CALIBRATED ROUGHNESS:
An Ordinary Architecture on the Urban Periphery

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ABSTRACT

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This thesis poses the material consideration not as a servant or afterthought to form and program, but as an interdependent component in design which engages with bodily experience, performances, and activities. Shifting from an emphasis on the instrumentality of plan or section, it approaches architecture as a physical matter that has its presence in reality.

Acknowledging the generic, banal and anonymous architectural context of urban periphery, the project creates particularities not through proposing new iconic forms, but with a subtle strategy of material attention: exploring the relations and effects of material to facilitate mundane human daily activities and bring richness to everyday experiences.

The term “Calibrated Roughness” is coined to describe the performance of material which could meditate a new design-status between precise decision-making and open-interpretation.
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CONTENT

Thesis
08

Calibrated Roughness: The Experience.................................09
Ordinariness: The Element..................................................11
Ambiguity: The Program......................................................13
Casualness: The Material......................................................15
Periphery: The Site............................................................17
Picturesqueness: The Movement..........................................19
Conclusion...........................................................................19

Project
22

Appendix
40
This thesis poses the material as an interdependent component in design that engages with bodily experience, performances, and activities. Shifting from an emphasis on the instrumentality of plan or section, it approaches architecture as a physical matter that has its presence in reality.

Acknowledging the generic, banal and anonymous architectural context of urban periphery, the project creates particularities through exploring the relations and effects of material to facilitate everyday activities and brings richness to everyday experiences.

The term “Calibrated Roughness” is coined to describe the quality of project which meditates a new design-status between precise decision-making and open-interpretation.
0. Calibrated Roughness: The Experience

This thesis approaches material considerations in architectural design, not as an afterthought to form or program, but as an active component in shaping our environment and living experience. Despite our need to name the spaces in which we live, we do not actually live in the space of language, but rather inhabit a reality of materials with qualities that interact with bodies and lives.

The project, named "calibrated roughness", deploys a set of calibrations to bring out the positive meanings of the term “roughness”. It aims to unfold experiences that will vary according to the time of the day, the activities and events occurring, the occupation of space and characteristics of the inhabitants.

Most of the time, spaces are designed to hold a certain program. Rooms are conceived as isolated from each other, and materials are rendered afterward. Alternatively, the project starts with a series of collages capturing the moments in the architecture even before they exist. These images help to set up the tone of the atmosphere and material effects. They also put forward the opportunity to create a series of concentric layers in order to deliver those effects.
Differentiated in tectonics and material, this layered or concentric model is able to provide the possibility of a spatial gradient from intimate and specific to generic and open performances. The voids in the layers help to condense a complexity of experiences and curate interrelationships between layers.
I. Ordinariness: The Element

A catalog of elements is created varying from load bearing to nonstructural, solid to open, and opaque to transparent. These elements are coming directly from familiar objects in everyday life. They are in a sense, pretty straightforward. Being reexamined and redesigned into a more systematic and coherent language, they fit into the narrative of a gradient of experience. All the elements are carefully arranged, with the intention to deliver a certain freshness to the inhabitants.
Element catalog from left to right: solid to open, load bearing to non-structural
II. Ambiguity: The Program

Programs are analyzed in terms of user groups, time, specificity and privacy level. This particular project is a community-based daycare center. The diagram shows a possible mixed usage of spaces for different groups of people throughout the day. The more specifically the space is tied to a certain group, the closer it is located to the center. The closer the space is to the edge, on the other hand, it has more ambiguity and flexibility for activities and events. The intention is that throughout the day and the week, different areas of the project are activated, promoting a maximum usage of spaces.
Furniture plan scenarios in different times of the day and week

Weekday 6 a.m.

Weekday 4 p.m.

Weekday 10 a.m.

Weekend 2 p.m.
III. Casualness: The Material

In the project, the term “roughness” relates to both the performance and the tactile quality. To respond to the previous aspect, the spaces in the center part use wood primarily for the floor material which could establish a more intimate body engagement with children’s behaviors. While spaces on the edges use concrete for its tolerance and fewer demands for maintenance. Additionally, the project uses the material in a casual appreciation for the atmospheric affects and less interested in the accuracy, precision, and cleanliness in the detail. The bareness brings forward the beauty within the texture, color, and shape of materials. Materials are used against each other, adjacent to each other, overlaid, to produce a visual and sensory playfulness, to merge the project into the community and foreground the presence of human activities.
Ground texture with a mixture usage of brick, pebble, wood, cobblestone, grass and concrete
IV. Periphery: The Site

The project is located in a peripheral satellite city of Beijing. It takes about 40 minutes in the subway and 20 minutes walk to the site from the city center. Most the buildings on the site are residential, built in early 2000, and 6-floor high.

This is a prevalent urban condition in the periphery of Chinese cities and elsewhere, in which an area planned around a single program for housing suffers from the abruptness of the daily schedule and the inability to articulate a series of support activities. This project of calibrated roughness deploys a series of material elements of architecture and through its low-intensity usage of the site, it operates as a gradient between public urban space and more specifically programmed architectural space. Ultimately, the ambiguity of the project extends the possibilities for use, and empower the inhabitants to appropriate the project.
Site plan in urban environment

Function distribution of the buildings on the site

- Residential
- Education
- Commercial
- Healthcare
- Landscape
- Government
- Construction
V. Picturesqueness: The Movement

Due to the structure of the plan configuration and the location of voids, the project offers the experiences of looking across several layers with a glance. While this static reading is important, the project offers more in shifting its appearances when being approached either tangentially or perpendicularly to the ring layers. It is only the bodily movement through and across the layers that can fully embrace the experience of the whole project. The richness of the experience happens, I would argue, in any direction, with movement.

Conclusion

The project benefits from the five aspects on calibrating the roughness: the ordinariness of the element, the ambiguity of the program, the casualness: of the Material, the periphery of the site, and the picturesqueness of the movement. It fills a blank on the site which lacks the spatial gradient from open public urban space to enclosed architectural space. The calibrated roughness of the project responses to the experience of everyday appropriation and empower the inhabitants the freedom to explore, to feel, and to live in the project.
Movement scenarios from movie rendering clips of the project
The project is a community center with a fixed space of the area designated for a child-care center and a variety of different spaces that offers flexibilities in adapting the usages for the community.
UNDER MY LEAVES
Ground Floor Plan  1:500
SLANTING BREATH OF APRIL WIND
A WANDERER SINGS
AFTER THE GAZE
A GENTLE WAVE FADES
THE CLOUDS GIVE REST
TO THE BRIGHT SUN
Section Detail  1:50

Plan Detail  1:50
MELLIFLUOUSLY
Appendix