

SUSTAINABLE APPROACH IN ACADEMIC DESIGN COMPETITIONS

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Abstract

Abstract: Life of universe can be predicted only up till human imaginations, and as long as this 'buttressed by brain' species is alive. Whereas, education and academics show the path to sustain and to be alive in the universe in all means. Education of Architecture and allied fields are handling one of the most important needs called as shelter including outside and inside of it. Many times it is difficult to incorporate futuristic and sustainable attributes in mainstream system of academics and syllabus so as to cover fundamentals of the stream. Architectural design competitions can take this social responsibility if designed in such a manner to orient candidates or students towards topic of discussion as sustained, healthy and secured future of current generations and thereafter. Article covers discussion about such competition as an example of baby steps towards cultivating awareness in future generation of designers at early academic age.

Keywords: *Design, Sustainable, Future, Academic Architecture, Competition*

1. Introduction :

With the increase in pollution and the rapid depletion of natural resources, sustainability has become a serious concern for everyone. Sustainable development is defined as the development which caters to the need of the present without compromising the needs of the future generations. This essentially means two things: preserving the natural resources and careful allocation of these resources.

As architects, interior designers, planners and engineers, it is our responsibility to incorporate the concept of sustainability while designing buildings and urban spaces. A sustainable design is defined as, "A macro perspective that addresses the health and well-being of global ecosystems that support life for both current and future generations" (Jones, 2008).

Education plays a big role in changing the mind-sets of people. It is up to the academia to introduce this concept to the students so that they can become more responsible professionals. As the curriculum of

architecture and allied fields is vast, it is not always possible place sustainability in the core of the subjects. Abraham Lincoln in 1856 said, "Actions speak louder than words". Thus, ground zero action starts when design competitions like CAMPDES (Design competition at Amity University, Mumbai) target specifically to promote awareness among students as well as to orient their focus on sustainable design.

1.1. Aims

The aim of academic design competitions which focus on sustainability is to create general awareness. A social approach is required through which awareness about sustainability can be created at the end user as well as at the grass root level.

1.2. Objectives

The main objective is to develop awareness among students at an early stage of their careers so that they are motivated and enthused to address the concerns of sustainability at later stages. Also, since sudden changes and upgradations to the curriculum are not easy, such competitions slowly merge the idea of sustainability in the minds of the students. Also to equip students with the knowledge and skill so that they can take up this challenge of sustainability forward.

1.3. Scope

The scope of these design competitions are not just limited to architecture and design students but also to students from engineering and planning background.

1.4. Limitations

The limitations are:

- lack of knowledge and expertise
- non- availability of raw material
- lack of long term vision
- shortage of financial resources

2. Methodology

Competitions with special focus on sustainability need specific considerations evolved from research questions like design profile, topic selection, scope of

parameters and attributes etc. Also, the type of competition plays important role in appropriateness of the activity. Further discussion by taking example of design competition named as 'CAMPDES' held at Amity school of Architecture and Planning with respect to methodical points design of competition, pattern, analysis and conclusion etc.

2.1. Design of Competition

Adhering to objectives and purpose or occasion of competition, design leads to achieve balance. As a co-curricular activity it helps to develop application of academic knowledge in to focus topic. Discussed example of competition was designed considering following points

2.1.1. Topic identification

Topic identification plays important role while designing such competitions. This need to be done considering pre-event survey considering attributes like the need of the topic or project, its social impact, environmental impact, relation to context etc.

'CAMPDES' competition started in 2016 with the purpose of about campus development of Amity University Mumbai, with special focus on sustainable design, covering various topics every year like modular convention hall with locally available materials, student interaction spaces with bamboo as main construction material and this year furniture design with reusable corrugated packing sheets .

2.1.2. Target candidature

Starting with the quote *'Young plants are easier to cultivate than old trees to get more fruits in future'*, young budding designers can easily be directed towards the current burning and important issues like sustainability. It is expected that in future in their individual practice and career they will apply this cultivated approach in their projects and also will enlighten their clients about it. Considering project output quantum and scope, candidature as group of students need to be decided.

In the said competition group of minimum 3 students and maximum 5 students were asked to participate with compulsion of 1 student in the group from lowest academic semester or year. This was done to achieve vertical communication and to develop feeling of fraternity.

2.1.3. Target Beneficiaries and stake holders

Beneficiaries of the competitions can be categorized in two distinct types: immediate and long term. *'Everyone is learning till last exhalation as last lesson of life'*, so the organizing committee members, participating candidates and their co-learners, viewers and jury members are immediate beneficiaries and stake holders whereas future generation, end users, individuals clientele sponsors (if any) will be long term beneficiaries thereof.

'Immediate ones' in the sample event were approximately 25 students, 3 committee members and 4 jurors on an average and all the currently enrolled students at school/ college level competition. They get benefitted by synergy developed out of the movement and thought discussed. Also some of them apply the same concept in their curricular design projects consequently.

2.1.4. Stages and time line calculations

Design competitions need to follow a design process which includes synopsis, concept development, final design output, presentation and assessment, whereas self-assessment can be done at the interval of every individual process. Generally synopsis is provided by organizers and candidates are expected to follow rest except assessment which in case of competitions needs to be done by the jury members.

CAMPDES was two stage design competition as stage one covered conceptual design and shortlisted entries only allowed for stage two presentations. Reason embedded as to curtail and control resource flow and paper work helps to adhere with concept of sustainability.

2.1.5. Design project setting

'Sky is the limit for any design project as it's an art, an art of applying sciences' following this quote design project may cover infinite number of projects. However with reference to point no. 2.1.1 of this paper, after selection of topic pre-design study is required to be done by organizers. This includes scope and context, academic background, available resources as MMT (Man, Machine, Money and Time) and also end user considerations. Selected design topics suitability to sustainability is the key of design project setting. Scope of the project should be limited considering academic age level of the target candidature. Ground realities and contexts play integral role while setting the design project. *'Start of anything always define End result'*, so setting of design project

only leads to expected outcome and need to be done carefully.

CAMPDES

Dream & define your Campus

ASAP design competition

Brief –ASAP faculty organizing design competition for AMITY UNIVERSITY campus, aiming towards involvement of students of Amity university in dreaming and execution (subject to approval) about campus development & decoration, this will be annual competition and will be dealing with various design projects related to amity campus development and decoration.

CAMPDES 2018

PROJECT-

Waiting lounge furniture out of waste material

Requirements-

Seating and Center/ Side Table

Any Other Additional suggested requirements

Expectations-

Furniture Item should be with about 2 year life.

Keeping **corrugated sheets used in packaging industry** as main construction material & others as Low Cost & eco Friendly Materials to be introduced up to maximum extent possible.

Structure may be movable / modular / installable easily etc.

Prizes-

Certificates to winner team & runner up Team & trophy or cash/ Kind Prizes as per decision of ASAP faculty and University management.

Competition conduct-

Two stage competition

Stage 1- Teams will work on project given at conceptual level only and submit at given time

Stage 1 submission
Venue- ASAP faculty cabin
Time – 02.00 P.M. To 4.00 P.M.
Date -05-09 -2018

Submission Requirements- Conceptual Sketches and write ups on not more than 2 A1 size Tracing sheets.

Stage 2 –

Results of Stage 1 will be declared on 07 Sept. 2018 before end of the day.

Shortlisted teams will work on final proposal & further detail drawings (at Suitable scale) and **model** (preferably at scale 1:1) of the project given. Maximum 2 A1 sheets are allowed.

Submission of final presentation will be on /or before **27 September, 2018**

Time Venue & submission details will be communicated later

Team registration –

- Team will be of 5 member maximum & 2 member minimum, out of which one member should be from semester 1 for stage 2.
- Team member should be eligible student of current academic year.

Organizing Committee

Ar. Onkar Kulkarni, Ar. Vaibhav Kudtalkar, Id Mrs. Aparna Jagnade

Best luck!! For competition by

All ASAP Faculty & Director ASAP Prof. Abhijeet Shirodkar

Director ASAP

Figure 1: Design brief of the competition ‘CAMPDES’

Source: Author

2.1.6. Design Requirements

Design outcomes need to be end user and sustainability centered. However consideration of services, allied facilities, bylaws etc. may lead towards some amount of relaxation. Legitimate relaxations need to be mentioned in the design brief itself, so as to achieve a focused approach wherein everything designed and built is sustainable unless provided with short term solutions to long term issues. And so as to address this problem, the concept of sustainability is forced to be thought of.

Requirements can be decided by the optimum quantum of presentation so as to understand design solution. In the form of write-up on concept and drawings of plans, sections, elevations and views etc.

In sample competition design project requirements were adhering to the use of sustainable materials, and design outcomes to serve contemporary needs of end user comfort. Materials suggested were Bamboo, Corrugated sheets etc. and design requirements were convention hall, interaction spaces, and lounge furniture respectively. Design requirements also came with set of accessory spaces and components and expected to be provided with focus on sustainability only with RRR (Reduce, Reuse, and Recycle), of course with relaxations as mentioned above.

2.1.7. Physical requirements

Physical requirements can be set with respect to the expected optimum quantum of design requirements. It includes write up format and word/ page limits, drawing sheet size and number of sheets, number of panels and their size.

However this is only the technical aspect, there is still a long way to start achieving sustainability in design of competition itself. The sample competition considered and practiced the words R ‘reduce’ and ‘optimum’.

2.2. Allied aspects

Competition if assumed as an event will include series of activities with inclusion of various resources and aspects. Some important points are discussed as below.

2.2.1. Competition costing

Item wise detail estimate needs to be done carefully so as to avoid lack of resources during conduct of competition from start to end. Also cash flow plan needs to be prepared beforehand. Competition policy should include list of deliverables of all types including print and stationary media, with consideration of ‘R’ for reduce always.

2.2.2. Financial resources

Finance is the backbone of the event and hence needs to be checked and availed by various means such as grants by universities and N.G.O.’s, sponsorships, registration fees and indirect resources like donations e.g. availability of exhibition space and jury hall, stationary, surfaces for advertisements, stake holders providing transport etc.

2.2.3. Rules and regulations

Any competition always seeks fair justice to all candidates. Where there is justice there are rules and regulations that need to be followed. Rules include aspects to be covered as deadlines, disclosure of identity, copyrights, plagiarism and copying of design or part thereof, reserved rights of organizers about admission, presentation, submission of physical requirements etc., safe guarding jury and organizers from misconduct and misbehavior by candidates and viewers as well and vice versa.

Regulations include aspects as restrictions and relaxations about official communication media during competition time span, restriction on communication with jury members, registration process of entry, and registration of submission with receipt, recording and vouchers of all transactions etc. These are important points to be considered for smooth and fair conduct of competition, which will always help to improve transparency and eventually scope and level of competition in long term vision.

2.2.4. Competition Conduct

CAMPDES had two stages as discussed above, details are as below

- **Conceptual Stage:** In the first stage the teams were given a specific amount of time to come up with a conceptual design keeping in mind that the main construction material needed be sustainable e.g. bamboo, waste material etc. as per the competition rules. The participants were required to submit conceptual sketches and write ups on not more than 2 A1 size tracing sheets. In this stage the jury was closed and was panel of internal faculty members. The participant identities were not disclosed.
- **Object Development-** The shortlisted teams were then asked to work on a final proposal & further detail drawings (at suitable scale) and model (preferably at scale 1:1) of the project given. The time given to the participants was 6-10 days. In this stage, the jury was open and was invited from other architecture and design colleges and firms.



Figure 2: Detailed drawing by a team at Campdes 2018

Source: Author



Figure 3: Scale 1:1 model by a team at Campdes 2018

Source: Author

2.2.5. Assessment, nomination and results

As far as competition is concerned, with the candidates' point of view, the results are especially imperative irrespective of the ultimate objective of an event.

The sample competition was of two stages as mentioned above. Stage one assessment was done by giving maximum weightage to sustainability achieved in solution succeeded by the concept, fulfillment of design requirement end user consideration, technology used, out of box thinking etc. Nominations for second stage were unbiased with reference to marks achieved by candidate groups.

In second stage jury nominated only positions as first second etc., whereas results were prepared and declared only by organizers so as to safe guard all jury members and also to include technicalities like timely submissions, behavior of candidate groups during competition etc. This angle of thought was specifically followed as organizers strongly believe that *'Nothing is sustainable without culture and humanity and good quality human beings'*

2.2.6. Prizes and Awards

Prizes like cash, trophies or certificates may be awarded and is up to the organizers discretion. Though, cash prizes should be provided to the winners who prepared models and kind to the ones who prepared drawing sheets, as model making teams spend more on materials and labor (if outsourced).

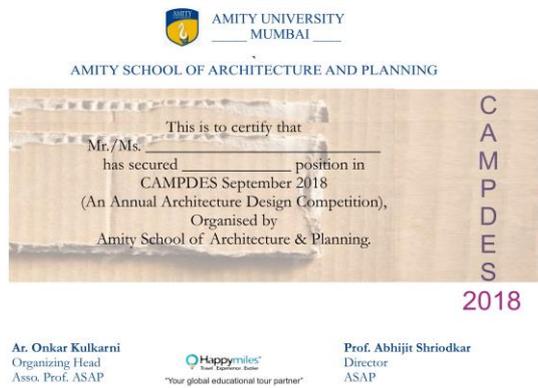


Figure 4 CAMPDES 2018 Certificate

Source- Author

2.3. Publicity

Publicity is need of any event indeed but here scope is widened for the competition by focusing on sustainability. It is required to spread awareness and not only for the purpose of publicity of the organization.

In sample competition physical and print media controlled by 'R' for reuse as handmade posters on back of used drawing sheets were used and digital media was used to 'R' educe paperwork in communication.

2.3.1. Pre-event Publicity

Pre event publicity attracts candidature, sponsorships, indirect help and awareness through curiosity developed in public domain.

This has to be done well in time before event with wide scope of media and geographical spread with limitations of context if and as any.

2.3.2. Post- Event Publicity

This helps to spread awareness with solution to the project problem given, which provides understanding about ideas generated in form of end products. Interestingly all nominated entries can be published irrespective of results to present various options of solution for one project.

Long term vision and wide spread awareness can be achieved effectively.

3. Competition pattern

CAMPDES was designed with reference to guidelines set by C.O.A. considering future eligibility to seek funds and sponsorships and authentication. However, changes within limits of said guidelines are made to focus on sustainability as well as academic expectations. Here are some types and modules suggested for this specific competition which has been implanted or will be in future.

3.1. Types

Design requirements and topic identification have wide scope of context and site locations. Single or narrow approach may lead to suppressing freedom of imagination and designing. Hence type of competitions with respect to design outcome and quantum of work expected are suggested as below.

3.1.1. Concept development

Projects with wide scope and possibility of multiple sites or locations to build only conceptual design output may be asked as design requirement and no detail design is required in this type.

3.1.2. Object Development

Depending up on scope of the project object or building design projects can be set. In which detail design of object or building is expected.

3.1.3. Scale model

Sometimes for some expected projects design can be well explained and understood by realistic detail model to given scale. This applies to object and furniture design.

3.1.4. Hands on work on actual project

On site work to 1:1 scale with actual construction can be introduced as design output preferably as presentation of second stage or final output. This is required for understanding craftsmanship and on site difficulties and skill set required for specific type of projects where detailing in design will play major role.

3.2. Modules

Module of competition with fixed parameters, scope and level can be designed so that competition can be floated at various locations. Modular system will help to achieve organized approach and further it can be patented in future. Modules can be designed with respect to parameters discussed below.

3.2.1. Duration wise

When it comes to time resource, it is precious one and everyone needs to respect it. Also, as the competition aims to be a co-curricular activity so sufficient time to complete the requirements needs to be given considering the on-going academic work. Module considering time line can be followed by CPM chart prepared and justified with academic work and physical requirements.

3.2.2. Area wise

Target location and context thereof plays important role in topic selection and design requirement setting. Area wise set module will help to suggest about topic identification. Roughly social distribution of areas can be rural, urban, cosmo, metro, heritage at mega level, housing, campus, public spaces, commercial spaces etc. and can also be at macro level like interior spaces, life style, furniture, equipment etc.

3.2.3. Project scale wise

Module with parameter project scale can be referred in 3.1 of this paper.

4. Analysis

Need, success and objective of said competition can only be achieved if analyzed with parameters discussed below.

4.1. Awareness Calculation

Awareness about issue like sustainability is difficult to calculate because of mixed opinions. This can be done by sample survey with questionnaire to direct towards thought and understanding of the issue. Samples may be in categorized as open and closed or controlled with target set. Awareness ratio can be calculated in percentage with reference to ratings in survey. Categories of questions can be definition, current issues, contextual examples, need in terms of physical environment, suggestions etc.

4.2. Response Calculation

Response to sustainability is directly proportional to that of to competition. Response can be calculated under two categories candidature and viewers.

$$R = (C / EC \times 40 / 100) + (\sum V / EV \times 60 / 100) \text{ Where,}$$

R= Response index, C= actual candidature in no., EC = expected candidature in no., V= actual viewers in all

media in no., EV= expected viewers under controlled set of survey sample in no.

5. Conclusions

New pedagogical techniques are required to educate students as well as for them to implement sustainability in their designs in architecture and planning of urban spaces. Design competitions like CAMPDES have potential in integrating sustainability in their minds so that they can become competent professionals later. Also, engaging students in such hands-on competitions motivate them more as they learn the different problems in designing with sustainable materials and also learn how to solve them.

Also it will come up as an action in form of baby step towards generating awareness in public domain as well.

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7. About the Author(s)

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on environmental issued. She has presented paper at international conferences.

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