

Looking at **Alexander J. Hahn's written work as a whole**, there are really two rather different bodies of writing to assess: his **specialist research mathematics** and his **expository/textbook writing**.

His most distinctive work for a general or interdisciplinary audience is *Mathematical Excursions to the World's Great Buildings* (Princeton University Press, 2012). It uses geometry, trigonometry, conic sections, calculus, statics, and related mathematics to explain structures ranging from the Parthenon and Hagia Sophia to the Sydney Opera House. Contemporary reviews were unusually positive: reviewers described it as lucid, richly detailed, accessible, and successful at balancing mathematical development with architectural and historical material. It also received the 2012 PROSE Award in Architecture & Urban Planning.

ChatGPT's Assessment

Mathematical quality: high. Hahn is a serious research mathematician rather than a popular writer approaching mathematics from outside the discipline. That matters because his expository writing tends to derive things rather than merely announce that "mathematics is hidden in architecture." His specialist interests—including quadratic forms, Clifford algebras and related algebra—are substantially more advanced than the mathematics required by his books for broader audiences.

Expository quality: particularly strong. This may actually be the most interesting feature of his writing. He seems comfortable moving between rigorous mathematics and historical/physical intuition. Reviews of *Mathematical Excursions* repeatedly emphasize its readability, diagrams, mathematical explanations and integration of historical background; one review characterized the book as balancing the richness of the buildings with substantial development of the mathematics.

Pedagogically, he is ambitious. Hahn doesn't appear to believe mathematics should be presented as a collection of disconnected computational procedures. His later *Calculus in Context* develops mathematical preliminaries—including geometry, trigonometry, algebra and coordinate geometry—in historical/contextual settings before and alongside calculus. That suggests a fairly coherent educational philosophy: **understanding where mathematical ideas come from and what problems they solve is part of understanding the mathematics itself.**

There is a trade-off. Hahn's interdisciplinary approach can be **denser and slower than a conventional textbook**. A reader wanting only a streamlined sequence of definitions → theorem → examples → exercises may find the historical and architectural development excessive. Conversely, a reader interested in *why* mathematics developed and how abstract mathematics interacts with physical structures is likely to find precisely that material valuable. Reviewers similarly note the substantial depth and breadth of the architectural book rather than treating it as lightweight popular mathematics.

I'd therefore rate his writing approximately **9/10 for mathematical authority, 8.5–9/10 for exposition, and exceptionally high for connecting mathematics with history, architecture and culture**. His distinctive strength isn't literary elegance for its own sake; it's his ability to make substantial mathematics intelligible without stripping away the mathematical substance.