

ARCHITECTURAL DETAILING

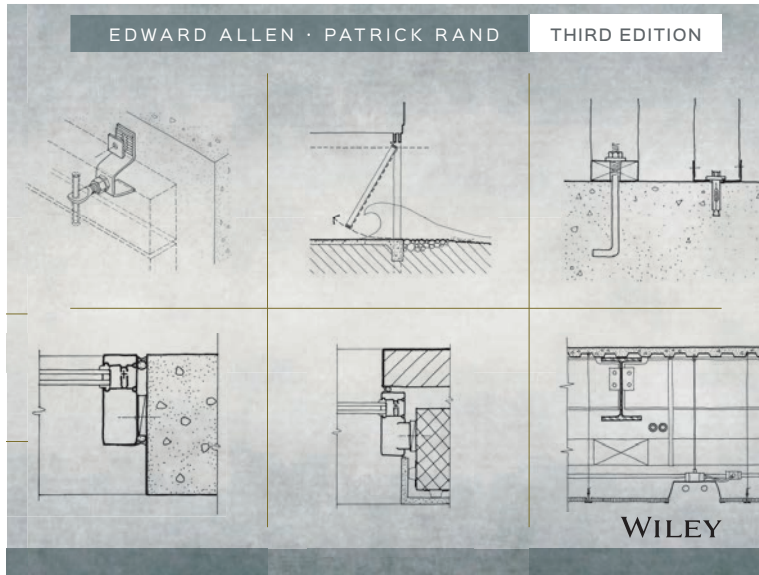
FUNCTION

CONSTRUCTIBILITY

AESTHETICS

EDWARD ALLEN · PATRICK RAND

THIRD EDITION



WILEY

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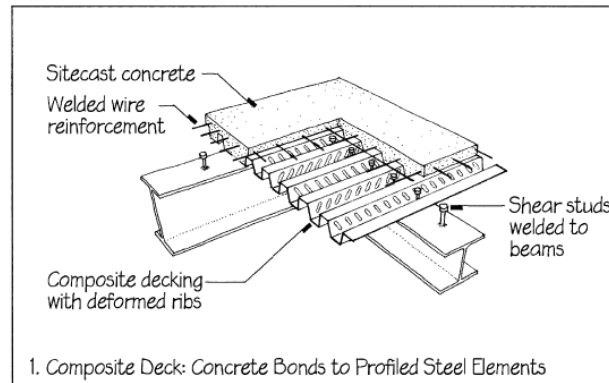
Architectural Detailing: Function Constructibility Aesthetics

This is the industry-standard guide to designing well-performing buildings. Architectural Detailing systematically describes the principles by which good architectural details are designed. Principles are explained in brief, and backed by extensive illustrations that show you how to design details that will not leak water or air, will control the flow of heat and water vapor, will adjust to all kinds of movement, and will be easy to construct. This new third edition contains approximately 25% new content. It conforms to current building and energy codes, and updates information about new materials and construction technology. Sustainable design issues are integrated where relevant.

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Connecting Dissimilar Materials



When joining different elements of building systems, the connections may be challenging to resolve. Structural systems may be made of concrete, masonry, steel, wood, and various composites. Enclosure systems may be made of these and many other materials that may not be as strong. Connections between them are critical, so the detailer must make transitions between elements efficient and reliable.

Connections in primary structural systems within a single material family are relatively simple to make. Steel frame elements are joined with bolts, pins, and welds; cast-in-place concrete has continuous steel reinforcement between columns, beams, and slabs; and wood elements are bolted, screwed, or nailed together. But how are connections between these different material families made?

1. Steel members are often connected to cast-in-place concrete using imbedded fasteners, such as anchor bolts and special steel plates. The plasticity of fresh concrete is exploited to conform precisely to the shape of the metal connector, then harden permanently. A composite slab also utilizes the plasticity of concrete to create mechanical bonds between the concrete slabs, and profiled steel decks and shear studs mounted to the top flange of steel beams.

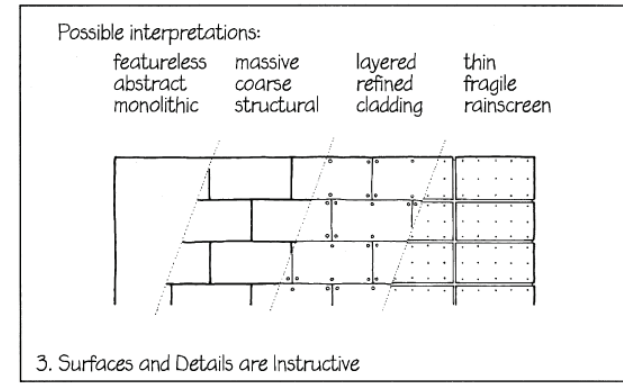
This book focuses on the fundamental principles that affect the design of architectural details.

These are the “patterns” that affect the function, constructibility and aesthetic qualities of a building. These detailing patterns can be used to produce countless effective detail solutions. Rather than being a review of stock details, this book guides the reader through the process of designing details.

Readers gain a working knowledge of a set of detailing principles that represent an accumulation of wisdom about what works in building construction and what doesn't. Many detail patterns are firmly grounded in scientific fact. Others are based just as solidly on common sense and the realities of human behavior.



Didactic Assemblies



3. Surfaces often reveal what is behind that surface, simply by revealing intrinsic facts about its materials and connections. Very little can be known about a featureless monolithic wall. But as soon as we can see seams between the pieces that make up the wall, we begin to get clues about its composition. When fasteners are seen, we immediately guess that the facing material is not load-bearing, and, from past experiences with such fasteners, we infer likely material thicknesses, strength, and other properties. When we see gaps between elements making up the surface, we speculate that this is a rainscreen, and we can begin to imagine possible wall sections that would produce such an appearance.

4. Legibility does not require that every feature be exposed. The seams between elements of the wall may be shown to give the wall surface a pleasing scale or proportion, but it does not require that all fasteners and other intrinsic features also be shown. Exposing all of the elements making up the assembly may distract from the intended grasp of its basic formal or spatial qualities. Detailers have many options to consider when creating architectural products that match their intentions. Decisions about what to reveal and what to conceal are among those options.

Reader comment on Amazon

Excellent! The primary use for me has been to establish a framework for detailing future projects - giving me the "why" and "how" of a WIDE variety of detailing options rather than the what. It provides a set of principles in support of detailing projects for protection from water, for graceful aging, using the minimum number of parts, etc., and then lets the architect do what architects do best - create meaningful solutions that both accomplish their purpose and reinforce the essence of the project. It goes so far beyond providing cut-and-paste solutions.

To use an analogy, this book will teach you how to fish. By teaching us how and why to fish, rather than providing a list of currently popular fish, this will be the definitive architectural detailing text for students, new and old professionals for many years to come.

Jake Heffington