# RESEARCH THESIS

# related to SIX CROSS CUTTING THEMES UNDER

# URGENT PROJECT

# Impact of landscape on residents living in housing societies Case of high rise, low rise and bungalows in Ahmedabad

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# B Arch Program

# P 12

# NIRMA UNIVERSITY

# AHMEDABAD

# GUJARAT

# INDIA

In the final semester of a Bachelor of Architecture (B. Arch) program, students engage in academic research by selecting an area of interest within the field of architecture. This process typically involves several steps to ensure that the research is rigorous, structured, and valuable. The process starts with a course on Research Methodology in VIII Semester followed by Research Proposal in IX semester. Here's an overview of the process:

## 1. Choosing an Area of Interest

- **Exploration:** Students begin by exploring various topics within architecture, such as sustainable design, urban planning, architectural history, construction technology, or digital architecture.
- **Narrowing Down:** After exploring, students narrow down their interests to a specific research question or problem. This could be based on current trends, gaps in existing literature, or personal interest.

## 2. Defining the Research Question

- **Problem Statement:** Students formulate a clear problem statement or research question that their work will address. This defines the scope of the research and sets the direction for the study.
- **Objectives:** Setting clear objectives helps in focusing the research. These could include understanding certain architectural phenomena, proposing new design solutions, or evaluating existing practices.

## 3. Literature Review

- **Existing Research:** A thorough review of existing literature helps students understand what has already been done in their area of interest. This involves reading academic papers, books, case studies, and other scholarly articles.
- **Gap Identification:** Through the literature review, students identify gaps or areas where further research is needed, which helps in refining their research question.

## 4. Research Methodology

- **Qualitative vs. Quantitative:** Depending on the nature of the research, students choose between qualitative methods (such as case studies, interviews, or observations) and quantitative methods (such as surveys or statistical analysis).
- **Data Collection:** Students plan how they will collect data. This might involve fieldwork, archival research, simulations, or experiments.
- **Data Analysis:** Once data is collected, students analyze it using appropriate tools and methods. This could involve software for statistical analysis, 3D modeling, or comparative analysis techniques.

## 5. Design and Proposal Development

- **Conceptual Framework:** Students often develop a conceptual framework that guides the design or theoretical aspects of their research.
- **Prototyping:** In some cases, students create physical or digital models to test their ideas. This is particularly common in research that leads to a design proposal.

## 6. Documentation and Presentation

- **Writing the Thesis:** The research findings are documented in a thesis, which includes the introduction, literature review, methodology, findings, discussion, and conclusion.
- **Visual Presentation:** Architecture students often need to prepare visual presentations of their research, including drawings, models, or digital renderings.
- **Defense:** Students may be required to present and defend their research in front of a panel of faculty members and peers.

## 7. Conclusion and Future Research

- **Summary of Findings:** The thesis concludes with a summary of the findings and their implications for the field of architecture.
- **Suggestions for Future Research:** Students may also suggest areas for further study based on their findings, contributing to ongoing academic discourse.

## 8. Submission and Review

- **Final Submission:** The completed thesis is submitted for review. This may include peer review, faculty evaluation, and sometimes publication in academic journals.
- **Feedback:** Based on the review, students may be asked to make revisions before the final acceptance of their research work.

This process not only helps students gain a deep understanding of a particular area within architecture but also equips them with the skills to conduct independent research, a valuable asset in their professional careers. Some of the research works undertaken by students are listed, examples of the some are also elaborated further.

# Impact of landscape on residents living in housing societies Case of high rise, low rise and bungalows in Ahmedabad

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## Framework of analysis:

Environmental values
- promotion of green areas in built environment.
- contribution to local biodiversity
-organic production of plants
-temperature and humidity modification.

Cultural values:
-Cultural connection to traditional practice and knowledge.
-maintenance of landscape identity.
-preservation of religious and cultural significance of plants.

Aesthetic values:
-beautification of landscape- softscape and hardscape.
-landscape elements- colour, light, texture, etc.
-visual landscape and smellscape

Impact of landcape on residents living in high rise residential buildings

People's association to landscape
Understanding the correlation between landscape, built and people through value association

Case studies
Typology: High rise building, low rise buildings, bungalows

Health and well-being values:
-destressing
-physical exercise
-nutrional extraction
-healing and therapeutic effect.

Social values:
- community building anf empowerement.
-provision of recreational spaces.
-aesthetics of green spaces
-landscape education
-consideration of generations in present and future.

High rise residential buildings
- Urban Oasis
- Skydeck select

Low  rise residential building
- La Habitat

Individual bungalows

Fig 6,7,8,9,10: Images of Urban oasis



Fig 11: Plan



0 5 10 15 25

Fig 12: Section

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*Structural analysis of the case studies:*

| Case study | Visual connection | Heirarchy of spaces | Social nodes |
|---|---|---|---|
| Skydeck select |  The central landscape has visual connection to the blocks around. connection decreases with height. |  The entrance of the building has a narrow foyer which leads to a narrow lane which opens upto the larger central garden. |  The social nodes are present in the garden the area surrounding it. The foyer between the blocks also act as social nodes. |
| Urban Oasis |  The central landscape has visual connection to the blocks around. Visual connection decreases with height. |  The entrance of a building is through a narrow lane which opens up the larger central garden. Small alleys to access the backside. |  The major social nodes are present in the central landscape garden along with the walkways with direct vision to the garden around it and the backyards attached to the houses. |
| La Habitat |  The central landscape stretches throughout the building, stablishing visual connection with all the blocks. |  The entrance has foyer which diverges into the larger central garden andthe backside of the building. |  Major social nodes present in the central garden and along the periphery of the building. |
| Bungalow 1 |  The garden has visual connection to the kitchen, and the vegetation around has visuals to the bedrooms and living room. |  The foyer diverges into the garden, to the entrance and the periphery of the house. |  The social nodes are present in the foyer with direct connection to the garden and in the landscape garden. |

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*Values associated to landscape:*

| Case study | Plants as a part of daily life | Social interaction | Social value | Cultural | Aesthetic value | Nutritional and medicinal value | Environmental value | Health and well being |
|---|---|---|---|---|---|---|---|---|
| High rise |  The residents interact with nature daily at different points of time. People spend atleast 20 mins daily looking after their landscape on the terrace. |  Major social interaction takes place in the central garden along with the walkways around it during morning and evening. |  Landscape inducing interaction and activity amongst people in the central garden. | Plants like tulsi, champa, genda, jasmine grown for religious purposes. | Ornamental plants grown to enhance the beauty of the garden. Organic design of the garden to generate mystery. | Different fruits, vegetables, herbs are grown to obtain nutrition. Obtained produce used in the kitchen for cooking | Abundance of vegetation helps to reduce the tempertaure of the house and the building overall creating a cooler environment. | Landscape gardens used as a space to pbtain a relaxing and soothign feeling. Space for destressing. |
| Low rise |  The landscaped terraces are used either during the morning or evening. Daily care is taken to water and maintain the plants. |  Social interaction takes place in the garden at different scales during morning and evening time |  Different scales of interaction generated in the garden depending upon the landscape elements. | Plants like tulsi, champa, genda, jasmine grown for religious purposes. | Ornamental plants grown to enhance the beauty of the garden. Organic design of the garden to generate mystery and openness. Different kinds of seating available. | Different fruits, vegetables, herbs are grown to obtain nutrition. Obtained produce used in the kitchen for cooking. | Abundance of vegetation helps to reduce the tempertaure of the house and the building overall creating a cooler environment. | Landscape gardens used as a space to obtain refreshment and peace. Space for destressing and reflecting. |
| Bungalows |  People mostly use the garden during the morning or evening. Half an hour spnt daily for maintenance. |  The interaction takes place in the garden mostly during morning and evening due to shade. |  Garden used as a sitout space. Elements like swings to induce interaction amongst people. | Plants like tulsi, champa, genda, jasmine, mogragrown for religious purposes. | Ornamental plants grown to enhance the beauty of the garden. Furniture like swing used to add to the elements in the garden. | Different fruits, vegetables, herbs are grown to obtain nutrition. Obtained produce used in the kitchen for cooking. | Abundance of vegetation helps to reduce the tempertaure of the house and the building overall creating a cooler environment. | Landscape gardens used as a space to obtain freshness and joy. Space for destressing and reflecting. |

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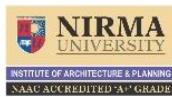
*Negative impact of landscape:*

| Case study | Shortage of space | Attack of pigeons and insects | Sunlight and wind direction | Maintenance | Accesibility | Leakage | Restriction of height due to structure |
|---|---|---|---|---|---|---|---|
| Skydeck select | | Insects breeding due to the presence of landcape. Jalis to prevent the insects and birds into the terrace. | Due to the height and the orinetation of the building some house recieve less sunlight. The garden is narrow and hence remains shaded throughout the day. | | Due to presence of railing, access to the plants becomes difficult. | | |
| Urban Oasis | The terrace has a very narrow space for landscaping. | Insects breeding due to the presence of landcape. Jalis to prevent the insects and birds into the terrace. | Due to the height and the orinetation of the building some house recieve less sunlight.The blocks are faw away hence the garden recieves enough sunlight. | | Due to presence of railing, access to the plants becomes difficult. | | Restriction of height of plants due to floor height. Species planted according to building structure. |
| La Habitat | The landscape can only be done in terms of pooted plants and the space available is narrow. | Insects breeding due to the presence of landcape. Jalis to prevent the insects and birds into the terrace. | Due to the height and the orinetation of the building some house recieve less sunlight. The garden hence remain shaded throughout the day. | | Due to presence of railing, access to the plants becomes difficult. | No irrigation system and water outlet pipe due to which water leaks to the lower floors. | Restriction of height of plants due to the floor height. |
| Bungalows | | Insect breeding due to presence of landscape. Birds build nests on the trees. | | Due to the larger area maintenance is difficult. | | Water flows outside the house creating a puddle. | |

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