

The 12th International Conference on Sustainable Urban Development (ICSUD 2026)

“Housing for All: Affordability, Inclusivity, and Sustainability”



SPRINGER NATURE

Paper Title:

Learning from Modernist Private Houses in Ho Chi Minh City: Climate-Responsive Design Values for Contemporary Sustainable Housing

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1. Introduction

2. Research Approach, Methodology and Analytical Framework

3. Climate-Responsive Design Values of Modernist Private Houses

4. Lessons for Contemporary Sustainable Housing

5. Conclusion

1. Introduction



Modernist houses (1954-1986)

Are the climate-responsive principles of modernist housing still relevant today?



Contemporary houses

2. Research Approach, Methodology and Analytical Framework



Location of 80 houses in survey area



shophouses



townhouses

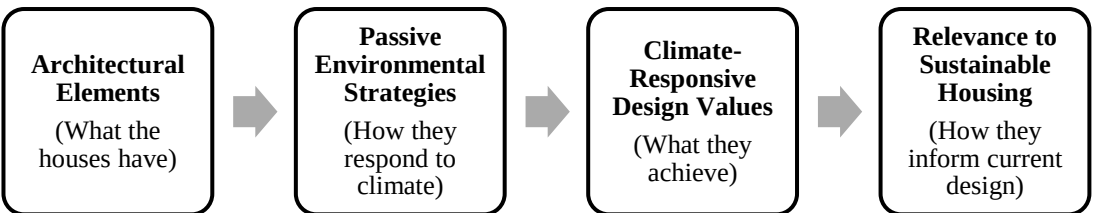
Exploratory qualitative study: literature, historical documentation, photographic survey 80 houses (shophouses and townhouses) on commercial streets, chosen by purposive sampling.

Research Objective: To understand the values and expressions of passive design in Saigon's modernist housing before 1986, and to draw lessons from these practices for contemporary sustainable housing design in Ho Chi Minh City.

Methodology

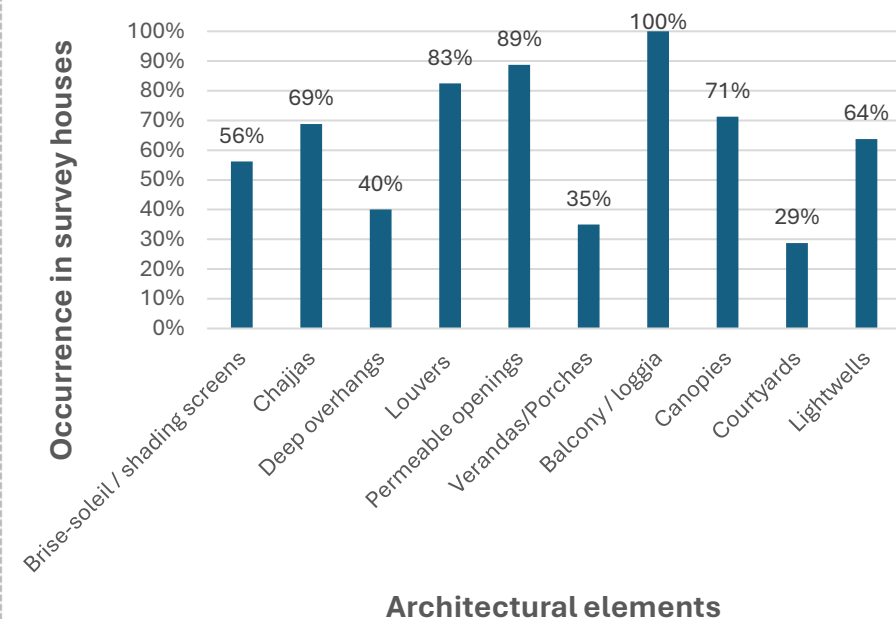
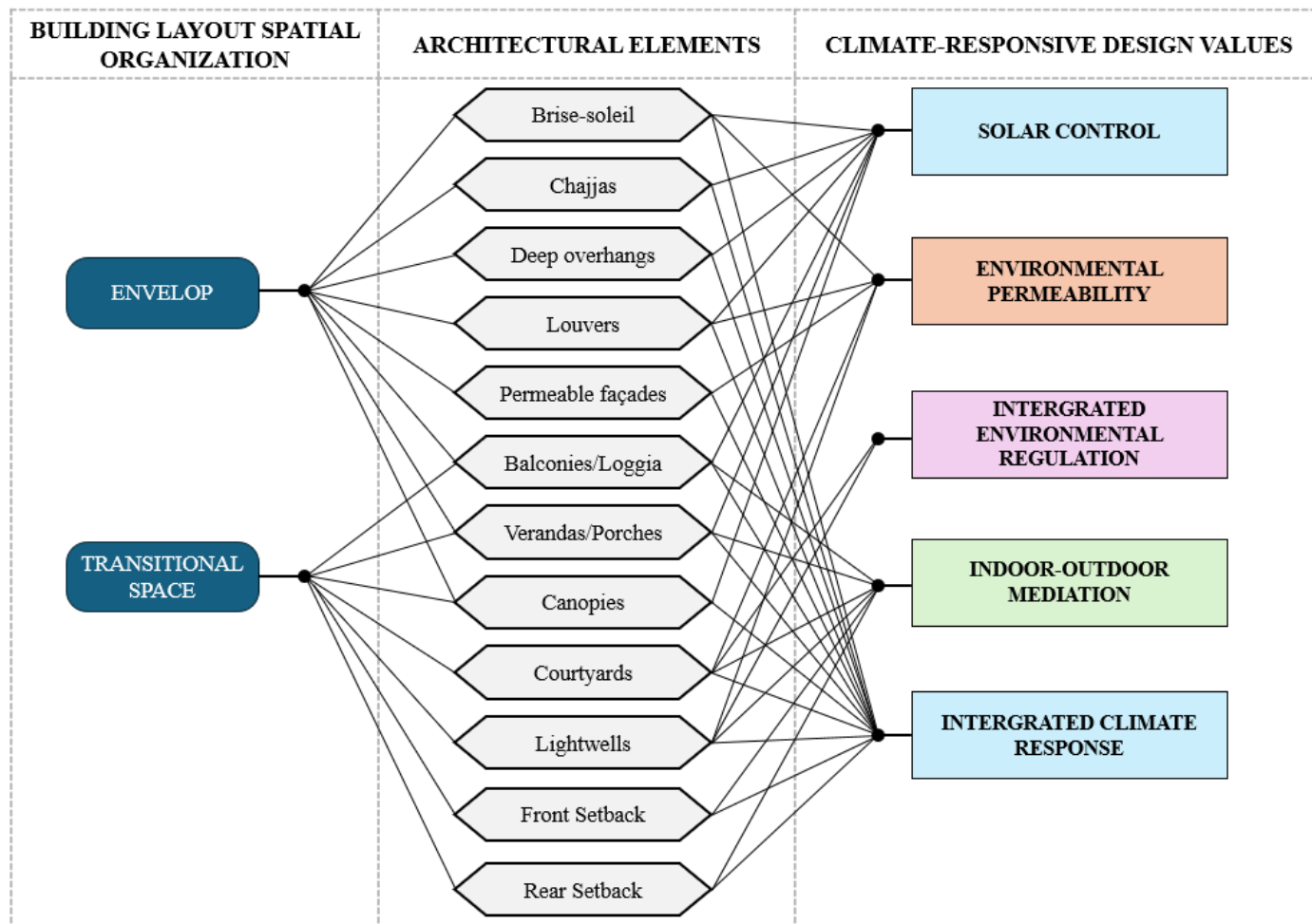


Analytical Framework



3. Climate-responsive Design Values of Modernist Private Houses

Linking elements to environmental values



Occurrent proportion of architectural elements among survey houses

3. Climate-responsive Design Values of Modernist Private Houses

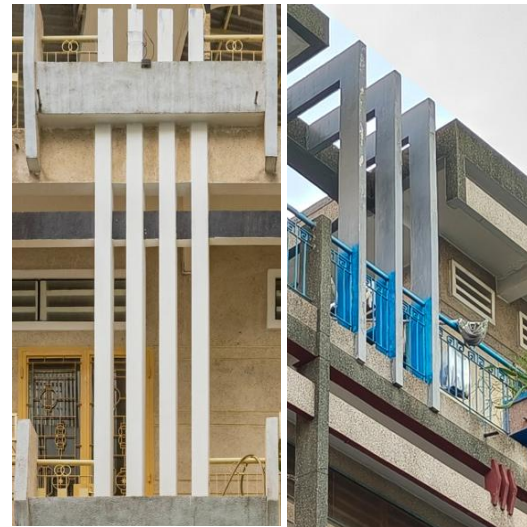
Value 1: Solar control



Roof overhangs/
Chajjas



Balconies/ Loggias



Horizontal/ Vertical
elements



Brise solei



Principle: limit solar gain before it enters the building

3. Climate-responsive Design Values of Modernist Private Houses

Value 2: Environmental permeability



Windows, doors, louvers and permeable façades keep air moving
Louvred openings ventilate while screening sun and rain
Courtyards, stairwells and voids link rooms into one airflow system

CONTRAST

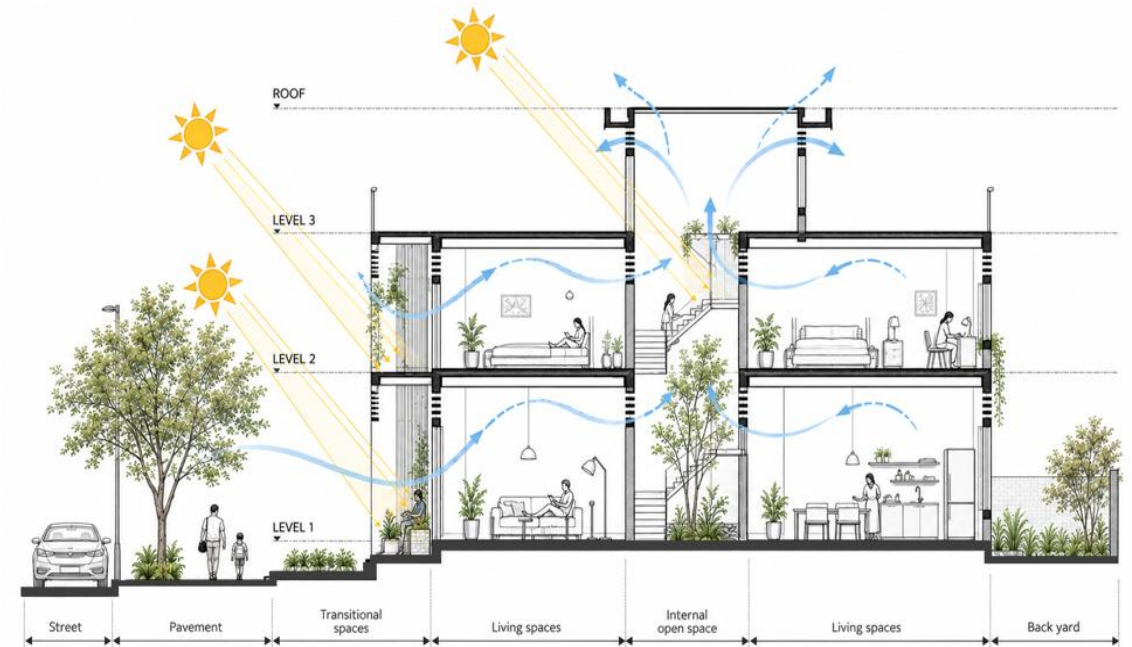


today's sealed, air-conditioned envelopes

3. Climate-responsive Design Values of Modernist Private Houses

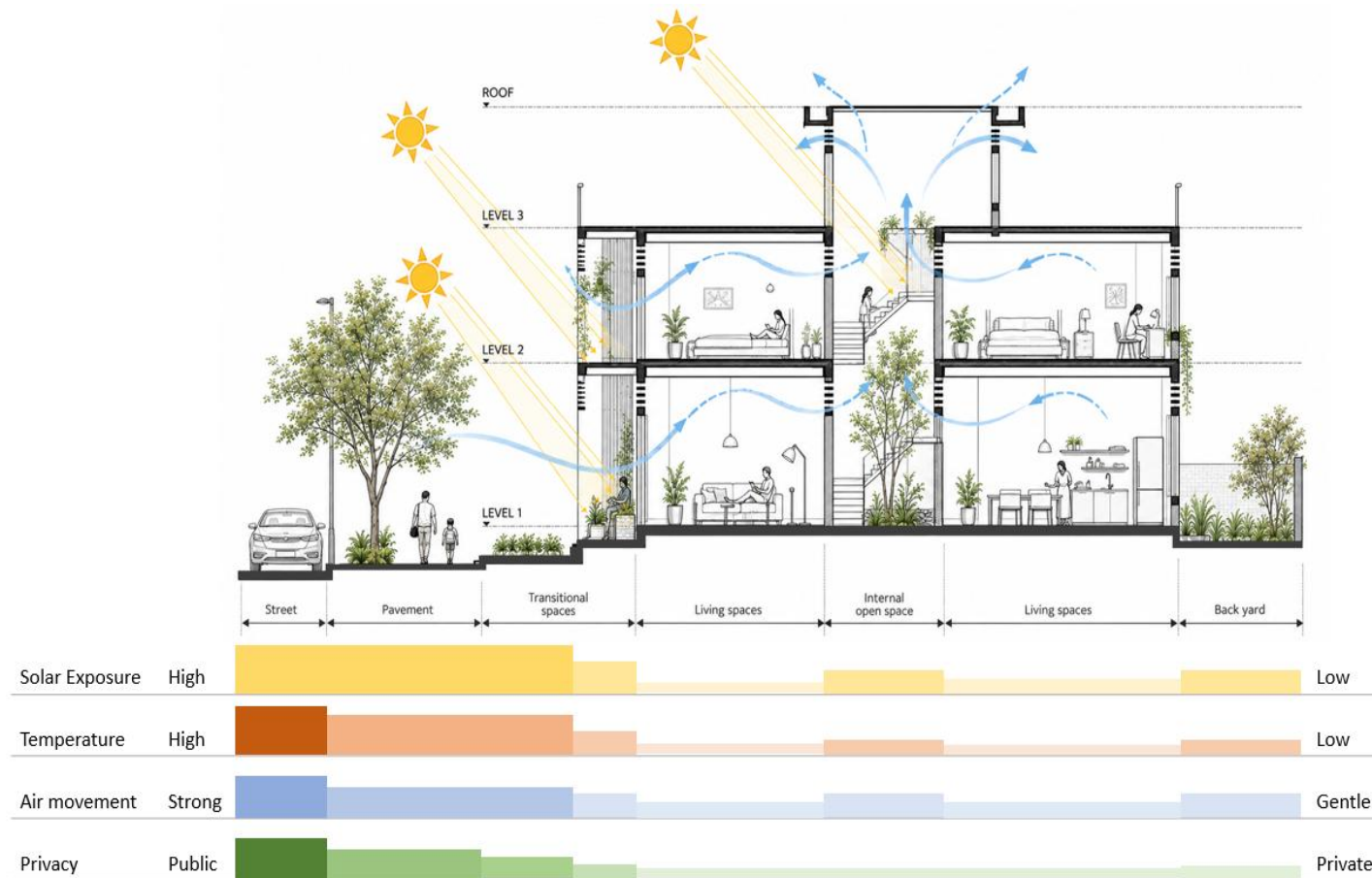
Value 3: Integrated environmental regulation

- Deep plots need daylight without excessive solar exposure
- Courtyards, lightwells, stairwells and voids carry light and air inward
- One element, several roles: a courtyard gives daylight, ventilation, greenery and outdoor space



3. Climate-responsive Design Values of Modernist Private Houses

Value 4: Indoor-outdoor mediation



Front yards, verandas, balconies, loggias, terraces, shaded corridors

A sequence of climates:
exposed outdoor → shaded semi-outdoor → protected interior

Shade, rain protection and air movement, plus room for everyday domestic life

3. Climate-respondsive Design Values of Modernist Private Houses

One interconnected passive system

Architectural elements	Passive environmental strategies	Climate-responsive design values	Environmental roles
- Brise-soleil - deep overhangs - recessed openings	Solar shading	Solar control	Limits direct solar exposure to façades and interior spaces
- Louvers - operable openings - permeable façades	Natural ventilation	Environmental permeability	Supports airflow and indoor–outdoor air exchange
- Courtyards - Lightwells - internal voids	Ventilation and daylighting	Integrated environmental regulation	Introduces natural light and air into deep interior spaces
- Balconies - Loggias - Verandas - shaded corridors	Environmental buffering	Indoor–outdoor mediation	Creates intermediate climatic conditions between exterior and interior
Combined façade and spatial elements	Integration of shading, airflow and daylight	Integrated climate response	Allows multiple passive strategies to operate as an interconnected system

4. Lessons for Contemporary Sustainable Housing

Five lessons

01 PRIORITIZING PASSIVE DESIGN

Use shading and natural ventilation when conditions allow; reserve mechanical cooling for periods when needed.

02 FAÇADE AS AN ENVIRONMENTAL LAYER

Design façades to regulate sunlight, airflow and indoor–outdoor connections using contemporary solutions.

03 BRINGING BACK TRANSITIONAL SPACES

Balconies, loggias and courtyards buffer climate while connecting landscapes, neighbors and street life.

04 INTEGRATING ENVIRONMENTAL FUNCTIONS

Combine shading, ventilation and daylight in the same architectural elements to use space efficiently.

05 LEARNING FROM PRINCIPLES, NOT FORMS

Adapt climate-responsive logic to today's urban, environmental and social conditions—not historical appearances.

4. Lesson for Contemporary Sustainable Housing

Adapting to today's conditions

01 URBAN CONSTRAINTS

Smaller plots, higher density, pollution, noise, security concerns, and rising comfort expectations.

02 PASSIVE + MECHANICAL COOLING

Passive design works with air-conditioning—not against it—reducing the hours when mechanical cooling is needed.

03 NEW ENVELOPE & VENTILATION STRATEGIES

Filtered double-skin envelopes and mixed-mode ventilation reinterpret passive principles for present-day conditions.

04 DESIGNING FOR HIGHER DENSITY

Communal terraces, ventilated corridors, and recessed balconies provide climate-responsive shared and transitional spaces.

5. Conclusion

01

KEY FINDINGS

80 surveyed houses reveal four interconnected climate-responsive values forming an integrated passive environmental system.

02

CONTEMPORARY RELEVANCE

Adapt underlying climatic principles - not historical forms - to today's urban, environmental, and social constraints.

03

LIMITATIONS & SUBSEQUENT STUDIES

Current study: qualitative analysis without measured performance. Subsequent studies: field measurements, occupant comfort surveys and BPS simulations to test effectiveness.

INHERIT THE CLIMATIC LOGIC, NOT THE ARCHITECTURAL FORM.

THANK YOU