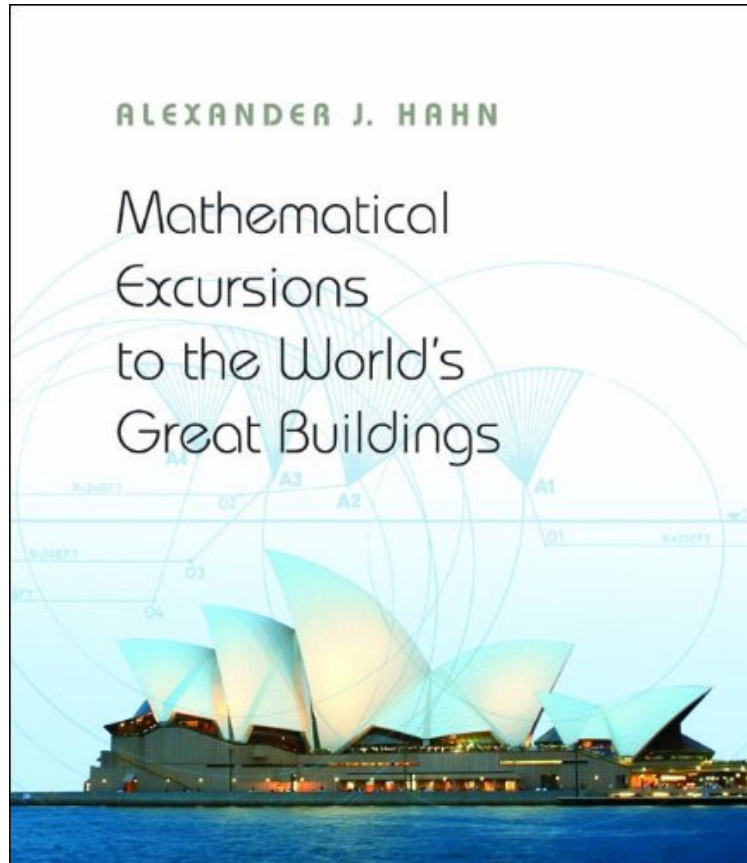


Mathematical Excursions to the World's Great Buildings

Alexander J. Hahn

ebooks | Download PDF | *ePub | DOC | audiobook



DOWNLOAD



READ ONLINE

#1665974 in eBooks 2012-07-22 2012-07-22 File Name: B008NGTGCQ | File size: 42.Mb

Alexander J. Hahn : Mathematical Excursions to the World's Great Buildings before purchasing it in order to gage whether or not it would be worth my time, and all praised Mathematical Excursions to the World's Great Buildings:

0 of 0 people found the following review helpful. A mathematician's guide to great architectureBy Joe P.I have used this book as the textbook for a study-abroad class I teach in Rome (Mathematical Beauty in Rome, a UCSD Global Seminar) on the architectural geometry and structural engineering of Roman monuments. Prof. Hahn has given us a wonderful book - clear and carefully written, wide-ranging, mathematically sophisticated - with discussions and problems that will challenge students in engineering and mathematical disciplines. Aside from its value as a textbook, it is a pleasure to read for any technically-minded person, especially if you have a passion for architecture. My advice: read the book, and then take a trip - your own "mathematical excursion" - to visit the sites (with book in hand) that are discussed, and you will have a uniquely delightful travel experience.Note: I have both hardcover and Kindle editions - both are well done.0 of 0 people found the following review helpful. Interesting excursions!By BJOslash;RN
FELSAGERAny book trying to bridge mathematics and architecture in a historical perspective is most welcome, and Alexander Hahn has certainly collected some very interesting examples and succeeded in putting them into an appropriate perspective. Unavoidable he has had to make some simplifications but he is not always making them clear

to the reader. E.g. he is making an assumption about Utzon's sail that is only approximately fulfilled and only for the second sail. The point A does not have the same height as the center of the sphere as is clear from Yuzo Mikami's illustration on the same page and therefore you cannot rotate the sphere so that A lands on the y-axis. But apart from such minor nuisances I really enjoyed reading the book! 1 of 1 people found the following review helpful. Whew, didn't realize I needed a master's degree in math. By Hencha friend, who is also an architect, told me of this book and said it was fascinating. Got the book and am also fascinated by the whole concept. It was written by an obviously talented mathematician who apparently thought advanced math was understood by a typical reader. His writing is clear and logical and, with much effort, I can sort of follow his concept. I am constantly amused by his elegant formulas and derivations that look like no formulas I have ever seen. Bottom line: better be real good with math to fully enjoy this book.

From the pyramids and the Parthenon to the Sydney Opera House and the Bilbao Guggenheim, this book takes readers on an eye-opening tour of the mathematics behind some of the world's most spectacular buildings. Beautifully illustrated, the book explores the milestones in elementary mathematics that enliven the understanding of these buildings and combines this with an in-depth look at their aesthetics, history, and structure. Whether using trigonometry and vectors to explain why Gothic arches are structurally superior to Roman arches, or showing how simple ruler and compass constructions can produce sophisticated architectural details, Alexander Hahn describes the points at which elementary mathematics and architecture intersect. Beginning in prehistoric times, Hahn proceeds to guide readers through the Greek, Roman, Islamic, Romanesque, Gothic, Renaissance, and modern styles. He explores the unique features of the Pantheon, the Hagia Sophia, the Great Mosque of Cordoba, the Duomo in Florence, Palladio's villas, and Saint Peter's Basilica, as well as the U.S. Capitol Building. Hahn celebrates the forms and structures of architecture made possible by mathematical achievements from Greek geometry, the Hindu-Arabic number system, two- and three-dimensional coordinate geometry, and calculus. Along the way, Hahn introduces groundbreaking architects, including Brunelleschi, Alberti, da Vinci, Bramante, Michelangelo, della Porta, Wren, Gaudí, Saarinen, Utzon, and Gehry. Rich in detail, this book takes readers on an expedition around the globe, providing a deeper understanding of the mathematical forces at play in the world's most elegant buildings.