

projects

ROTATING ROOMS REFLECT SEASONS

The demands of Tehran's hot summers and cold winters are catered for in a private residence which uses techniques developed for the theatrical stage to keep interiors cool and warm as the seasons change

At the touch of a button three rooms can rotate at a home in Iran designed by architects next-office. In order to make the best of the regions weather conditions the rooms turn around and can fold into the building or project out overhanging the street.

The seven-storey Sharifi-Ha house in Tehran features a gym and a swimming pool. But what makes it extraordinary, is by using the push-button technology three rooms - the breakfast room, the guest room and the office - can rotate out, letting light in and creating terrace space.

Each room works on its own rotating base, so the house is fully customisable

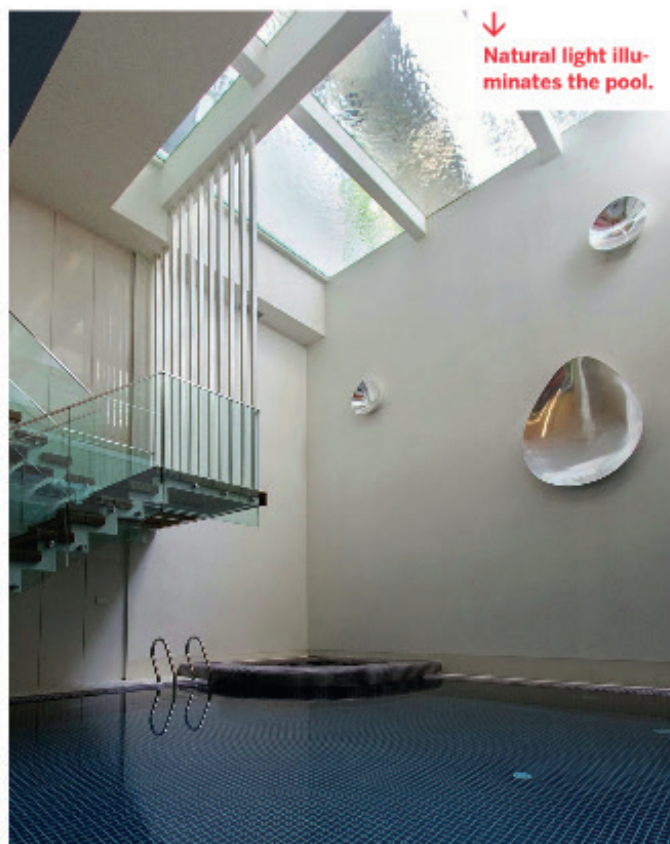
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In summer the rooms are projected out to allow in the light and create terrace spaces. While in winter they retract back into the three storey structure.



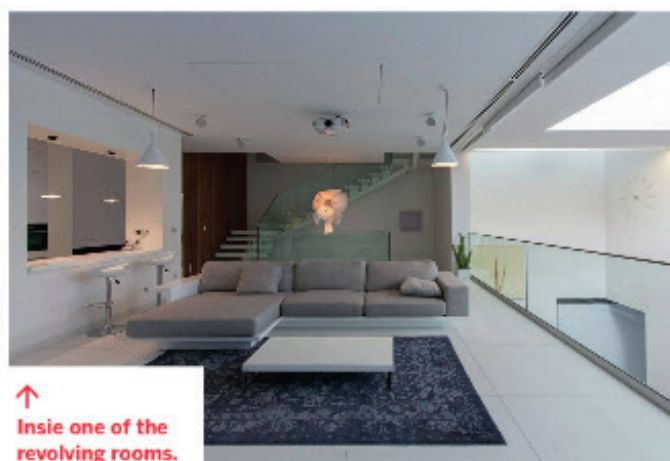


The designer said the manufacturing technique for the turning mechanism was a simple one—the same method employed in turning theatrical scenes, turning the floor of car exhibitions, and employed by steel companies and the shipping industry in Iran. Details of the handrails and air-penetration controlling methods were major issues considered in developing the design of the turning boxes. Designing foldable handrails and refining the boxes' edges happened to be the most technically feasible solutions. Considering the specialties of this kind of architecture, the structural system was inevitably irregular in form. After digitally modeling the structure, a series of SAP2000 analyses were undertaken to examine static/dynamic performances of the proposed system. Being partially

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Natural light illuminates the pool.



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Inside one of the revolving rooms.

The design was inspired by the traditional Iranian home, which has both a summer and winter living room to reflect the stark difference in the seasons' temperatures. So in the summer the rooms can be opened up, allowing light in, providing ventilation and also creating terrace space, while in winter they can be closed up to keep the building warm.

Architect Alireza Taghaboni said: "Uncertainty and flexibility lie at the heart of this project's design concept. The sensational, spatial qualities of the interiors, as well as the formal configuration of its exterior, directly respond to the displacement of turning boxes that lead the building's vol-



OPEN OR CLOSED - INTROVERTED OR EXTROVERTED” - ALIREZA TAGHABONI NEXTOFFICE

ume to become open or closed, introverted or extroverted.” The home has two basement floors, which house the gym and other leisure facilities such as a billiards table. The ground floor has room for parking and the housekeeper’s living area, the first and second floors are the main living space, with the kitchen, living room and even piano area. The top two floors have the bedrooms and bathrooms, as well as another kitchen and more living space.

“Like many other urban plots, the land for this project had a noticeably narrow façade-width compared with its depth of its length. Consequently, our expertise in transforming a two-dimensional façade to a three-dimensional one became indispensable,” said Taghaboni.

The designers said the building’s volume is a reference to traditional Iranian houses, which would dynamically serve as seasonal modes of habitation by offering both a Zemestan-Neshin - a winter living room - and Taabestan-Neshin



moveable is the dominant feature of this structural assembly, which was contemplated throughout the fabrication process by the manufacturer. The main loads all rest on the beams of the living rooms. Due to the various configurations the turning boxes may take, the loading calculation has been estimated based on the largest possible loading. Additionally, controlling the probable vibrations to prevent structural deformation in the turning boxes was taken into account.



In summer, terrace space is formed as the rooms revolve outside.



The surrounding natural landscape was incorporated into the design.





THE HOUSE ADAPTS TO
THE FUNCTIONAL NEEDS
OF ITS USERS”

– ALIREZA TAGHABONI NEXTOFFICE





UNCERTAINTY AND FLEXIBILITY LIE AT THE HEART OF THIS DESIGN PROJECT

– ALIREZA TAGHABONI NEXTOFFICE



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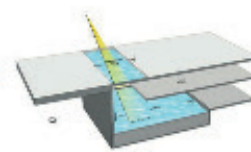
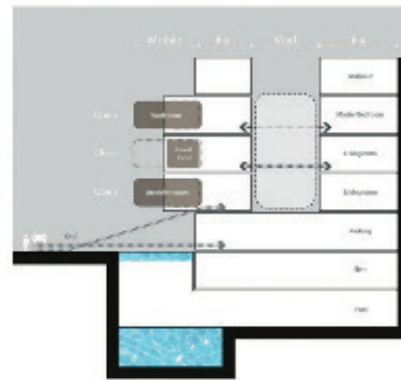
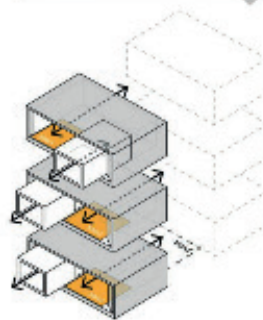
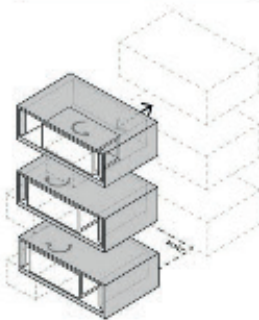
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Landscape Consultant:
Babak Mostofi Sadri, Omid Abbas Fardi

Structural Design:
Sohrab Falahi



The blueprints for the rotating technology were based on designs for manipulating stage sets in the theatre. Each of the three rooms can be moved individually

- a summer living room - to their residents. In summertime, Sharifi-ha House offers an open, transparent and perforated volume with wide, large terraces.

In contrast, during Tehran's cold, snowy winters the volume closes down, offering minimal openings and a total absence of wide summer terraces.

The architects said the challenges to the concepts of introverted-extroverted typology led to an exciting spatial transformation of an ever-changing residential building, one unlike any other in the region.

Taghaboni said: "The house adapts to the functional needs of its users.

"Depending on whether there is a guest or not, the guest room - on the second floor - can be reconfigured for different purposes. Similarly home offices and breakfast rooms can change the formality of their appearance according to their residents' desires.

"There is always the possibility of having different seasonal or lighting scenarios because of this style." ●

