.) U S Chakradeo School of Arch, LAD College for Women, Nagpur	Prof. (Dr.) Ranee Vedamuthu HOD, SAP, Anna University, Chennai
2007-2008	Prof. Satish Khanna HOD; SPA, New Delhi	Prof. K B Mahapatra Director; Piloo-Mody College of Architecture, Orissa	Prof. (Dr.) U S Chakradeo Head of Department, School of Architecture LAD College for Women, Nagpur	Prof. (Dr.) Ranee Vedamuthu HOD SAP, Anna University, Chennai
2008-2009	Prof. Satish Khanna HOD; SPA, New Delhi	Prof. Tapas Kumar Bhattacharya Department of Architecture; Jadavpur University, Kolkata	Prof. Dhananjay Chaudhuri Dr. D Y Patil College of Architecture, Pune	Dr. Vijay Kishore Director, SPA, JNTU; Hyderabad
2009-2010	Prof. S M Akhtar The Dean, Faculty of Architecture Jamia Millia Islamia, New Delhi	Prof. Tapas Kumar Bhattacharya HOD, Department of Architecture Jadavpur University, Kolkata	Prof. Dhananjay Chaudhuri Padmashree Dr. D Y Patil College of Architecture, Pune	Prof. N Altaf Ahmed The Director, MEASI Academy of Architecture, Chennai
2013-2015	Prof. Ranjana Mital SPA, New Delhi	Prof. Shankha Pratim Bhattacharya Asst Professor, IIT, Kharagpur	Prof. Anand Ukidve Aayojan School of Architecture & Design, Pune	Prof. D V Solomom Director, McGan's Ooty School of Arch TN
2016-2017	Ar. Ritu Verma Associate Dean; Department of Architecture Om Institute of Architecture & Design, Hisar	Ar. Sanghamitra Sarkar Associate Professor, Department of Architecture Jadavpur University, Kolkata	Ar.(Dr.) Sudhir D Chavan Principal Smt. Kashibai Navale College of Architecture, Pune	Ar. Gauri N Shiurkar Principal McGan's Ooty School of Architecture
2017-2018	Ar. Ritu Verma Associate Professor Axis College; Kanpur – 208 011	Prof. (Dr.) Arup Sarkar Department of Architecture; Town & Regional Planning IEST, Shibpur; Howrah – 711 103	Prof. (Dr.) Ravindra Deshmukh D.Y.Patil School of Architecture Pune-410506	Prof. Mohammed Ali Shariieff Director; Sasi Creative School of Architecture Coimbatore – 641 032
2018-2019	Ar. Ritu Verma Associate Professor Axis College; Kanpur – 208 011	Prof. (Dr.) Arup Sarkar Department of Architecture; Town & Regional Planning IEST, Shibpur; Howrah – 711 103	Prof. (Dr.) Ravindra Deshmukh D.Y.Patil School of Architecture Pune-410506	Prof. Madhavan Thirumeni Director; Sasi Creative School of Architecture Coimbatore – 641 032

### Themes of the Competitions (From 1999 to 2019):

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, Chattisgarh; 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 center; Tall Building(s); Elevated Cycle Track; International Airport proposed by AAI, Proposed International Level Cricket Stadium Cum Cricket Academy at Ghaziabad in India