

# Introduction

Today's world is increasingly dynamic and ever changing. Experience has taught us that the built environment is too large and too complex to be controlled by a single party or to be designed as a single object. We know it is the result of many people and entities working sequentially as well as simultaneously. Our profession has thus become increasingly multidisciplinary and team oriented. We have witnessed outstanding large projects built using sophisticated design and production technologies. Yet, the bulk of the profession's work is not about these special projects, but about the enhancement of everyday environment.

In the everyday environment we have seen, with the new complexities of architectural production, a resulting increase in uniformity and rigidity, and a corresponding deterioration in the quality of the fabric of our cities and towns. High quality built environments reflect variety, architectural and urbanistic richness, as well as the ability to successfully adapt over time. There are good reasons to believe variety and adaptability yield a better match between the build environment and the life it shelters. Moreover, the state of the art in building technology suggest that there is not necessarily a conflict between efficient production and variety of form. In fact, variety might be the logical outcome of efficient production. If neither the use nor the technical means dictate uniformity and rigidity of built forms, design skills may become the weakest link in the chain.

So, how can we design large projects without necessarily imposing uniformity and rigidity where variety and adaptability over time are desirable? How can the big project do justice to the small scale? The design of complex varied forms that are adaptable over time demands new methods and skills.

## *Design Exercises*

The exercises in this book are about the control of complexity. They are intended to build design skills needed to design in the contemporary world. Complexity and variety thrive from the systemic approach rather than from the willful or random act. Inspired design need not be the result of a single or sudden vision. These skills have to do with handling thematic variation in the design of built form. They also have to do with sharing with other designers certain ways of working, somewhat in the way musicians may pick up a theme, passing it back and forth while playing together. These skills also have to do with hierarchical relations such as are found, for instance, between the urban designer and the architect. Above all, they have to do with change - with renewal and adaptation that make an urban environment live for a long time.

## *Design Plays*

A course, called Thematic Design, given at MIT for several years, developed the kind of exercises you find in this book. Over time, the format from those early days has been developed into what we now call 'plays'; a label that conveys best what the exercises are about.

## *Thematic Design*

Thematic design is about the control of complex architectural form, its behavior - the ways in which it tends to change, and its structure - the way it is composed. Structure and behavior are, of course, closely related, but the key to understanding form lies in the idea of transformation. We are in control of form to the extent we know how to transform it. The plays shown in this book are intended to demonstrate skills of control of architectural form through transformation exercises. In a thematic transformation we start with a relatively simple form and proceed from there, step by step, each time making a change that seems to make sense. While we do we look for opportunities because each time we have different ways to go and its up to us to decide what to do. In this way we enter in a dialogue with form. It shows us what we can do and then move the way we want. We play.

Playing, in the sense of giving a stage performance, demands creative interpretation, is interactive, and is fun to do. In contrast to rote 'exercises', a same play can be done differently each time. Unlike competitive 'games', a play cannot be lost or won; players perform simultaneously, striving for personal excellence as well as for a coherent shared result.

Experience has shown that players as well as teachers, once they have performed a given play, tend to propose alternatives to it, following their own preferences. Of course plays always invite interpretation. A same role can be cast in different ways, just as entire performances can differ depending on the actors and directors involved. But also a variety of scenarios can be

written setting up what is basically the same play. It is important in that way to 'own' what you engage in. In order to stimulate that, the plays in this workbook are presented in an open ended way and need to be fleshed out to make for a specific play. However, framing your own version must be preceded by the experience of playing a given version first. For that reason we also add, for each play proposed here, a single fully specified scenario representing its most basic and simple format called 'first play'.

These design plays are not about style. Because we naturally express ourselves when we play, each performance will reveal the imprint of the players. These design plays are about methodology - ways of form-making that can serve as tools in the designer's toolbox, to be applied whenever and wherever needed. Methodology transcends preferences of form. They have not been designed with a particular product in mind but for a particular operation to be done well. Given their dedicated purpose, the plays do not seek to simulate real life scenarios, impose no functional program, nor assume any particular social or cultural context. They are about making and controlling built form as such and not about 'design' in the comprehensive meaning by which this term is presently understood in architecture.

This sets you free to follow what most likely made you become a designer in the first place: the desire to shape built form; to be in full rapport with it and understand its 'behavior' in any given context, for any given inhabitation.

That does not mean that functional demands and social preferences and values are not important. Of course they are, but as a professional you will only be able to deal with such constraints if you are in full control of making built form in the first place.

#### *Design plays and studio work*

Doing 'a play' differs from doing a real world 'design' - or its studio surrogate - somewhat in the way kicking a football back and forth among friends differs from playing in a soccer match. Ball control provides the dexterity needed to perform well in the match. And ball control can be acquired by exercise. In the musician's education as well, doing 'etudes' is something else than making a 'composition' or conducting a concert. Where musical 'etudes' are played to cultivate the ear and to learn how to make musical instruments sing, the purpose of architecture 'plays' is to cultivate the eye and to learn how to make built form bloom.

Doing design plays therefore does not replace studio but complements it. Studio offers the student a uniquely holistic experience. It is where one learns to exercise good judgment while performing a complex task under

pressure of time. Plays, being about skills, focus most on how you deal with form, while studio is about what form you produce given the context and the demands imposed, no matter how you got there, applying whatever skills you have. The two modes of teaching require their own discourse, based on a different student / teacher interaction, and different criteria for evaluation. Their diversion of purpose make it difficult to integrate plays with the studio format. It therefore recommended to keep the two apart - as is done also in musical education. In fact, the original MIT Thematic Design course was deliberately set up in a lecture-and-assignment format distinct from the studio requirements. But, of course, once a student has mastered the skills the plays aim at, she can apply them with profit in the studio and, eventually, in practice.

Nevertheless, doing plays in the context of a studio setting is possible as long as the two modes of working and evaluating remain clearly distinct. One way of combining them, which we have explored, is by giving students a play to do quickly once a week in the brief space of one hour before studio work was resumed. The plays were selected for their relevance to the particular stage of the studio work, somewhat in the way calisthenics are done in preparation for a sports event. A benefit of working with the plays in the studio format is precisely about dealing with the complexities of the studio project at hand. Plays can be designed to address specific issues of the studio project which can be made more manageable by working them autonomously, and then be brought back to form part of the whole. Several plays also serve to establish working relationships among peers, as distribution of design control among designers becomes increasingly important and relevant.

Finally, given the role of play in human life, it is our hope and expectation that plays will be done by students just for the fun of it, perhaps in addition to, but separate from, any formal educational framework. Spontaneous play, done in free time is, after all, the most natural mode of learning.

#### *The Structure of the Book*

Twenty-eight plays are found in this book, arranged in four parts of seven plays each.

##### *Part One*

The seven plays given in Part One make you start from a simple form to arrive, by a sequence of design moves, at a complex one. This makes you experience how built form's emergence can be the result of a well conceived sequence of transformations. These first plays aim to give you a feel for the organic quality of built environment, and the ability to deal with it by what may be called a 'conversation with the form' as it grows under your hands.

The next two parts are about interactions among designers, who are in full control of their own forms, but are coordinating with, and stimulated by, the acts of their peers.

*Part Two* The seven plays in Part Two make you familiar with sharing with your peers a physical context as well as a variety of thematic form principles. This can be the case, for instance, when you do houses in the same street, or divide parts of a large project among designers in an office or among members of an ad-hoc team of colleagues. Modes of interaction among equals, based on shared circumstances and values have to do with what can be called a 'horizontal' relationship among designers.

*Part Three* The seven plays of Part Three put you in relation with peers who operate either on a higher level or a lower level compared to where you act yourself in the built environment. For instance, an architect may seek to do justice to the urban design done previously by a colleague that serves as context for her work. An urban designer, in turn, seeks to make a stimulating site for architects who come in later. The relation between these two designers can be called 'vertical'. It is a-symmetrical in time and space with the higher level actor leading and the lower level actor following. As we will have opportunity to examine, built environment is by nature hierarchical and imposes a string of such vertical relations between designers operating on various 'levels of intervention'.

Relations among designers always have to do with thematic properties of form. Horizontally, 'themes' - including patterns, types, and systems among other modes of variation - can be shared directly by application and interpretation, while vertically, thematic coherence of the higher level form must set the stage for lower level design while, in addition, thematic aspects for lower level design can be offered as guide lines for those performing in it.

*Part Four* In Part Four, finally, examples of seven different urban fields are given. In each of them another particular aspect found in all fields - type, themes, territory, positive space, and continuity of structure, is chosen as dominant to drive its development and shape the final result. Each example invites a team of designers to do another field in the manner peculiar to it, and, by doing so, apply the multiple skills as learned in the previous parts towards a holistic result. The team is expected to distribute tasks among its members in accordance with horizontal and vertical relations as exercised in previous plays. In a less ambitious mode, each example of a given field can provide a setting for previously proposed plays.

Deliberately academic, all these plays are nevertheless rooted in real world precedent because they bring forward interactions - between you and your peers, horizontally and vertically, and between you and the form itself - as you will encounter in built environment's unceasing transformations in the real world.

The ultimate test of your form making skills lies in how you apply them in that broader context of real world interaction. All else being equal, the carpenter with the better toolbox can be more ambitious than a less equipped colleague. The hammer, the drill, and the saw enable the process, but do not control it. In what sequence and to what purpose such tools are used, depends not on the toolmaker's product but the carpenter's judgment in applying it. The same goes for the ways of working that the plays are about. While the skills in question are best acquired in stand-alone exercises, your true mastery over them must be honed in the full spectrum of a design task.

The plays in this workbook are arranged by increasing complexity. Starting with a simple 'Hole-in-the-Wall' and ending with entire 'Urban Fields' they constitute a full course in handling environmental form. Nevertheless, students as well as teachers should feel free to pick and choose up and down the given sequence, following their personal preferences and needs.

If the twenty-eight plays combined offer an entire academic course, that does not mean we claim completeness. Other plays related to the same abilities are surely possible. And other abilities applied in contemporary practice may be identified and translated in new plays. Readers are kindly encouraged to expand the scope of this workbook in such ways. After all, the best learning experience is to try and devise a play of your own.

As already suggested, as a student you are encouraged to do the plays on your own initiative whenever you feel like it. Other than your own design experience, there need not be any preliminary requirement for you to have a go at them. With the exception of field plays in the last part, all plays can be done in half a day at most and an hour at least. It is better to repeat a play than to dwell on one for too long. While encouraged to play on your own initiative whenever you feel like it, you will gain most, obviously, if you can do so under the guidance of teachers. At all times, however, you are encouraged to play with friends. Although a solo play mode is almost always possible, the skills we aim at here are intended to serve interaction among designers. Playing with peers is highly recommended.