

Oasis of Contemplation

Marks Barfield's new Cambridge Central Mosque makes a successful synthesis of English and Islamic architectural traditions, finds Michael Badu

Photos

Morley von Sternberg



Below

View from Mill Road, entrance portico and brickwork detail.

The use of brick cladding hung from the CLT walls recalls the use of mathematical tiles on wooden buildings in the south-east of England in the eighteenth and nineteenth centuries, suggests Marks Barfield. Bricks were chosen to reflect the light buff-colour 'Gault' Cambridgeshire brick and contrast with a red tile.

The prospect of a new mosque in Cambridge, the first to be purpose-built in the city, has been a cause of some excitement for those familiar with the work and thought of Tim Winter, head of the School of Divinity at the University of Cambridge and the mosque's chief patron. The fact that Winter is a famous British Muslim convert and a noted Islamic scholar at the forefront of efforts to root the Islamic faith in British culture (he once edited a book entitled 'Muslim Songs of the British Isles') meant that this institution was always going to be quite different from those that have come before. Throw into the mix that Winter is also the son of the late respected modernist architect John Winter, and you have all the ingredients of patronage required to achieve a building that for once is not imported pastiche.

Marks Barfield Architects (MBA) won a 2009 invited competition to design the building, and the question of "what a 'British mosque' could be like" is what fascinated the team from the start, says Julia Barfield.

Taking the structural fan vaulting of English Gothic cathedrals as its inspiration, the competition-winning scheme featured calm, contemplative, cave-like spaces framed by structural stone vaults with light filtering in from above; there was no minaret and there was no dome. However as Barfield explains, technical challenges precipitated changes that have turned out on balance to be welcome improvements.

Key

- 1 Community garden
- 2 Islamic garden
- 3 Front portico
- 4 Atrium
- 5 Cafe
- 6 Kitchen
- 7 Teaching
- 8 Lobby
- 9 Male ablutions
- 10 Female ablutions
- 11 Prayer hall
- 12 Mother and child space
- 13 Rear portico
- 14 Mortuary
- 15 Imam residence
- 16 Student residence

Right, below

Ground floor plan and massing model. The site, on the busy Mill Road, is in a predominantly residential area with buildings of two and three storeys.

"The aim was to create a building massing respectful of its surroundings – but that somehow fits in and stands out at the same time", says the architect.

The building comprises three main parts: the front portico and atrium address Mill Road and are set back. The ablution areas are lower, allowing plant to be hidden on the roof. The prayer hall – the principal and tallest block – is set deep in the site and oriented towards Mecca.

The mosque can accommodate 1000 worshippers and has a net internal area of 2340 square metres, with an additional 2560-square-metre basement.



First, the columns. The idea for structural stone vaulting could not be made to work satisfactorily with current technology and it was discovered that the architect's absolute requirement for an expressive architecture of real tectonic veracity could be affordably had if it was made of timber. This change in material corresponds well to the architects' original inspiration for the building in "the garden of Paradise, or a walled garden with water as the source of all life", as Julia Barfield puts it. "Our idea was a calm oasis for contemplation, under a grove of trees". (Early computer models show this reconception quite literally illustrated.) There is a palpable congruity between these foundational aspects of the design, the built spaces and a strong sustainability agenda (on-site emissions are zero-carbon).



Second, the Hydra-like client body, headed by Winter but balancing multifarious interests, from local Muslim groups to international funding organisations, wanted a dome. Its integration with other parts of the scheme owes much to the graphic patterns derived from the geometry of the building by master geometer and former tutor of Julia Barfield and David Marks at the AA, professor Keith Critchlow. The planning process stipulated the involvement of an artist in the project, and Critchlow collaborated with the architects from the competition stage, contributing the Islamic 'Breath of the Compassionate' motif which is produced by combining a horizontal square with a diagonal one. Through skilful manipulation of this geometry, the designers have fashioned a tacit harmony that manages to hold the avowedly disparate elements of the scheme in a heroic tension.

The timber column/vault trees are based in plan on the 'Breath of the Compassionate', which gives rise to an intricate lattice ceiling from which the tree-columns emerge as bundles of engineered-spruce flutes that come together in a tight circle at their base. This is all subtly registered on the structural cross-laminated timber (CLT) walls of the prayer hall by tiny octagonal stained-glass windows aligned with the principal axes of the ceiling lattice. This delicate unity is disrupted by the dome which is positioned directly over the mihrab (imam's prayer niche), providing what turns out to be vital directionality to the perfectly square prayer hall. Internally the dome is spherical, and features a complex pattern executed in glass-reinforced plaster.

Something of the essential qualities of the finished scheme can be gleaned from an understanding of the process involved in the design and execution of these elements. Beautiful hand-drawings attest to the avowedly analogue nature of Critchlow's design method. The drawings were translated via Rhino into 3D CAD models by MBA before being sent to specialists for refinement and fabrication. What was finally delivered to site at the end of this process in both cases was something finished with a human touch.

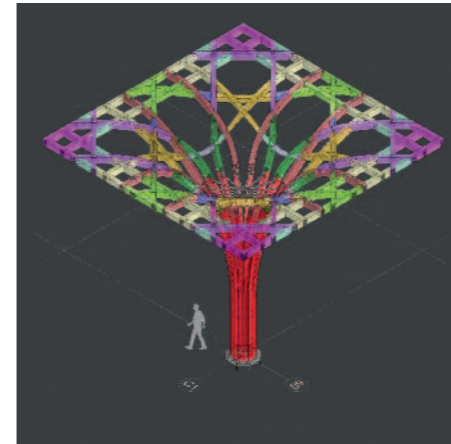
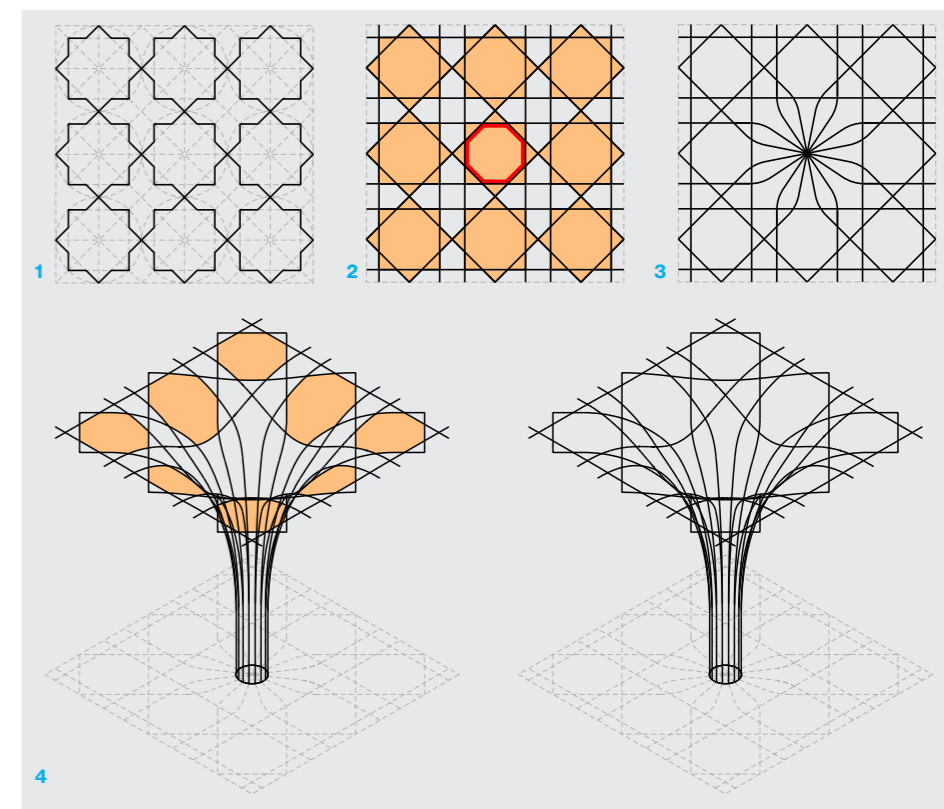
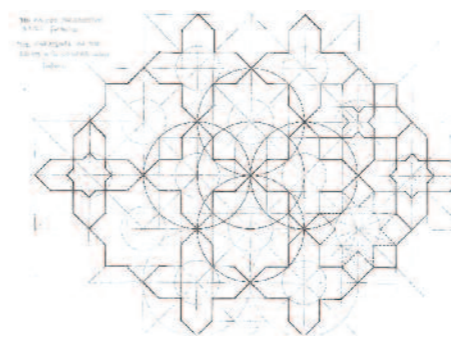
Bottom

The atrium and prayer hall. The glass oculus above each column contributes to the building's daylighting and natural ventilation strategy.

Right

The 'Breath of the Compassionate' pattern drawn by Keith Critchlow; fabrication model of tree structure components; and diagrams illustrating the progression of the design: the Breath of the Compassionate pattern (1) is joined to form a continuous structural grid (2), brought a point at columns (3), and projected onto vaulted 3D form (4).

The historic Islamic pattern "evokes breathing in and out, the rhythms of life", says the architect. "The repeating star octagons are converted into a continuous structural pattern and projected onto the three dimensional fan vaulting form. Alternate octagons are converted to the structural columns or 'trunks'. There are 30 trees, creating an overall impression of calm, stillness, stability, quiet and focus, combined with a strong sense of place."



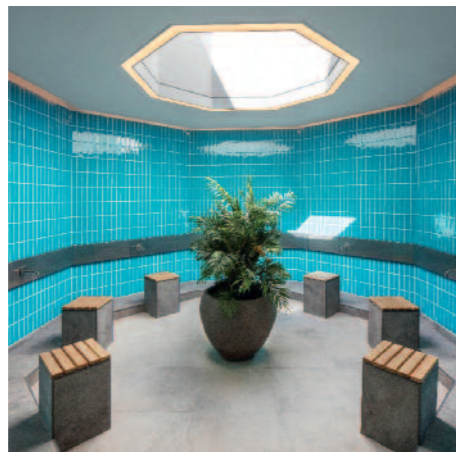
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Female and male ablution areas.

Below

Decorative screen detail and marquetry to timber doors (phs: Matt Wingrove); brick tiles, crenellations and octagonal window (ph: Jephtha Schaffner).

Brick tiles are arranged to form Square Kufic writing — a grid-based form of Arabic calligraphy where positive and negative space must be balanced. Used in relief, it is referred to as ‘hazarbaf’, Persian for ‘thousand weavings’, and is found in mosques and mausoleums across the Islamic world. Using a 50mm-high Dutch brick tile, a rotated square pattern was formed which says, in Arabic, ‘say he is God, (the) one’.



Approaching the mosque from the south, the dome, finished in gold metal, has a bulbous verticality which, along with the avowedly contextual Gault/terracotta brick-tile walls (sporting a repeated and rotated inscription in Kufic Arabic which reads ‘One God’) and its crenelated copings, provide a whiff of St Marks Venice and eastern exotica as filtered by that city. It is from this southern approach that one begins to appreciate the generosity and intelligence of the chief architectural personality behind the scheme; David Marks’ Callicrates to Critchlow’s Phidias.

Given the standard directional constraints of mosque design, the site was a difficult one, narrow and running north-south, but from this apparent disadvantage MBA has made a sort of secular liturgy that embeds the local community into the scheme.

You encounter first the main gate, whose railings are based on the spreading branches of the tree vaults. This gives onto a pre-existing community garden which — in a lovely gesture of acceptance — has been made integral to the mosque complex. Beyond lies an Islamic-themed garden, designed by leading authority Emma Clark, containing a stone fountain, aromatic planting and — adding a touch of Englishness — crab-apple trees which will register the changing of the seasons. Beyond this lies the entrance portico and your first encounter with the tree columns which seem almost to reach out over and across the gardens to embrace you from the street. The portico leads through a composite metal and timber curtain wall to a stone-paved court sheltered by four tree-vault columns.

A timber-lined education centre to the left of this space, and a kitchen and public cafe to its right, confer upon it an intelligent and efficient multivalence; it is a lecture hall, function space, square and also a ceremonial prelude to the prayer hall which lies just beyond. It also functions as an architectural prelude since it is here that the language of the project is elaborated to its fullest extent.

In a well-judged inversion of ceremonial logic, the climax of this procession, the prayer hall, is extremely plain by comparison. The oak panelling that gives the education centre its bookish character, is here kept to a low dado height, revealing the structural cross-laminated timber (CLT) walls, which along with the soffit are painted white but otherwise presented in their naked state. The surface of the CLT has already visibly begun to crack in places but instead of reading as a flaw it makes wonderfully palpable the structural work being done by all the material that surrounds you, as in a ruined Byzantine church. And just like a Byzantine church, light filters into the space from above, in this case via oculi positioned directly above each tree-column (à la Norman Foster at Stansted airport).

This reticence and directness is a great gift from Marks Barfield and makes this space very effective for prayer. The Prophet's original mosque at Medina (built following his escape from persecution in Mecca) was in fact a grove of trees surrounded by simple walls, and there is a sense here of cutting through years of distortion and division of the faith (the mosque is intended to be non-sectarian) to evoke simpler times.

As is customary, the prayer-hall is turned towards Mecca, creating a left-over 'knuckle' between it and the stone court that contains the required wash rooms. From the street, this 'turn' in the architectural procession pleasantly disrupts the visual mass of the building and imparts a cascading gesture of recession to the complex, crowned by the golden dome. It's a welcome antidote to the more domineering structures of this type that one often encounters.

Julia Barfield reports that there was strong female representation on the client body and this has led to some intelligent consideration of women's needs in a mosque. They have the choice of a balcony overlooking the square of the prayer hall or a screened section within it towards the rear (the screen is movable and is not continuous). There is also an acoustically-treated mother and child room behind the screened women's section that has direct access to a play yard.

Marks Barfield is to be applauded for a truly sustainable, unique and thoughtful building that is true to Islam, true to Cambridge and also true to a peculiarly intelligent, confident and optimistic tradition of English architecture that harks back to Paxton's Crystal Palace and also takes in many of the country's best ever architects. It is a fitting epilogue to the career of David Marks, who tragically did not live to see the completion of this quiet masterpiece. ↗

Project team

Client
Cambridge Mosque Trust
Architect
Marks Barfield Architects
Project manager, planning consultant
Bidwells
Structural engineer
Jacobs (planning), Price & Myers (construction)
Timber engineer
Blumer Lehmann
Services engineer
Skelly & Couch
Landscape architect
Emma Clark with Urquhart & Hunt
Geometric artist
Professor Keith Critchlow
Cost consultant
Faithful & Gould
Timber consultant
Smith & Wallwork
Main contractor
Gilbert-Ash

Selected suppliers & subcontractors

Glulam columns, CLT
Mayr-Melnhof Holz
Brick tile cladding
Weinerberger Corium (Taylor Maxwell)
Cast stone
Haddonstone
Timber curtain wall
Raico
Rooflights
Roofglaze
Lighting
Spectral
Tiles
Kale, Intermarmor, Domus
Dome cladding
KME Tecu Gold
Carpet
Ege
Dome Internal Lining
Blenheim Fine Interiors
Glazed internal doors
Planet Partitions
Precast concrete stairs
Acheson & Glover
Railings
Jacksons



Top
View of the prayer hall from the balcony (ph: Julia C Johnson); view to Mill Road from the atrium (ph: Abdallah Abada); stained glass window (JCJ).

Above
Mashrabiya screens in the prayer hall.

