

House of 40 Knots

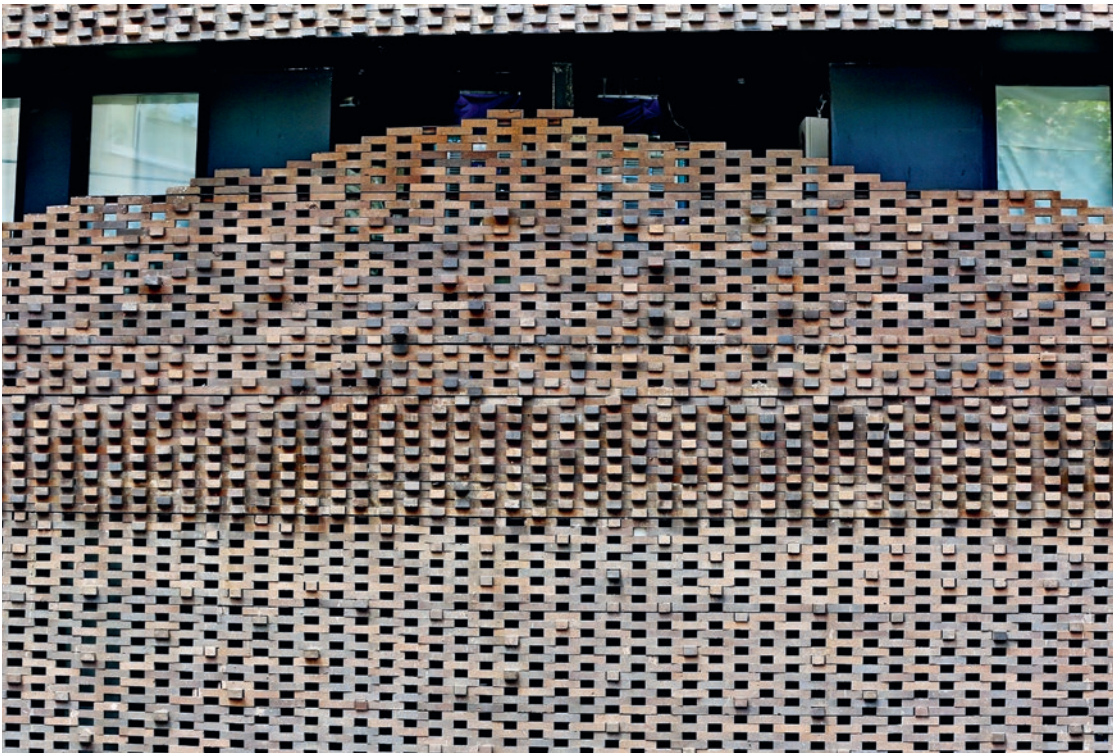
Tehran, Iran

The House of 40 Knots stands out amid the rather monotonous block structure of west Tehran. Departing from the rectilinear order of the neighbouring residential buildings, its layered facade joins elements of two Iranian traditions – carpet-weaving and brick – in a creative reinterpretation of the mashrabiyya. The traditional Persian method of weaving consists of two people working together, one reciting instructions while the other sits at the loom, making the corresponding knots in the carpet. The handmade exterior of this residence, built by labourers who were unable to read technical drawings, was produced using a similar system. As the supervising mason called out instructions, a team of seven workers placed the bricks, one by one, on reinforcement bars, creating an irregular, projecting surface that is partly structural rather than just a veneer. Trained in situ, the formerly unskilled labourers became proficient in performing specialised work.

The patterns of the woven facade relate to the path of the sun. They allow for natural ventilation and dampen noise. Crucially, where windows sit behind the brick screen, the filtered natural light forms a textured grid that illuminates the internal spaces while maintaining the residents' privacy. A concern with privacy also shaped the arrangement of the interior. In each of the ten apartments a glass door creates a buffer space between the public staircase and the domestic realm: when the door of the apartment is open, there are no direct views inside. In addition, the plan makes a clear distinction between private space – two bedrooms and a bathroom used only by the household – and the area accessible to both residents and guests, consisting of a living room, kitchen/dining room and a second bathroom.

Common areas and parking are located on the ground floor and basement, while there are two apartments on each of the five upper storeys. Designed for middle-income families, the units range in size from 75 m² to 88 m². The main structure is a steel frame erected on concrete foundations. Inspired by local technologies and utilising local materials and labour, this is a contemporary residential building that responds to local social and environmental contexts.





Client

Alireza Zahed, Tehran, Iran

Architects

Habibeh Madjdabadi, Alireza Mashhadimirza, Tehran, Iran
Mani Shabanzadeh, Hamid Zinsaz, Parastoo Noroozi,
design team, Tehran, Iran

Architect of Record

Alireza Mashhadimirza, Tehran, Iran

Structural Engineer

Esameel Tabatabayi, Tehran, Iran

Mechanical Engineer

Hossein Monfared, Tehran, Iran

Brickworks

Soheil Company, Tehran, Iran

Brickwork Contractor

RTA Company, Tehran, Iran

Project Data

Site area: 245 m²
Total floor area: 1,370 m²
Cost: 430,000 USD
Commission: February 2012
Design: May 2012–December 2012
Construction: October 2012–August 2013
Occupancy: April 2014

Habibeh Madjdabadi

Habibeh Madjdabadi established her design office in 2000 after winning first prize in a design competition for restoring historic buildings in Iran. She has recently worked on the design of the Norwegian Embassy in Tehran, combining brick and mirror on the facade, in collaboration with Intertecno of Italy. Materials are an important means of expression in Madjdabadi's work and she considers them from a poetic point of view. In recent years, she has shown a particular interest in the mirror as a traditional and contemporary material. Her installation entitled *Death of the Author* is a space created by hundreds of mirror fragments and Persian alphabet letters arranged inside an old room belonging to an Art Deco house of the 1930s.

Madjdabadi has published widely in Iranian architecture magazines and she is a member of the editorial board of *Me'mar* magazine.

Alireza Mashhadimirza

Alireza Mashhadimirza is an Iranian practising architect, university-level educator and researcher on architecture. He was born and grew up in Tehran within a cultured family, graduating with a master's degree from the school of architecture at Elm o Sanat University (Iran University of Science & Technology) in 1999 and establishing his own architectural office thereafter. His design work

ranges from interiors and architecture to urban spaces and landscape and he has won national and international design awards. Mashhadimirza has received national recognition for his training and workshop tours at architecture schools all over the nation, designed to engender a creativity beyond the ordinary and to introduce his philosophy under the titles of *The Sounds of Architecture* and *The Lyrics of Brick Installation*. He is currently lecturer at the school of architecture at Azad Islamic University. His research and publications, in both Persian and English, are recognised as valuable contributions towards architectural education in Iran.

Habibeh Madjdabadi and Alireza Mashhadimirza have collaborated on a number of projects and competitions. The House of 40 Knots was shortlisted at the 2014 Worldwide Brick Award and gained third place in the 2014 Me'mar awards, and they received a Chicago Athenaeum Award in 2014 for Mellat Bank's copper facade.

Websites

www.habibehmadjdabadi.com
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