Design in Masonry: Integrating Intention, Industry, and Constructing

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This paper will describe a graduate architecture seminar that integrates construction industry support with design intention by simultaneously combining knowledge of constructing experiences, technical explorations of design intentions, industry expertise, and material support. Four overlapping operations emphasize masonry construction's traditions, opportunities, and limitations while also approximating common design practices: the development of specific design intentions for transformation; the application of those intentions in the redesign of an existing building; evaluating design criticism provided by industry for incorporation in design information systems; and fabricating and then constructing a masonry element from detail documents used to construct a design. The design context is provided by a three-story dormitory, originally located in Austria, sited in a residential area adjacent to the University of Minnesota campus. This building is analyzed for its adaptability to masonry as structural frame and the envelope's material form, considering mechanical and interior finish systems, durability, constructability, weathering, appearance, context, function, and cost. A preliminary scheme undergoes several major revisions after two reviews with masonry contractors and supervisors and the construction of a masonry wall component. The final conclusion, a reflection on the various inputs, includes a commentary on the original design rationale; design presentation drawings such as dimensional plans and elevations, detailed section/elevations; details at major joints; and an '04200' outline specification.

The curriculum for the course emerged as a natural spin-off from several years of masonry detailing and demonstration exercises contained within required introductory courses in construction materials and methods in architecture. Two other important conditions coexisted: the Department of Architecture needed technology electives in building methods that could extend design thinking into processes of information and document production; and the masonry industry's perception that the design professions needed young graduate architects with a fuller appreciation and knowledge of masonry's appeal and quality as both a structural and cladding system. These exercises, supported by the Minnesota Masonry Institute's membership, who provided funds for teaching assistantships, materials, and masons, demonstrate skills and assist students with building demonstration.

Editor's note: The full text of this paper was not available at the time of publication.