

1978-9 GRADUATE DESIGN STUDIO

Department of Architecture

MORPHOLOGY AND DESIGN
OF LARGE BUILDINGS AND
TOWNS

FALL 78	Arch 201
	Arch 100
WINTER 79	Arch 202
	Arch 241
SPRING 79	Arch 203
	Arch 291

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First Meeting: Wurster 9th Floor, Monday Sept. 25, 2 p.m.

COURSE CONTENT

This course has two objectives. First, as a teaching course, it is a design studio, in which students will undertake a series of projects of increasing difficulty, all within the general framework of the theory of pattern languages, culminating in the design of a six block area of San Francisco, as a product of some seventy different buildings, designed one after the other, by different students in the class.

Second, as a graduate, and research course, it will function as a workshop in which certain unanswered questions in the theory of pattern languages will be dealt with: in particular, the design of multi-storey buildings, and the development of a well defined societal process which can build up an area of a city, piecemeal, in such a way that the whole area becomes well integrated, and human in character.

In order to make the design aspects of the course as rewarding as possible, the final project will be carried out on a carefully detailed wood model at 1/8th scale, so that the final product will be a beautiful physical thing in itself. The earlier courses in the sequence will provide the theoretical and practical background for this task.

COURSE ORGANIZATION

The course will be organized as two separate halves that parallel and supplement each other: one focuses primarily on theory, and one focuses primarily on design. These two together will be given as a sequence overing three quarters: Fall '78, Winter '79 and Spring '79.

The full course sequence is as follows:

Fall quarter:	INTRODUCTION	Theory I - <u>Arch. 100</u> , 4 units. M-W 2-4
		Design I - <u>Arch. 201</u> , 4 units. T-Th 2-6
Winter quarter:	LARGE BUILDINGS	Theory II - <u>Arch. 241</u> , 4 units. M-W 2-4
		Design II - <u>Arch. 202</u> , 4 units. T-Th 2-6
Spring quarter:	URBAN DESIGN	Theory III- <u>Arch. 291</u> , 4 units. M-W 2-4
		Design III- <u>Arch. 203</u> , 4 units. T-Th 2-6

The sequence aims to gradually build up a thorough understanding of all the processes involved in urban design, and a full capacity to design buildings at all levels of scale. Within this framework the student will develop a series of specific skills and areas of knowledge:

1. Capacity to design a house, with regard to social patterns, relation to physical character of site, relation to construction system.
2. Detailed knowledge of specific patterns affecting climate, light, movement in and around buildings, relation of buildings to one another, treatment of space between buildings.
3. Basic theory of pattern languages, and processes of user design.

4. Knowledge of fundamental process of urban design.
5. Design of a large building, in a specifically urban context, and detailed knowledge of appropriate construction system for this building.
6. Detailed knowledge of ornament, and capacity to make ornament in a way that makes sense in buildings.
7. Understanding of the relation between design and construction.
8. Capacity to function as an "architect-builder": a way in which this theory and practice of making buildings can make practical sense for the student.

Students who wish to take either the theory or design course independently, for 4 units each, may do so--and may also take it for one or two quarters only, if they choose. However, given the overall objective of the sequence, and the closely knit framework of tasks and study areas required to reach this objective, we strongly recommend that the students take the full 8 units through the three quarters.

In parallel with the main course sequence, we shall also give an advanced graduate class, for a small group of students who have at least one year's background in this kind of work, and who wish to take part in working out the details of new theory that are needed for the main course. This course will be given as Arch 207 or Arch 298.

Fall 78

INTRODUCTION

Theory I (Arch 100): The Timeless Way of Building

The course begins with the presentation of a general theoretical framework for all design. This theoretical framework rests on a particular definition of what is valuable, as what is "life giving" - and proceeds to develop from this a comprehensive account of the structures which must be present in the environment, and in any particular specific building, in order to make it able to function, and also includes an account of the design processes which allows a person to introduce these structures most easily into a building.

First half: In the first half of the quarter, students will be introduced to these structures via the general theory of pattern languages. Questions to be discussed will include: What is a pattern; what makes a collection of patterns a language; what it means for a language to be shared; how a pattern language is used at different scales in the environment; how an "architect" can use a pattern language; how a "lay person" can use a pattern language.

Second half: In the second half of the quarter, students will be introduced to the general geometric principles, which underlie these structures. Questions to be discussed will include: What are some of the fundamental geometric properties common to all good buildings; what is the central criterion of value; difference between modular and non modular systems of geometry; necessity for an architect-builder, who is not merely making drawings, but is actively involved in construction of buildings; importance of the "last inch" in a design. This half of the quarter will include discussions of ornament, and students will be required to make a series of geometric studies, to supplement their reading and discussions.

Fall 787.

INTRODUCTION

Design I (Arch 201): Design with Pattern Languages

First half: In this first project, each student will develop the design of a house from scratch, and carry the design through to a complete set of schematic drawings, including treatment of an appropriate construction system. The student will study a site, write a program for the house, and use the pattern language to develop the design of the house directly on the site. The approach used requires the student to visualize every design decision directly, in three dimensions, on the site, and then to record this decision--using paper and pencil more as a way of recording what has already taken place in the designer's mind, than as a tool of design itself. After completing this portion of the course, the student should understand the rudiments of the way that design, with a pattern language, is able to give a building a strongly "personal" and therefore human quality; and will be ready to see how a similar process can also produce very large buildings and building complexes, in the next design course, Design II.

Second half: Morphology of a city. This part of the course deals with the overall organization and design of an urban area. The first ninety patterns in A Pattern Language describe the nature of cities: main roads, streets, centers of human activity, shops, the size of buildings, the location and density of buildings. These patterns seem correct by themselves. What happens if they are all put together? From a purely morphological point of view, what is a city like, which has all these patterns in it? The object of this exercise is to gain understanding of these patterns, and a glimpse into the complexity of urban structure, by actually constructing a map or plan of a city of 100,000 (the size of Berkeley) which has all, or most, of these patterns in it. After completing this portion of the course, a student will begin to have a coherent image of the kind of environment required by major patterns. He will, at this stage, be ready to consider the kind of process which is capable of producing such an environment in practice, in the next theory course, Theory II.

Winter 79

LARGE BUILDINGS

Design II (Arch 202): Multi storey public buildings

This course will prepare students to undertake the design of "large" public buildings.

Each student, or group of students, will choose a large building "type" which will be needed as part of our overall six block urban design - for instance, city hall, public library, parking garage, office building, apartment house, department store, etc.... The students will prepare themselves to master design of the generic type they have chosen, so that in the Spring quarter, they can then design a particular version of this type, within the overall framework of the six block area, and specific to the detailed requirements imposed by its site.

First half: In the first half of the quarter, special emphasis will be given to two aspects of the task. First, since the theory and contents of the pattern language, seem more appropriate for small buildings than for large, special consideration will be given to questions of overall organization, layout, that are compatible both with the patterns, and with the ideal of user design, in the context of a large multi storey building. Second, students will be asked to give special consideration to the construction system to be used in the building. The course will include discussion and criticism of the major construction systems currently available, and students will be asked to develop construction details that solve the difficulties inherent in present day construction systems.

Second half: In the second half of the quarter, students will develop a schematic design for the building type they have chosen, and will bring this design to a stage where its construction system is clear, details are understood, and treatment of windows, doors, roofs, etc. is completely understood.

After completing this course, the student will be ready to participate in the next course on urban design, where large buildings, and small, will be designed incrementally, one after the other, to produce a coherent urban fabric.

Winter 79

LARGE BUILDINGS

Theory II (Arch 241): The Fundamental Process

In this course, we shall begin the attempt to define a single process, which is capable of taking the insights of the last three courses, and making them real and effective, in a large scale urban context.

In order to do this, we shall postulate the existence of a six block area of San Francisco, in which an entirely new process of land ownership, taxation, zoning, planning, financing and construction can apply.

We shall discuss the exact conditions under which a process of incremental growth, will be capable of allowing an organic, and functionally effective town to grow in such an area. This means, that we shall take the geometric and functional postulates established in the Fall quarter, and try to formulate a model of an urban process which is capable of implementing these concepts, in practice, at reasonably high density, 2-6 storeys, and including a full mix of commercial, industrial, housing and civic buildings.

The course will give special emphasis to the following general question: How can each next "act" of building, be conceived and controlled, in such a way, that it helps to make the entire urban structure in which it occurs, more whole, more live, functionally more effective, and spiritually more deep. The assumption is, that if a general process can be defined, which will, at each stage of an incremental growth process, always seek to build something which has this effect on the whole, then, gradually, the whole will become complete, and solid - and also be capable of changing over time, with only good effects. In this sense, the approach of this course is genetic: it seeks to define a process which, like the fundamental processes of biology, allows a coherent whole to emerge from a very large number of independent acts of construction, which are controlled by social, legal, and fiscal mechanisms that make them work.

In the first half of the quarter, concurrent with the development of theory, students will undertake a series of exercises to see what kind of urban structure, different sets of conditions, or different sets of rules, actually generate. In the second half of the quarter, we shall begin the actual design process for the construction of a six block area in San Francisco. Students will undertake the first few increments of the simulation, so that by the end of the quarter some parts of the six block area are already visible on an 1/8 scale model.

Spring 79

URBAN DESIGN

Theory III (Arch 291): The process of urban design

Design III (Arch 203): Urban design

In this final 8-unit course we shall complete the simulation of the six block area begun in the previous quarter.

Students of the class will, collectively, undertake the design of a six block area of San Francisco, and the process by which they do this will reflect, as accurately as possible, the conditions under which such a six block area might grow in a humane way, as a result of piecemeal growth. Each student will design several buildings by himself (we will also encourage occasional partnerships for very large buildings). The purpose of the course will be to understand the way that each of these buildings fits into the matrix of buildings already designed, and to see what processes are necessary to make sure that the whole six block area becomes a coherent whole, as a result of some seventy separate building projects that are undertaken there. By the time the quarter is finished, these seventy buildings together will form the six block area which is under development.

During the quarter each student will undertake at least three separate projects, of different sizes, including at least one large building, and at least one or two minor building projects, but the accent will be on cooperation, and communal processes which make the buildings relate effectively to one another.

The main purpose of this course is to show the student how progressive modification and improvement of an urban structure, bring it to a deeper and more intricate level of functional order, than is possible by means of "urban design" as we know it today.

Each design project will be fitted into the six block area, on a carefully detailed wood model, made at 1/8th scale, so that this model fully conveys the sequence of emerging structure in the six block area, and so that, in the end, we clearly see the physical character of the city which emerges from this process.

In this last part of the course, we shall finally see the full scale design consequence of all the processes concerning traffic, common land, street space, individual buildings, incremental growth, new forms of taxation, the use of more fluid building systems, and so on... that have been defined in the Fall and Winter quarters.