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J. L. Berggren* (berggren@sfu.ca), Department of Mathematics, Simon Fraser University, 8888 University Drive, Burnaby, B.C. V5A 1S6, Canada. *Geometry and Architectural Design in Medieval Islam.*

Islamic architecture is famous for its striking tile designs – those of the Alhambra being the most well known. In the tenth century C.E. the mathematician Abu al-Wafa' al-Buzjani wrote a book on the mathematical techniques needed by medieval Islamic artisans, in which we find much material relating to the design of such tilings. Abu al-Wafa is known to have discussed these problems with artisans, and was sensitive to their requirements, but he also exposed their errors and treated his problems strictly from a mathematical point of view. In this talk we shall discuss some of Abu al-Wafa's problems and his solutions, including problems dealing with so-called 'rusty compass' constructions and geometrical dissections. (Received July 17, 2008)