Chapter 2. Analytic Chapter Contents

Lesson 1 (Chapters 4-7) takes the unprecedented step of throwing the burden of getting a good education directly onto the student. It is his or her responsibility to become better informed. He or she will have to guard against indoctrination, be it explicit: “We don't allow this type of style in our school”, or implicit: “Look at all these wonderful buildings by the Bauhaus and by the latest darlings of the media, everything else is irrelevant”. I provide simple criteria for judging the truth of architectural claims, and for erecting appropriate defenses against mental manipulation.

Lesson 2 (Chapters 8-9) is about complexity. Complexity obviously contrasts with simplicity, but in fact there exist two distinct types of complexity: disorganized versus organized. Disorganized complexity is randomness, and too much of it becomes unpleasant. This can destroy the functioning of structures that we design. Complexity that is highly organized is what life is all about, however. The greatest living environments of the past (buildings and pieces of urban fabric) embody an extremely high degree of organized complexity.

Lesson 3 (Chapters 10-12) describes the new and exciting topic of Biophilia: our innate kinship and love for living forms. Not only do we crave close contact with nature, plants, and animals, but also experiencing the structure of nature embodied in the built environment nourishes us deeply. By this I don’t mean copying the visual aspect of organic forms, but rather the use of the same structural patterns employed by biological organisms and natural forms. Biophilia is neither personal preference nor aesthetics, but a basic component of our health.

Lesson 4 (Chapters 13-16) introduces the idea of a “Pattern”, and answers the question of why some but not all design patterns can be explained in terms of Biophilia. Biophilic patterns govern our interaction with the natural environment, with living organisms, and with other persons. Different patterns operate to codify our interactions with society, culture, and larger social structures. Those interactions shape the built environment. We require patterns that arise from our culture and life in a society, because they influence our lives beyond interactions with the natural environment.

Lesson 5 (Chapters 17-20) discusses which environments are healthier for us. That information was discovered through evolutionary selection, and is documented in the traditional built environment. Recovering this knowledge today defines a “Pattern” in the sense of Christopher Alexander. A repository of design patterns helps us decide what configurations to include in a healthy environment, but also
which “Anti-patterns” create unhealthy designs. Patterns help a designer explore novel regions of design space in evolving an adaptive design.

Lesson 6 (Chapters 21-22) uses the “Law of Requisite Variety” to underline how buildings and cities require a specific type of structural variety in order to nurture human society. Overly simplistic environments, such as those massively adopted after World-War II, simplify both society and individuals. An unyielding abstract geometry makes people into isolated one-dimensional pawns. There are deep mathematical reasons why monotony in the built environment is unsatisfying, essentially reducing the complex potential of our lives.

Lesson 7 (Chapters 23-25) describes complex systems. Everything about a building and its interactions with users can be best described in terms of systems. Various system components will cooperate (or not) in supporting all the higher-level complexity that promotes living environments. Interactions unify building and user into one complex system. Especially important is the realization, through systems theory, that unless every scale is present in a system, and all those distinct scales interact strongly, then the system is deficient. Such an environment is not healthy for us.

Lesson 8 (Chapters 26-29) introduces the information field that all human beings actually experience as architecture. We don’t react to a particular design intellectually, except in a very minor way, but viscerally. All of our senses input information when we approach, enter, and inhabit a building, and this palpable experience truly counts. Biological responses underlying our connection to structures determine a building’s use above all else. The information field affects our person and our lives in a profound manner, yet is never designed.

Lesson 9 (Chapters 30-31) discusses proportional ratios. This ancient topic has both a negative and a positive side to it. The negative is that spurious proportional rules have been used to design unpleasant buildings, justifying them by an appeal to mystical properties of design. Those claims are invalid. The positive side is that mathematics can indeed be used, via simple dimensional checks, to guarantee that a design will have all the appropriate scales necessary to aid the biophilic effect. This mystifying topic is clarified following many decades of confusion.

Lesson 10 (Chapters 32-33) describes how we perceive a building as being in balance and in equilibrium (so that it will remain in balance after being virtually tilted slightly in any direction). A fundamental emotional response to gravitational equilibrium is built into our sensory system, and affects us deeply. From our evolutionary make-up, we expect to see a whole building and components of a building in balance and equilibrium. Many 20th Century and contemporary buildings intentionally avoid either balance or equilibrium, however, for novelty affect.

Acknowledgments

I am infinitely grateful to Christopher Alexander and Stefanos Polyzoides for generously allowing me to use their texts in this book. Alexander’s seminal essay on
systems is largely unknown to today’s generation of young architects. Nevertheless, systems theory has caught up and overtaken analytical methods in handling complexity, so that his essay is now central to understanding design. Polyzoides’ essay, in turn, has the power to re-orient architecture towards a new, adaptive practice. It is more relevant today than ever. The rest of the Readings consist of extracts from articles in which I am either the sole author, or coauthor along with Kenneth Masden. Many thanks to my excellent collaborator! Finally, I am indebted to Barbara Lyons Stewart, who provided invaluable advice when time came to edit the new portions of text for this book.