

SEMESTER 5 DESIGN STUDIO REPORT 2019

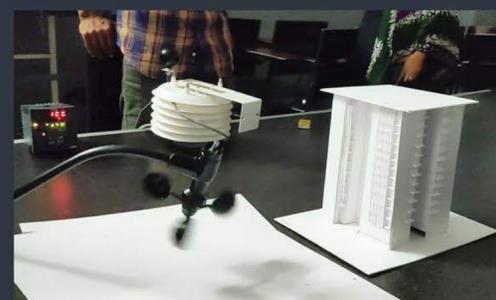
To design an executive condominium with state of art facilities at Trivandrum. The design should be competitive with current market trend. Design challenge is "bringing the luxury through the principles of sustainability".

STUDIO METHODOLOGY



HELIODON ANALYSIS

For this study the students made a mini heliodon and studied the sunpath / shadow analysis for their individual block models.



WIND ANALYSIS

Wind analysis is conducted for the better understanding of the effect of wind and its flow pattern on the building



CONCEPT DEVELOPMENT

The design process started with the concept formation and form evolution that justifies the design brief.



PLAN DEVELOPMENT

The process continued with development of plan that satisfies the functional aspects with respect to KMBR regulations .



CLIMATE ANALYSIS

A physical model is developed from the preliminary plan, and is tested in Laboratory conditions to understand the effect of Solar radiation and wind, using experimental apparatus.

Wind analysis:
Anemometer, Mini-wind tunnel

Sun path analysis: Heliodon



3D MODELING

3D digital models were developed to get a better ideas of form and massing of the building.



SOFTWARE SIMULATION

The 3D Models are analysed with simulation softwares to understand the effect of wind and solar radiation in the site and the building.



PRELIMINARY SUSTAINABLE EVALUATION- GRIHA

The design is evaluated with reference to Sustainability manual GRIHA, to understand the green rating and sustainable aspect of the proposed design.

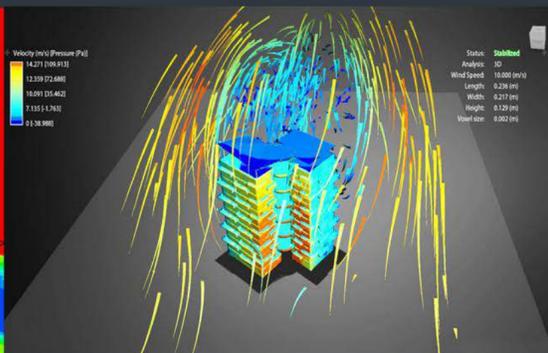
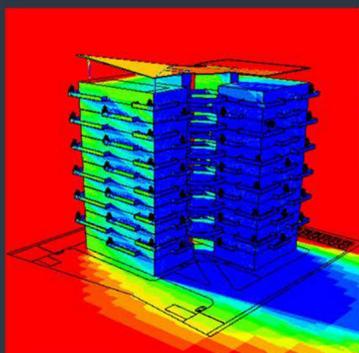
SERVICES
Details of Electrical, HVAC, Fire and Safety are done with the help of external experts.



SECONDARY SUSTAINABLE EVALUATION

By considering the sustainable guidelines from GRIHA the design is revised.

Through the Implementation of new materials and construction techniques; a modified design strategy is developed.



STUDIO OUTCOME

Students get familiarised with the latest softwares in their academic works.

Apart from general planning aspects, students are introduced to different design strategies like facade treatment, massing of forms, orientation etc. with respect to climatical conditions through Laboratory experiments and software simulations.

Students get thorough knowledge of sustainable design through the usage of green rating system in their studio projects.



MODIFIED PLAN AND DESIGN FORM

The plan and the building form are modified in accordance with the data obtained from the following stages;

- * Climate analysis
- * Software simulations
- * GRIHA Rating

The above design process gives a better understanding of climatically responsible sustainable design project.