

Evolution of Islamic Geometrical Patterns

Mohamed Rashid Embi (Corresponding author)
Faculty of Built Environment, Universiti Teknologi Malaysia, 81310 Skudai Johor, Malaysia
Tel: +607-5530726 E-mail: rashid@utm.my

Yahya Abdullahi
Faculty of Built Environment, Universiti Teknologi Malaysia, 81310 Skudai Johor, Malaysia
Tel: +6017-7121251 E-mail: yahya_ae@yahoo.com

Abstract

Although Islam gives function and not form, Islam as a context has affects on forms and ornaments in somewhat. The great role of geometry in Islamic architecture due to restriction of using natural figures is an example. In this research, the application of Islamic geometrical patterns (IGPs), and suitability of their usage over architectural elements in terms of time-scale accuracy and architectural-style matching is studied. A detailed survey of hundred well-surviving buildings throughout the Muslim world of architecture has been conducted for this purpose and as a result, not only origin of patterns identified, but also radical artistic movements throughout the history of Islamic geometric ornaments revealed. Finally, this study sketches the evolution of IGPs through history, while regional diversities are also taken into account.

Keywords: Islamic; Decorative; Geometrical; Patterns; Art; Architectural decoration

References

- Antoniou, J. (1998). *Historic Cairo: A walk through the Islamic city*: The American University in Cairo Press, Cairo, Egypt.
- Asher, C.E.B. (1992). *Architecture of Mughal India*. Cambridge University Press, Cambridge, United Kingdom.
- Baer, E., (1999). *The Human Figure in Early Islamic Art: Some Preliminary Remarks*. pp. 32-41
- Behrens-Abouseif, D. (1992). *Islamic Architecture in Cairo: An Introduction*. Brill, Leiden, New York, USA.
- Behrens-Abouseif, D. (2007). *Cairo of the Mamluks: A History of the Architecture and its Culture*, I.B. Tauris & Co. Ltd, Salem Road, London.
- Berkey, J. P. (2003). *The Formation of Islam: Religion and Society in the Near East, 600-1800*. Cambridge University Press, Cambridge, United Kingdom.
- Blair, S. & Bloom, J. M. (1995). *The Art and Architecture of Islam, 1250-1800*. Yale University Press, New Haven, USA.
- D'Avannes, P. & Scanlon, G. T. (2008). *Islamic Art in Cairo: From the Seventh to the Eighteenth Centuries*. American University in Cairo Press, Cairo, Egypt.

- El-Said. (1993). *Islamic Art and Architecture: The System of Geometric Design*. Garnet Publishing, Southern Court, United Kingdom.
- Ettinghausen, R., Grabar, O., & Jenkins, M. (2001). *Islamic Art and Architecture, 650-1250*. Yale University Press, New Haven, USA.
- Fletcher, B. & Cruickshank, D. (1996). *Sir Banister Fletcher's a History of Architecture*. 20 ed. Architectural Press, Jordan Hill, Oxford, London.
- Flood, F.B. (2001). *The Great Mosque of Damascus: Studies on the Makings of an Umayyad Visual Culture*. Brill, Leiden, New York, USA.
- Freely, J. (2011). *History of Ottoman Architecture*. WIT Press, Southampton, United Kingdom.
- Goodwin, G. (1991). *Islamic Spain*. Penguin, London, United Kingdom.
- Grube, E.J. & Michell, G. (1995). *Architecture of the Islamic World: Its history and Social Meaning : With a Complete Survey of Key Monuments and 758 Illustrations, 112 in Colour*. Thames and Hudson, United Kingdom, London, United Kingdom.
- Hillenbrand, R. (1999). *Islamic Art and Architecture*. Thames and Hudson, London, United Kingdom.
- Kuban, D. (1974). *Iconography of Religions: Islam. Muslim Religious Architecture. The Mosque and its Early Development*. Brill, Leiden, New York, USA.
- Kuban, D. & Emden, C. (2010). *Ottoman Architecture*. Antique Collectors' Club, Woodbridge, England.
- Lapunzina, A. (2005). *Architecture of Spain*. Greenwood Press, Westport, London.
- Mohamed, M. (2000). *Great Muslim Mathematicians*. Universiti Teknologi Malaysia, Skudai, Malaysia.
- Özdural, A., & Omar, K. (1995). Mathematicians, and "Conversazioni" with Artisans. *Journal of the Society of Architectural Historians*, 54(1): 54-71.
- Petersen, A. (1996). *Dictionary of Islamic architecture*. Routledge, New Fetter Lane, London.
- Rabbat, N. (1996). Al-Azhar Mosque: An Architectural Chronicle of Cairo's History. In *Muqarnas Volume XIII: An Annual on the Visual Culture of the Islamic World*. Gülru Necipoglu (ed.) Leiden: E.J. Brill. pp. 45-67.
- Spurr, J. B. & Riedlmayer, A. (1994). *Resources for the Study of Islamic Architecture*. Cairo: The Aga Khan Program for Islamic Architecture.
- Turner, H. R. (1997). *Science in medieval Islam: An Illustrated Introduction*. University of Texas Press, Texas, USA.

Yeomans, R. (2006). *The Art and Architecture of Islamic Cairo*. Garnet Pub. Ltd., South Street, United Kingdom.