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Modern Construction Envelopes

A new manual of architectural anatomy.

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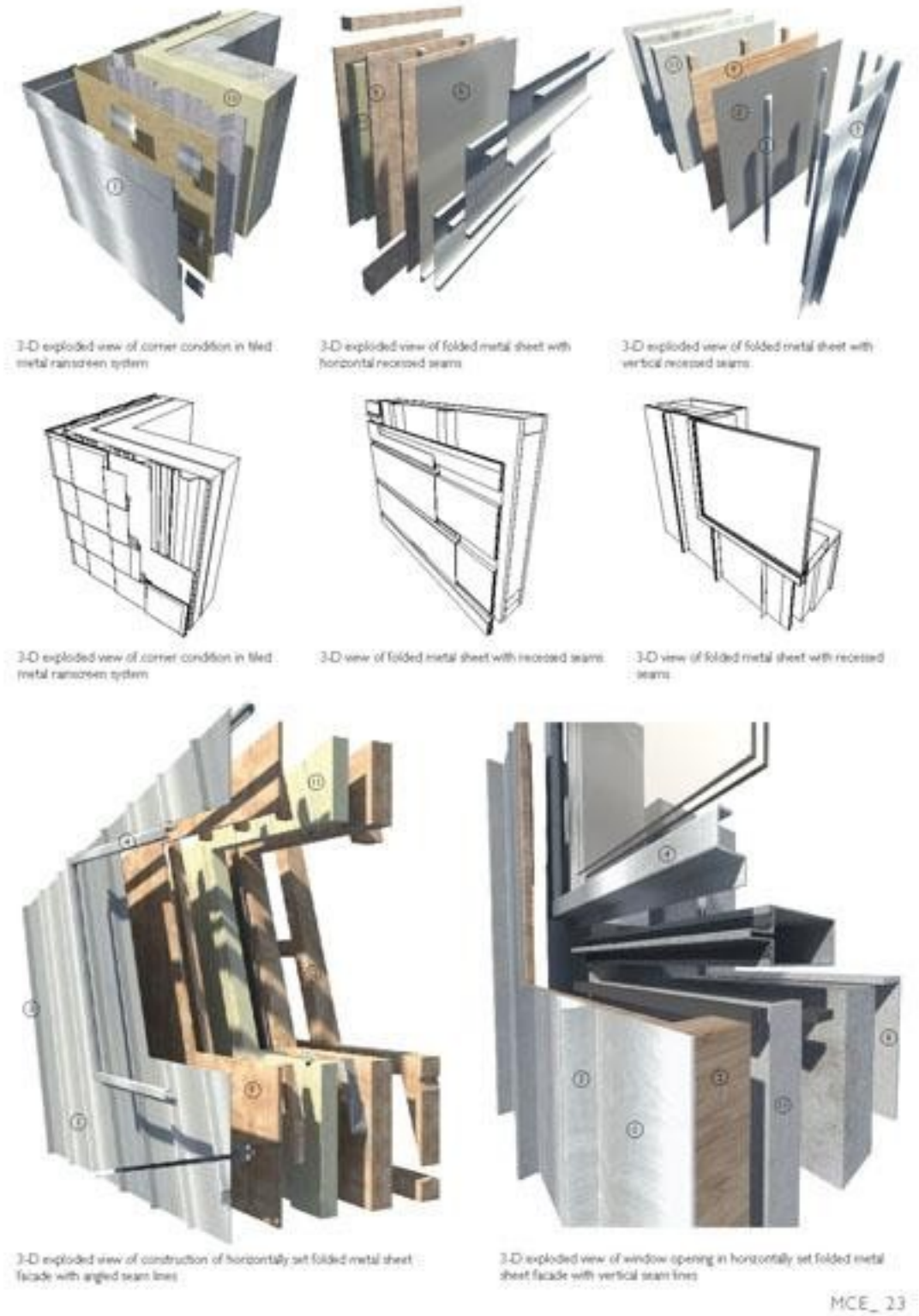
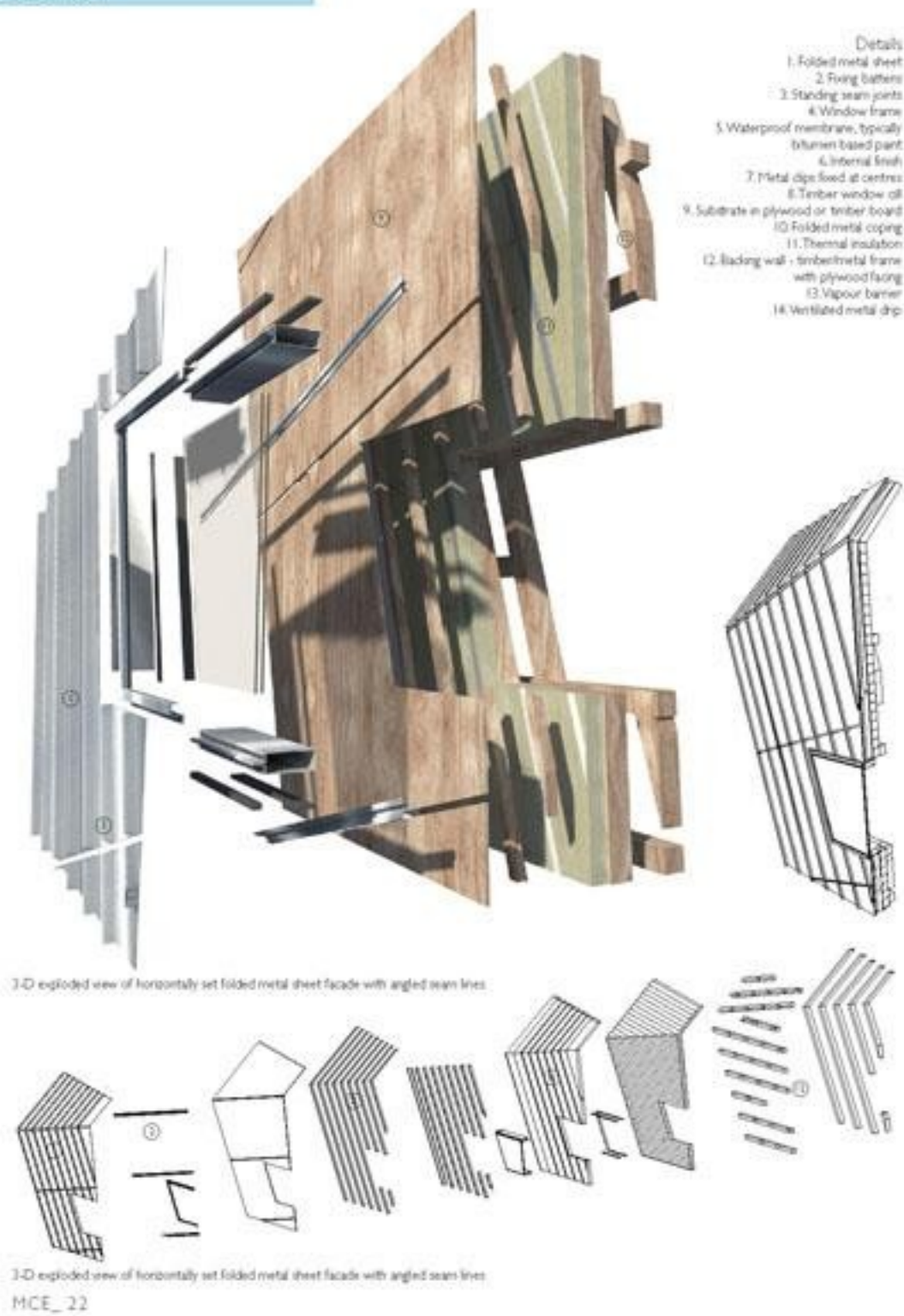
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Modern Construction Envelopes, Andrew Watts, Springer 2010
(pp. 522, € 83.15)

Andrew Watts, "façade specialist" and owner of the London studio newtecnic, combines two previous volumes, *Modern Construction Facades* and *Modern Construction Roofs*, into one massive tome that completely exhausts the topic of roofs and wall construction. In over 500 pages of uncoated stock, the numerous illustrations are organized into material themes: walls and roofs in metal, glass, concrete, masonry, plastic, wood and fabric, along with comparisons, methodologies and technological innovations, especially in the chapter on plastics. The volume also provides the latest techniques regarding traditional wood construction systems.

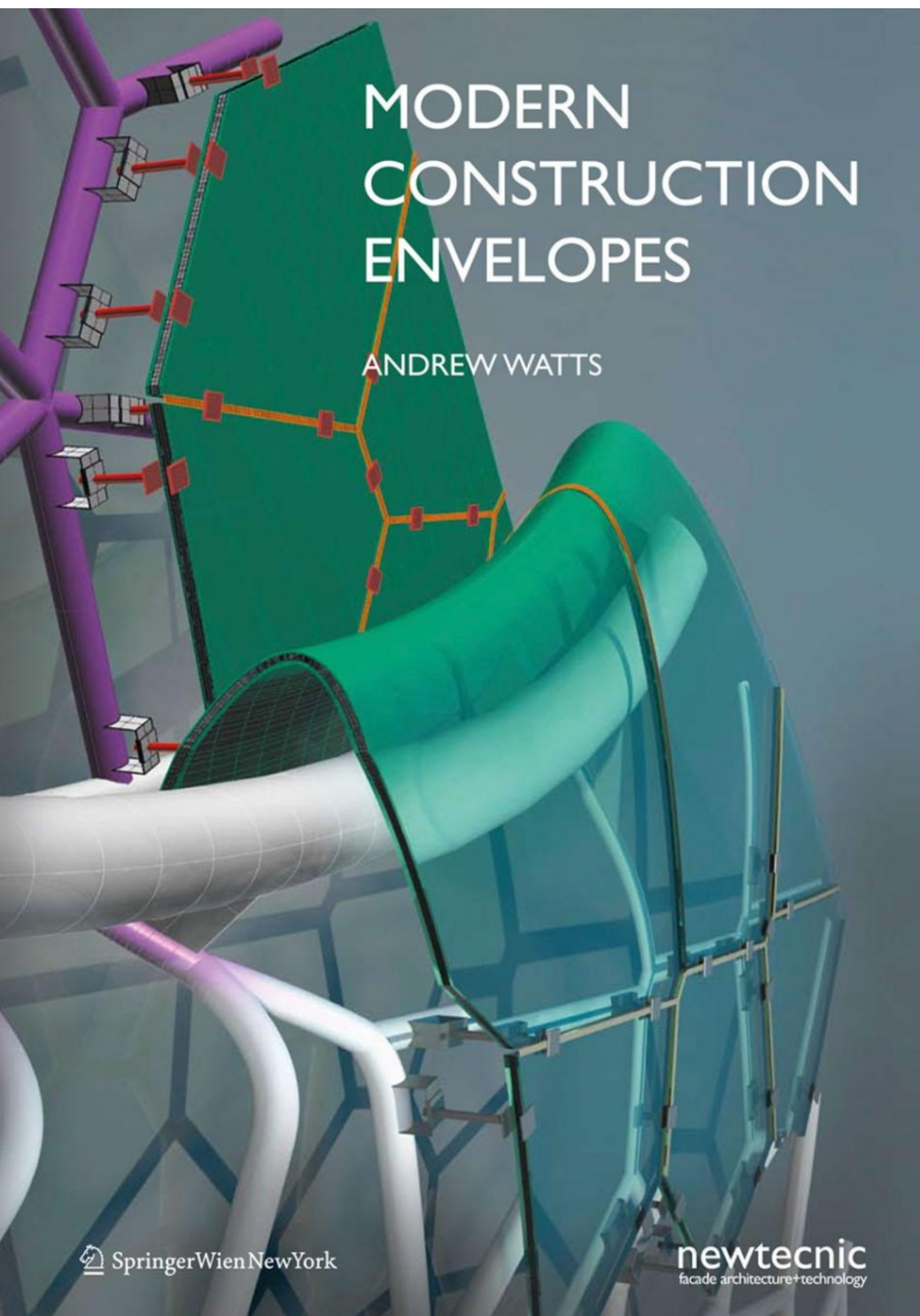
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↑ Left: technical detail of wall with sheet metal cladding and metal window, timber panelling, structure in timber and metal. Right: three types of sheet metal cladding: overlapping sheets, horizontal recessed seams, vertical standing seams.



From beginning to end—the façade clad in sheet metal to the barrel vault (finished in a single membrane fabric) in the last section—the case studies are meticulously documented with restrained and effective drawings. 3D renderings, axonometric views, plans and sections are all accompanied by the necessary information to facilitate the understanding of structures which, in many cases, are far from simple. The realism and completeness of every construction detail provide precise information to help the designer through the construction documents phase of the design project.



←

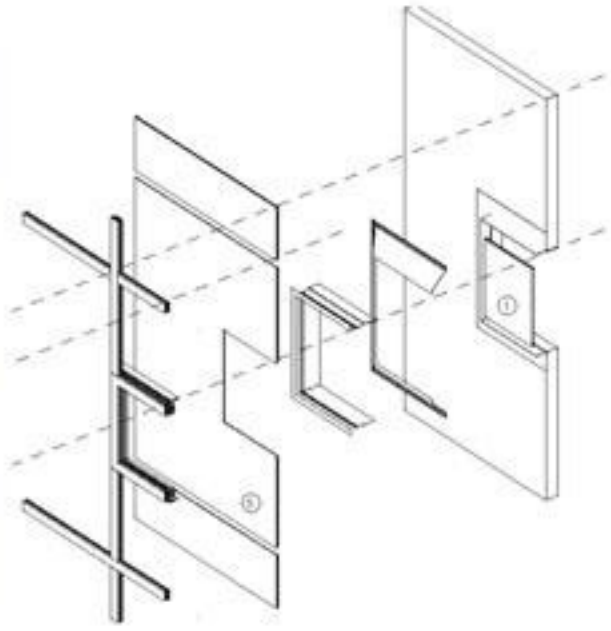
Modern Construction Envelopes by Andrew Watts, cover.

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Targeted mainly at students, this bible of construction shows first that it is impossible to reduce architecture to a universe of tiny conceptual signifiers, showing instead how to frame problems in technical terms instead. Supported by his arguments, Watts is opposed to any superficial aestheticism of architecture and so reminds us that every wall, every joint, every pane of glass must be designed, or chosen, based on their physical characteristics and technical and sensory power. In addition, it is clear that the real substance of design, on the scale of detail, is the connection between the constituent elements.



3-D exploded view of wall with aluminum window



Exploded axonometric view of wall with aluminum window



3-D view of top hung aluminum window open



3-D frame detail of top hung aluminum window open



3-D view of side hung aluminum window open

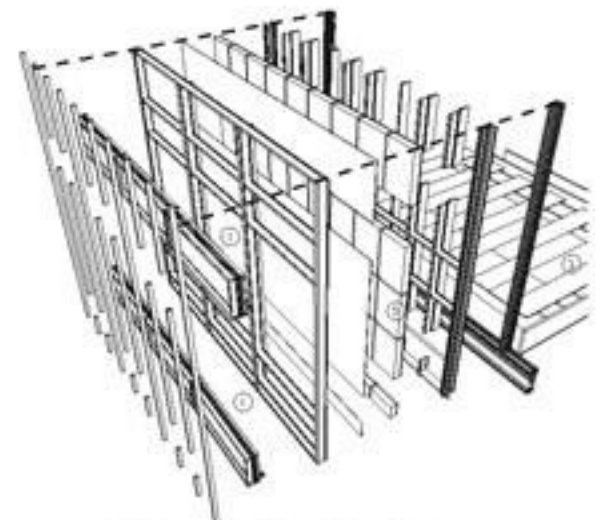


3-D detail of side hung aluminum window frame open

MCE_144



3-D view of wall with aluminum windows



Exploded axonometric drawing of wall with aluminum windows

- Details
1. Opening door or window
 2. Fixed light
 3. Floor slab
 4. Thermal insulation
 5. Surrounding wall
 6. Internal fixings
 7. Window sill



3-D exploded view of wall with aluminum window



3-D view of aluminum window exploded from wall



3-D view of aluminum window



3-D exploded view of aluminum window

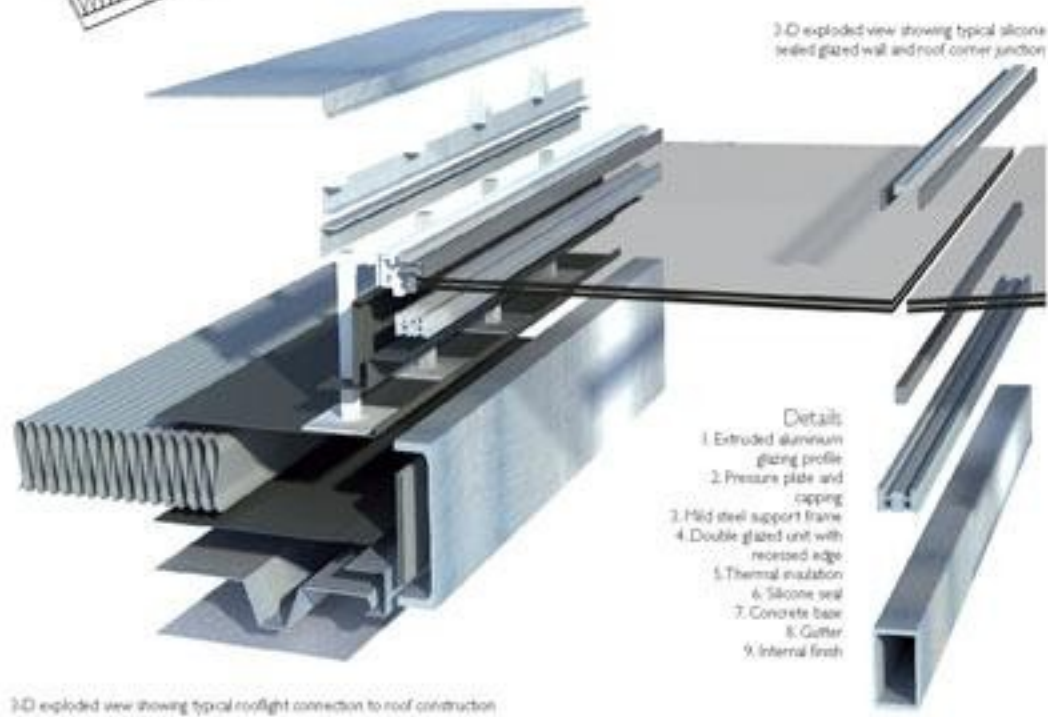
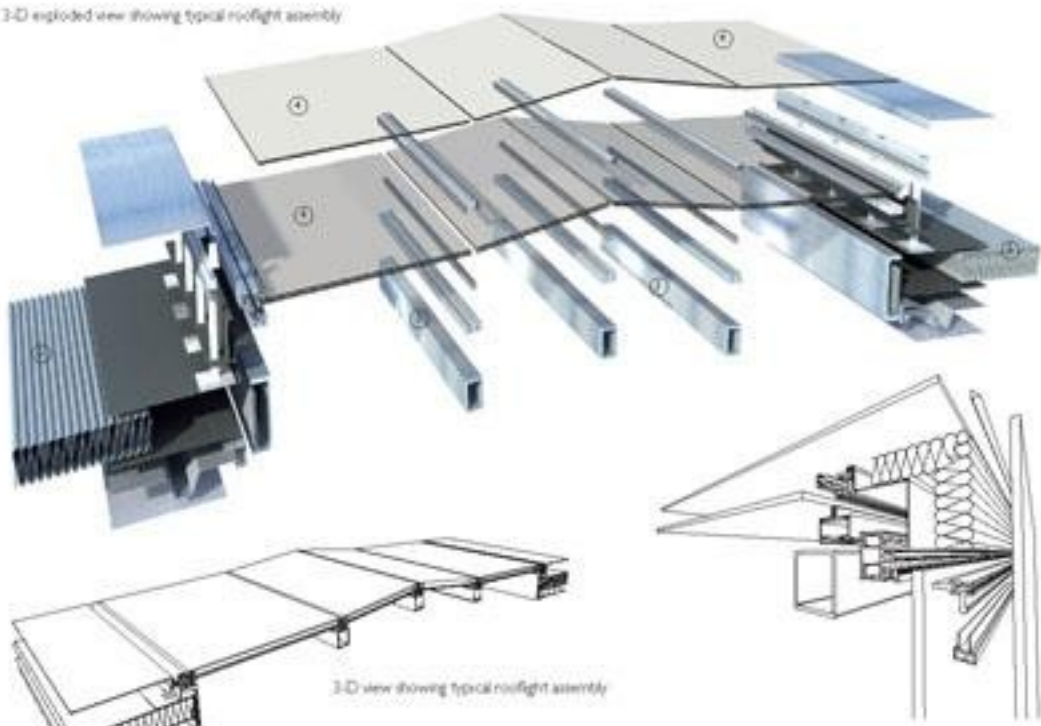
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↑ Left: wall with operable aluminum sash, 3D representations, axonometric and technical details. Right: wall with structure in timber and metal, wood floor and aluminum window.



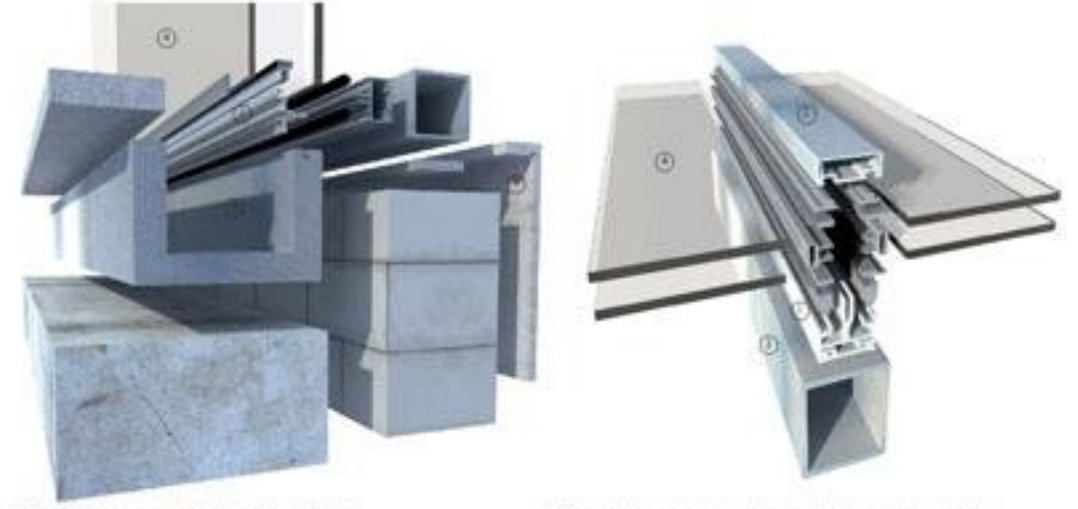
The book's massive scale subdivides, differentiates and decomposes architectural elements into individual parts which, in and of themselves, are devoid of specific connotations. A wood wall is an assembly of twenty-two elements; a roof eighteen, a glass roof twelve. Watts proceeds to clarify the construction aspect leaving architectural form as a side effect, a strategy that introduces an idea of architecture that we are not accustomed to. Contemporary practice is so drugged by formal research, conceptual refinements and minimalist balancing acts that tend to nullify the enormous complexity and technicality of building. Watts is an analyst who works on architecture like a pathologist leaning over a lifeless body, but in his drawings flash signs of a lively architecture firmly rooted in tectonics and performance.

3-D exploded view showing typical rooflight assembly



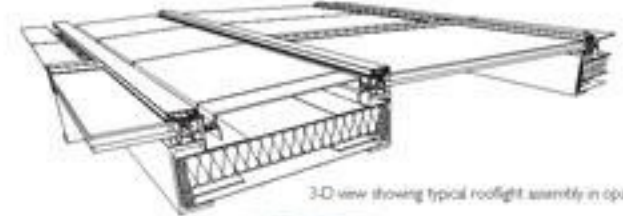
3-D exploded view showing typical rooflight connection to roof construction

MCE_356

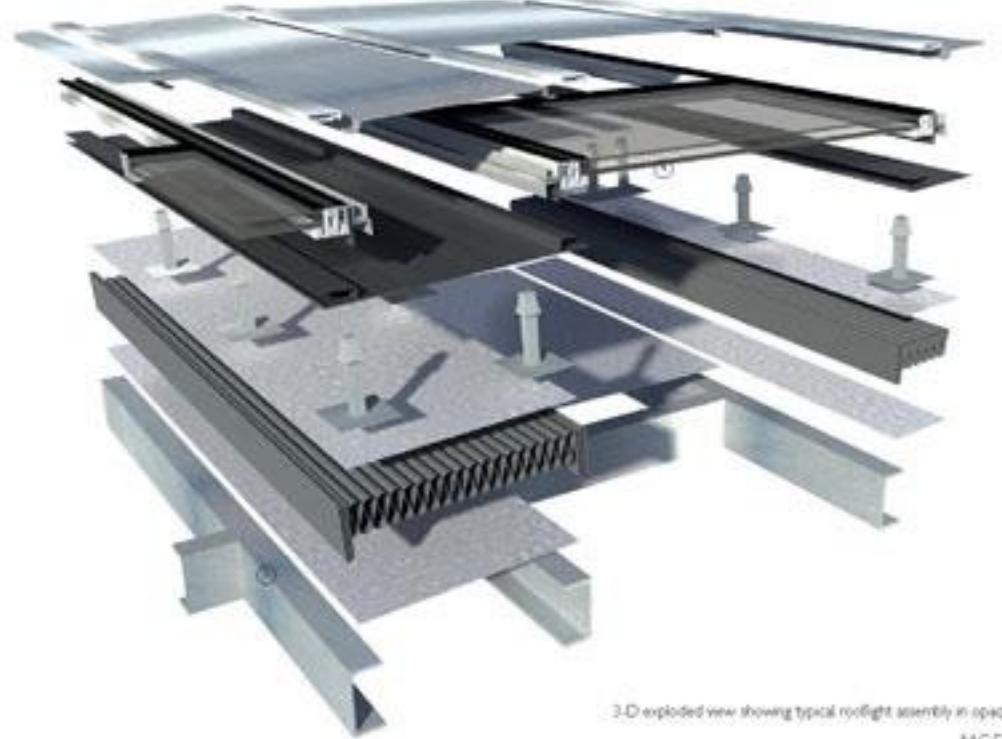


3-D exploded view showing gutter in silicone glazing

3-D exploded view showing panel to panel junction with capped glazing



3-D view showing typical rooflight assembly in opaque roof

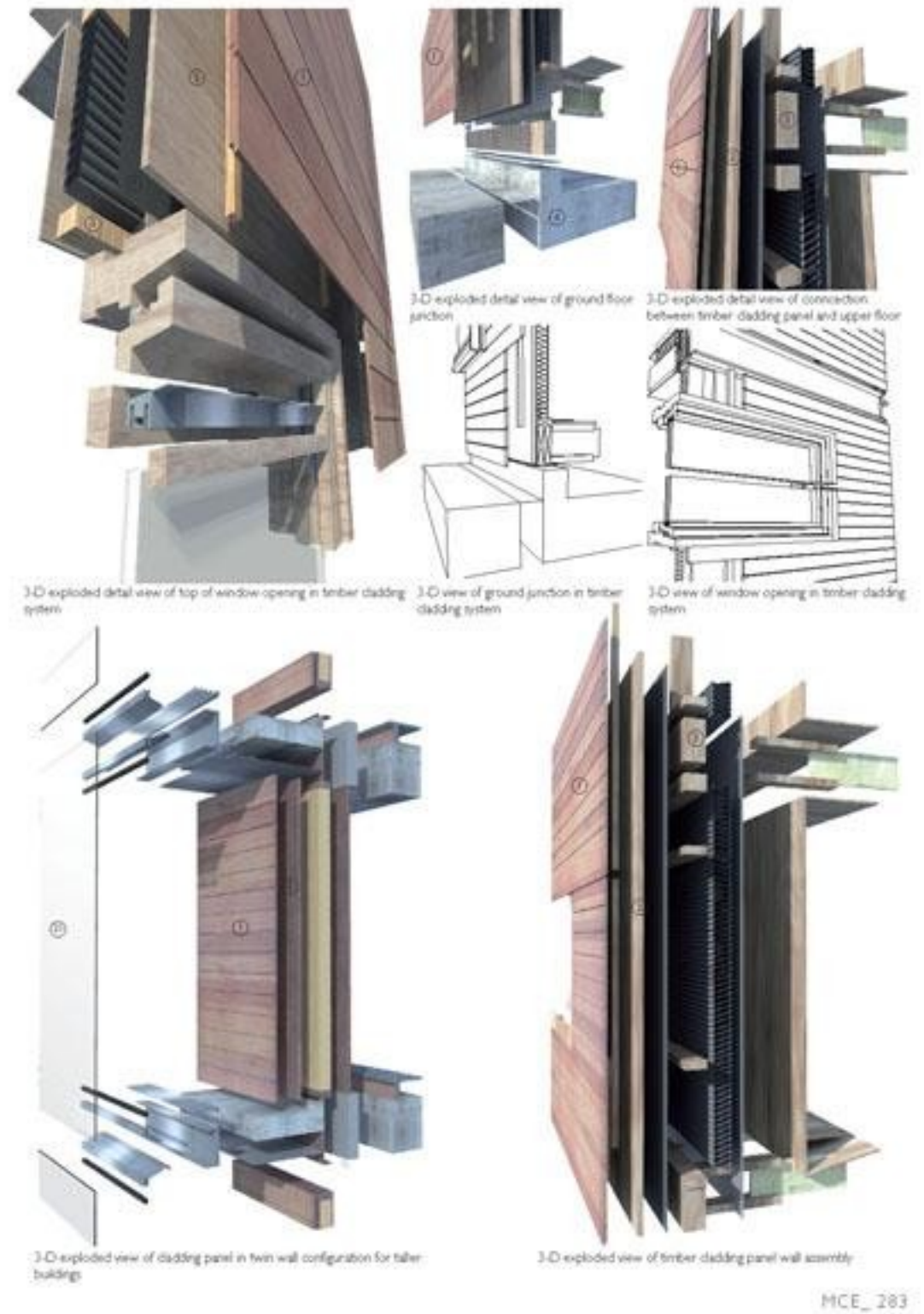


3-D exploded view showing typical rooflight assembly in opaque roof

MCE_357

↑ Left: glass skylight with silicone seals and sash in extruded aluminum. Right: glass roof, gutter details and detail of rooflight assembly on opaque roof.





↑ Left: wall in timber boards in a building with a steel structure: louvre screen details, exterior panel details, window details. Right: timber wall, details of operable windows, detail of ground floor connections and connection between timber cladding and upper floor, detail of the most appropriate configuration in taller buildings.



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Alessandro Rocca

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E MILANO È LA SUA CAPITALE.



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