
SUN
Structural and Facade
Consultants and Contractors

SUN Company

The SUN (Sazehaye Ofoghe Noor) company was established in 2006 with the aim of design and construction of all types of spatial structures, steel and concrete structures, facades and claddings. Professor Hoshyar Nooshin, has been collaborating with the company, since the beginning, as the chief consultant. The SUN company has extensive experience in design and construction of spatial structures, steel and concrete structures, facades and claddings with some 200 major projects having completed.

The expertise of this group is in the following fields:

- Conceptual design of the structure, facade and cladding
- Detailed design of the structure, facade and cladding
- Inspection, supervision and quality control of the structure, facade and cladding
- Fabrication and erection of the structure, facade and cladding
- Heavy lifting

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Hoshyar Nooshin

Emeritus Professor of structures, University of surrey, UK

Professor Hoshyar Nooshin received his first degree in civil engineering from the Faculty of Engineering of University of Tehran in 1959. Subsequently, he obtained a postgraduate degree of DIC in structural engineering from Imperial College, UK and a degree of PHD in the field of spatial structures from the University of London.

Dr Mahmoud Heristchian

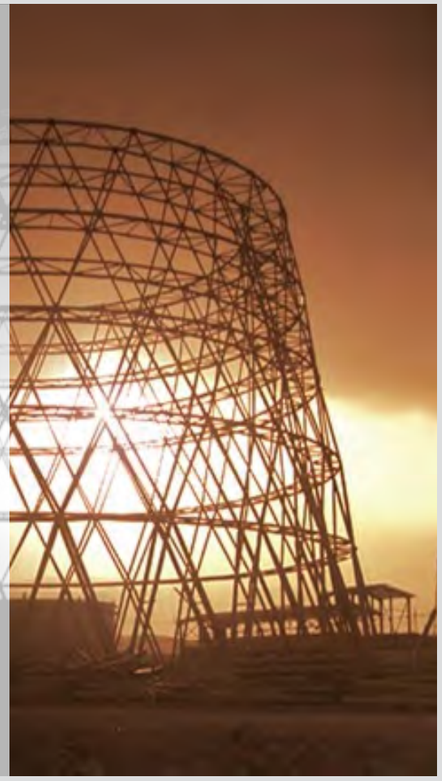
•Professor (Associate) Department of Civil Engineering, Faculty of Engineering, Islamic Azad University, South Tehran Branch, Iran.
•Head of Board of Directors SUN company
•B.Sc, Structural Engineering, Sharif University, Iran (1974)
•M.Sc, Structural Engineering, University of SURREY, UK (1975)
•Ph.D., Structural Engineering, University of SURREY, UK (1980)
•Post Doctoral Degree, University of SURREY, UK (1981)

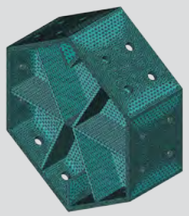
Cooling towers of Jahrom and Hamedan (Mofateh)

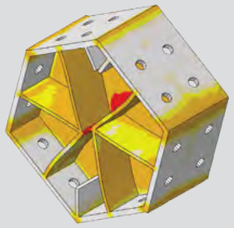
The lattice steel cooling towers of Jahrom and Mofateh power plant are double-layer grids and the members are made of various RHS (Round hollow sections). The connections of these structures are "Hexanode" which are specially designed for these cooling towers. The aluminum cladding is used for the covering of the cooling towers.

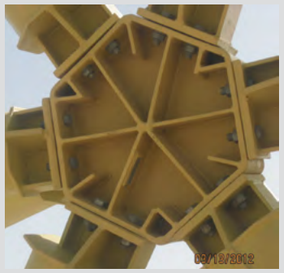
	Jahrom	Mofateh
Height:	123 m	132 m
Base Diameter:	86 m	105 m
Top Diameter:	62 m	70 m
Weight:	1350 Tons	1600 Tons

Client: MAPNA group
Consultant: Moshanir
Senior consultant: Prof H. Nooshin
Designer: SUN
Executive: Porsaz-Norahan









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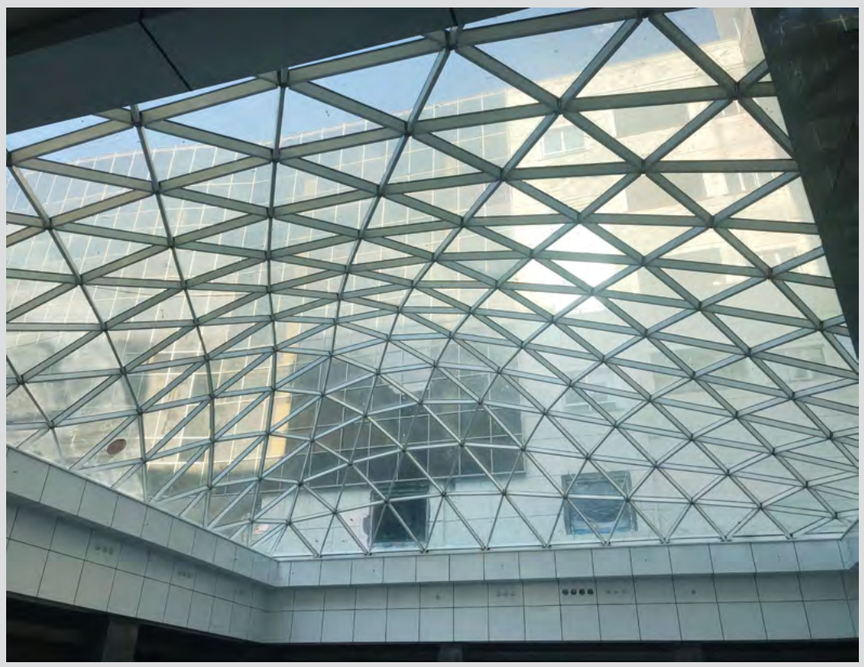
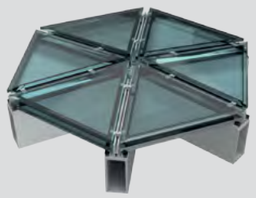
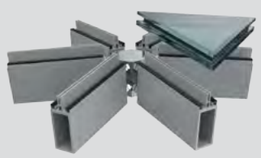
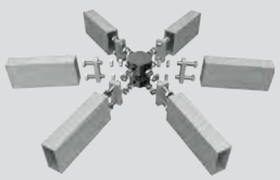
Free form skylight of Ati Center (Mashhad commercial complex)

The spatial structure of this free form skylight is designed by a single-layer grid by Sun Company. The connections of this structure are steel cylinders which have been milled and drilled by 5-axis CNC machine based on the space grid form. Due to the complex and unique geometry of this paraboloid structure, all members and connections of this structure are unique. The cladding of this structure is a two-layer tempered glass.









Width: 22 m
Length: 25 m
Covering area: 550 m2

Client: Salco
Design and construction: SUN

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Imam Khomeini International Airport Subway Station

The free-form spatial structure of the subway station of Imam Khomeini International Airport is a double-arched dome inspired by the form of passenger terminal hall number 1 of the airport. The double-layer space grid of the structure is connected to the main concrete structure by the tree space members. One of the important features in the design and construction of the spatial structure is the connection between the main concrete structure, the glass facade and the aluminum cladding.

Width: 40 m
Length: 185 m
Height: 25 m
Covering area: 7000 m^2

Client: Sepasad Group
Consultant: Haraz Rah and Sazian
Design and construction: SUN

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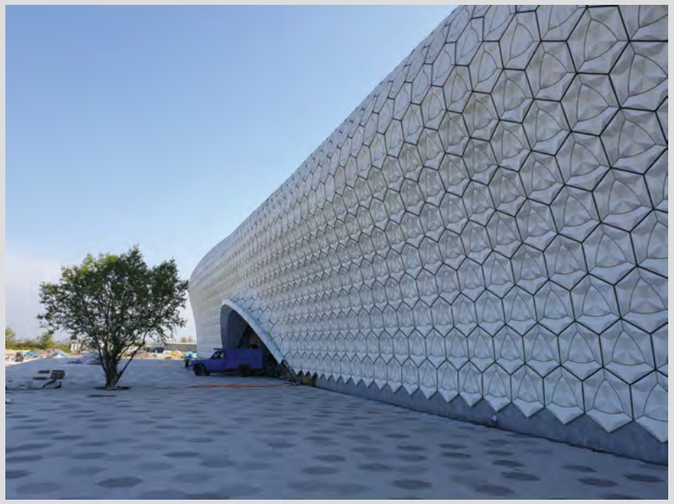
Simorgh

Simorgh recreational and commercial center is located in Noor to Mahmoud Abad Road in Mazandaran province of Iran. The structure of the project is a free-form space grid inspired by the architecture of Heydar Aliyev Cultural Center of Baku, one of the masterpieces of the famous architect, Zaha Hadid, with a covering area of approximately 3000 m^2 and a maximum height of 36 m.

Client: Babak Kalantari

Design and construction: SUN



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West Saman Cement Factory

West Saman Cement Factory has three main industrial hall which are designed and constructed by SUN Company. The **raw material mixing shed** of West Saman Cement Factory of Kermanshah with 531 m length is one of the double layer barrel vault designed and constructed by angle steel sections. West Saman Cement Company **packing Hall** with an opening 40 m wide was implemented in Kermanshah. Space grid used in this structure is a double layer diagonal system with spherical node connections. This structure is capable of bearing the loads of a 5 Tons crane with 30 meters of span, in addition to the usual environmental loads. This structure is assembled on the ground, and its heavy lifting was done using four 50 Ton cranes, simultaneously. The steel columns, space roof and sandwich panel cladding of the **Cement bag production hall** of the factory with 14300 m2 covering area is also designed and constructed by SUN company in 5 months.

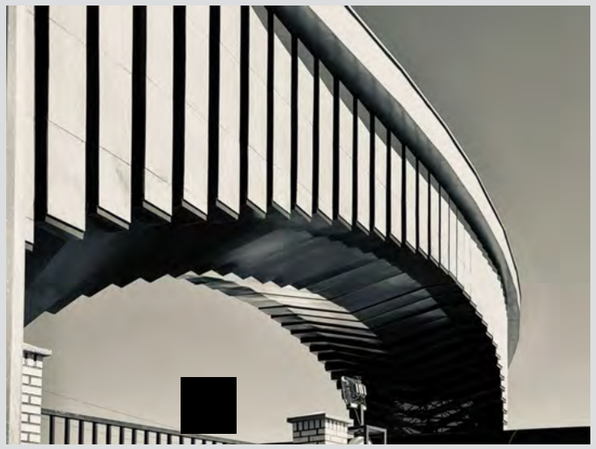
	Raw material mixing shed	Packing hall	Cement bag production hall
Span:	56.5 m	40 m	width: 93 m
Length:	531 m	43 m	154 m
Height:	30.3 m	9 m	10 m
Covering area:	30000 m^2	1700 m^2	14300 m^2

Client: West Saman Cement Factory
Design and Construction: SUN

Raw material mixing shed

Packing hall

Cement bag production hall



Entrances of Pakchoob factories

The free-form spatial structures of the entrances of the Pakchoob factories in Shams Abad industrial town and Shush city were designed, fabricated, and assembled with the spherical node system by SUN company. This spatial structure is a combination of a two-layer and multi-layer space grid located on two foundations on both sides, and covered by a combination of dry ceramics and perforated steel sheets (punch metal). The architectural design of these entrances were done by Motamed and Associates Architecture Group (MMG Office) at www.mmgoffice.com.

Span: 28 m
Width: 9 m
Length: 46 m
Height: 10 m

Client: Iranian PakChoob factory
Consultant: Motamed and Associates
Design and construction: SUN

Soufian Cement Factory

Raw material mixing sheds of Soufian cement factory are double-layer barrel vault using steel angle section. The short construction time and the light weight of the structure makes it a good choice for construction of industrial structures with wide spans. This industrial hall has two separate rooms. Lime stone with 59.5 m and red soil with 67 m span.

	Red soil	Lime stone
Span:	67 m	59.5 m
Length:	201 m	321 m
Height:	34 m	24 m
Covering area:	13500 m^2	19100 m^2

Client: Soufian Cement Factory
Design: SUN
Executive: Porsaz

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Entrance of Shahid Rajaei Harbour

The entrance and exit gate of the Shahid Rajaei harbour have been designed, fabricated and assembled by two free-form spatial structures inspired by the sea waves. The steel columns, spatial structures, and galvanized steel corrugated claddings of the entrances of the harbour are designed and constructed by the SUN company.

Width: 7 m
Length: 50 m
Height: 10 m
Covering area: 660 m^2

Client: Culham
Consultant: Tehran Berkley
Design and construction: SUN

Kolahduz metro station shelter

Kolahduz Metro Station Shelter is located at the east side of Yasini highway in Tehran. This spatial structure has a diagonal three-way grid with K-shaped elements which makes it possible to have a space grid with its minimum height, apart from an appropriate structural behavior. The branching columns of the structure significantly improve the distribution of forces within the structure and it provides an architectural view.

Width: 27 m
Length: 80 m
Height: 6.5 m
Cladding area: 1900 m^2

Client: Tehran Municipality
Design and construction: SUN

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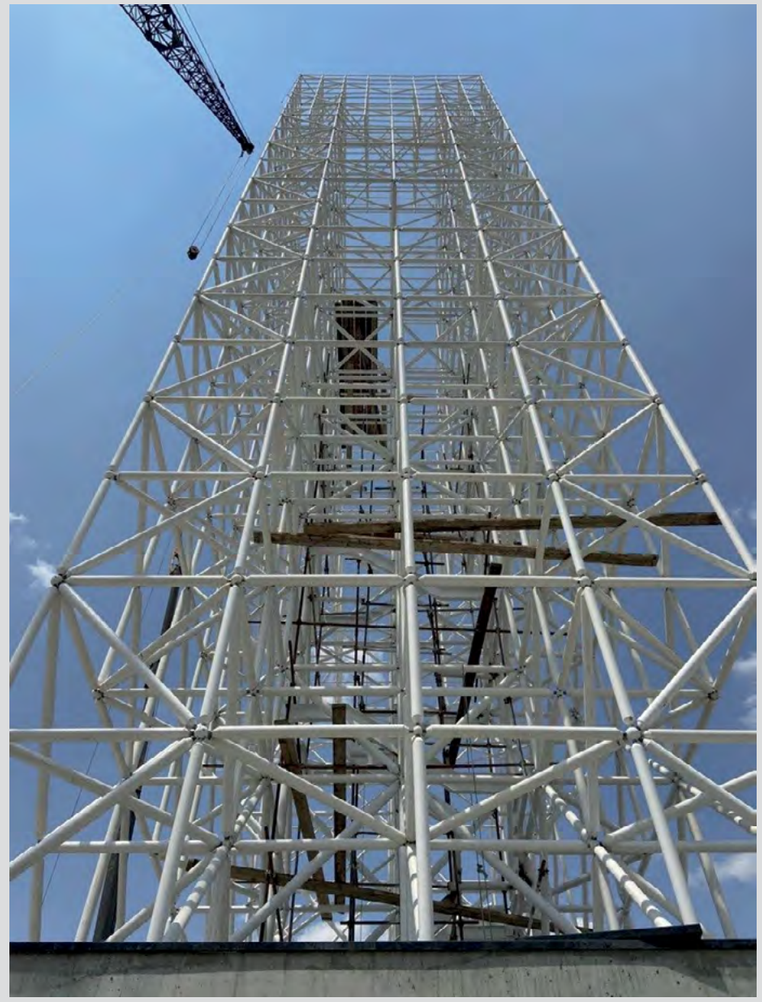
Pardis Science and Technology Park

The main entrance to Pardis Science and Technology Park, as a symbol of technological growth and development, was constructed by SUN Company in the new city of Pardis in Tehran province. This architectural element with a triangular form has a height of 36 m. The space grid of the structure is designed by a 5-layer grid with a spherical node system.

Width: 8 m
Length: 36 m
Height: 40 m

Client: Pardis Science and Technology Park
Project manager: Shora Consultant
Design Consultant: Asre Farayande Memari
Main contractor: Kelvin
Design and construction: SUN



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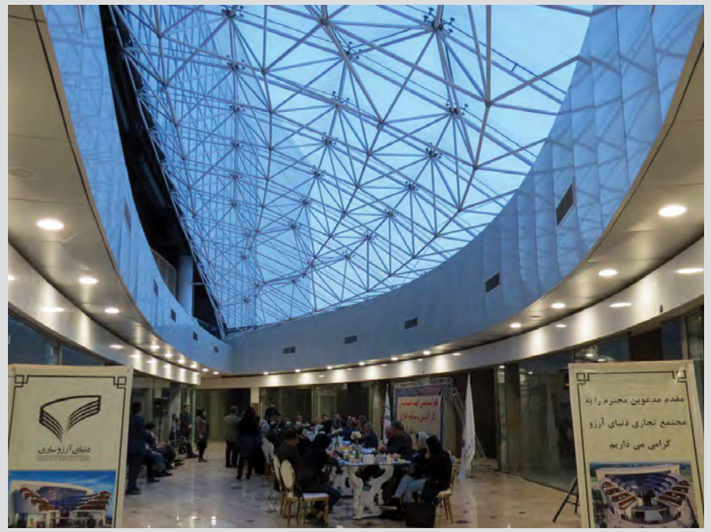


Dream World of Sari

SUN Company designed, fabricated, and assembled the **skylight** structures, the **entrance**, and the roof of the **amphitheater** of this commercial complex. The free form skylight of this project is covered by laminated tempered glass with spider system, the entrance of this complex is also covered by fabric materials, and the free form spatial structure of the amphitheater of this commercial entertainment complex is covered by sandwich panel.

	Skylight	Entrance	Amphitheater
Width:	8.5 m	13 m	16 m
Length:	33 m	16 m	68 m
Height:	20 m	5 m	25 m
Covering area:	150 m^2	180 m^2	950 m^2

Client: Middle East Tall Buildings
Design and construction: Sun

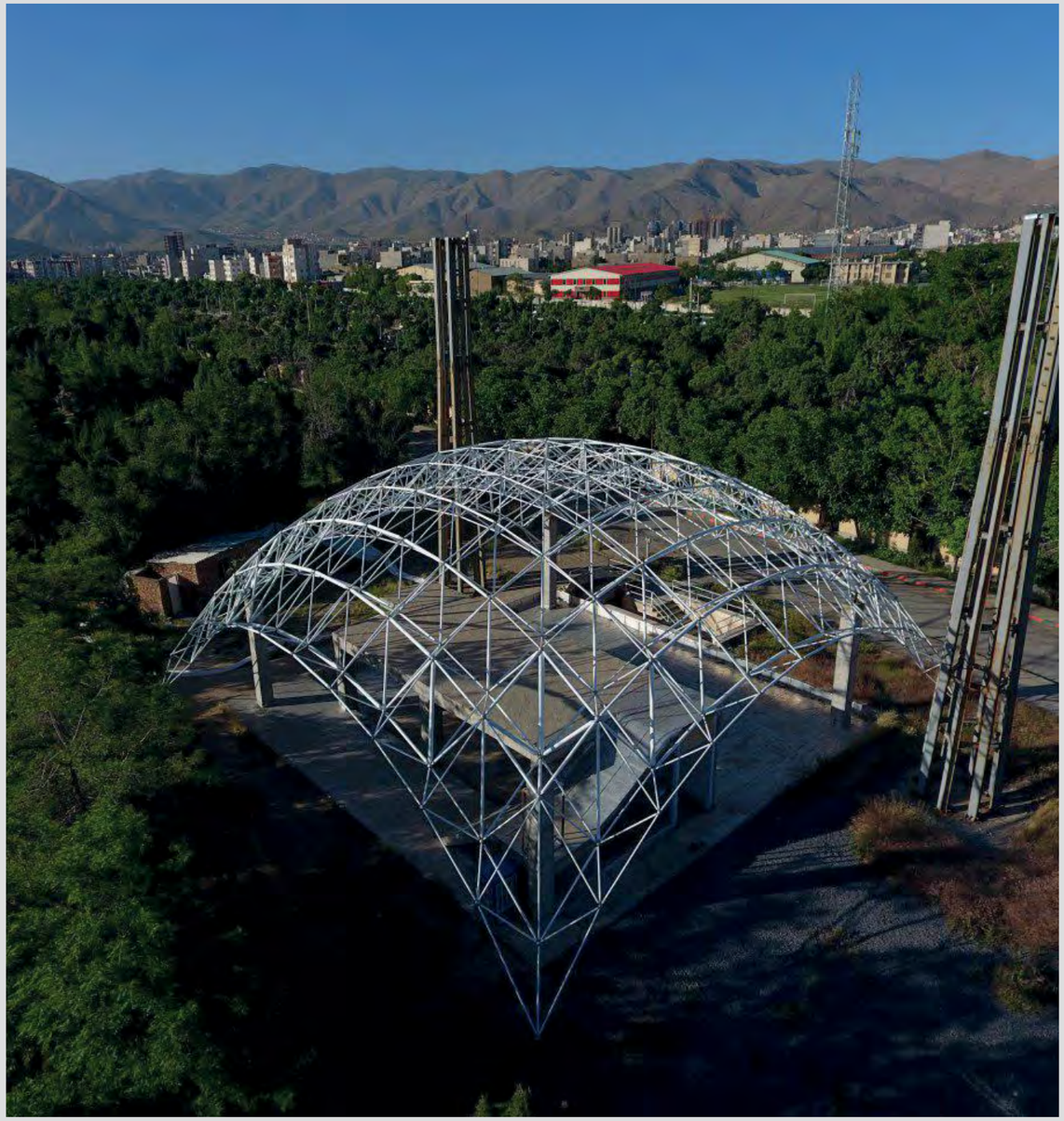
SUN

Samen AL-Aeme Stadium (Mashad stadium)

This project includes designing, construction, and assembly of the structure of the multi-purpose stadium with the capacity of 6000 audience in Mashad city. The roof structure of the stadium is generated by a double-layer barrel vault dome. The central part of the structure was assembled on the ground and lifted by using special hydraulic jacks. This structure 108 m x 80 m has covered an area of 8640 square meter.

Span: 80 m
Length: 108 m
Height: 24 m
Cladding area: 8640 m^2

Client: Sports Facilities
Consultant: Naghsh Mandegar
Design and Lifting: SUN
Fabrication: Sayehsar

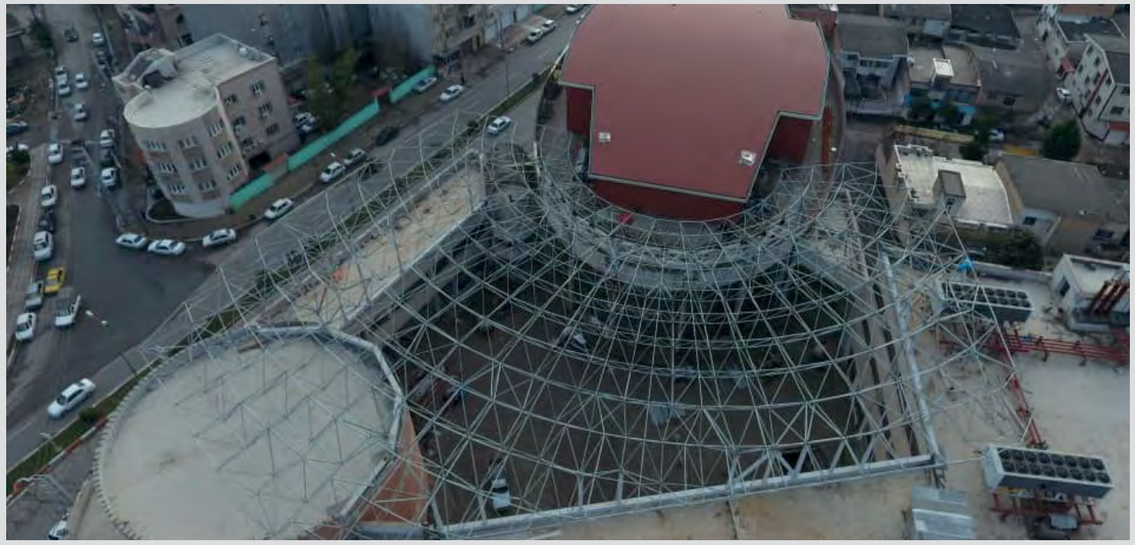


Arak University Mosque

Arak University Mosque is designed and constructed by using a double-layer space grid with spherical node connections. This levic dome with a rectangular plan is located on four concrete columns.

Width: 22 m
Length: 22 m
Height: 11 m
Covering area: 585 m^2

Client: Arak University
Design and Construction: SUN



Central Hall of culture and art of Sari

The free form spatial structure of Central Hall of culture and art of Sari, which is the largest cultural complex in the north of Iran, is designed by a three-layer space grid with a combination of a dome and shell shape. The cladding used in this project is made by fabric material.

Covering area: 2070 m^2

Client: Darven

Design and construction: SUN

Kish Gas Station

The structure of the project is a free-form space grid designed and constructed for covering the gas station of kish island located just a few minutes from the Kish Airport. This spatial structure is covered by steel corrugated cladding.

Width: 30.5 m

Length: 30.5 m

Height: 8.1 m

Covering area: 930 m^2

Client: Adibzadeh

Design and construction: Sun

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Hotel helipad

Emergency helipads

Commercial helipad

Iran Mall Helipads

SUN company has designed, fabricated, and assembled three helipads in Iran Mall complex in Tehran. One **commercial helipad** with a diameter of 26 meters, and two **emergency helipads** with a diameter of 18 meters are constructed in this shopping mall. The main structure of all of these helipads are a double-layer spatial structure connected with spherical node connections and a steel deck is used for the cladding of these pads.

Client: Faraz Avaran
Design and construction: SUN

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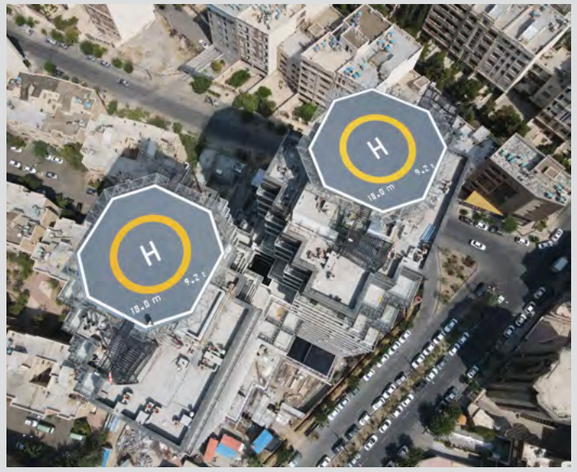


Mika Twin Towers helipads

The two helipads of Mika twin towers with a diameter of 18 meters and an octagonal shape were designed and constructed by SUN Company. The main structure of these helipads is a space structure with spherical node system covered by a steel deck.

Diameter: 18 m

Client: Abbas Ahmadi Miri
Design and construction: SUN

Mehmandoost helipad

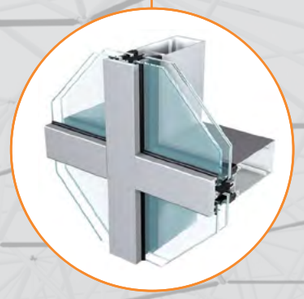
The structure of emergency helipad of Mehmandoost building is a two-layer spatial structure covered by a steel deck. Steel space structure helipads, in addition to the architectural view and proper strength, can reduce the seismic load of the main structure of the building compared to the concrete or steel helipads covered by concrete deck due to the light weight of the space frame and steel deck.

Diameter: 18 m

Client: Faraz Avaran Asman Company
Design and construction: SUN

Saraye Irani of Isfahan

SUN company had the contract of design, fabrication and construction of the steel spatial structure, the roof sandwich panel cladding, the glass facade, and the patterned sheet facade of Saraye Irani commercial complex in Isfahan. The main feature of the two-layer space grid is the flat hexagonal bottom layer and the four-slope triangular top layer grid (hip roof). The face caped curtain wall system is used in the glass facade of this complex, and the upper part of the glass facade is covered with a painted steel patterned sheet.



Width: 75 m
Length: 133 m
Height: 16 m
Roof Covering area: 10000 m^2
Glass facade area: 1000 m^2
Patterned sheet facade area: 600 m^2

Client: Shahre Farsh of Isfahan
Design and construction: SUN

Kosar Building

The space structure of the Kosar building includes two separate indoor spaces. SUN company has been responsible for the design, fabrication and assembly of the spatial structure, sandwich panel roof cladding, and the glass curtain wall facade of this project.

Width: 14 m
Length: 52 m

Covering area: 730 m^2
Facade area: 350 m^2

Client: Mohsen Torabi
Design and construction: SUN

Persia Khodro Auto Expo

Sun Company was responsible for the design, fabrication, and assembly of the structure, sandwich panel cladding, facade (glass and composite) and interior architecture of Persia Khodro auto expo (BMW sales and service representative) located on Shariati Street in Tehran. This structure with a span of 20 meters consists of a two-layer space grid with spherical node connections.

Width: 20 m
Length: 25 m
Height: 6 m

Client: Persia Khodro
Consultant: Kelvan Studio
Design and construction: SUN

Megamall Restaurant

A single-layer diamatic dome is used to cover the revolving restaurant of the Megamall commercial complex in Kermanshah. The SUN Company designed and constructed the steel spatial structure and the aluminum cladding of this dome.

Diameter: 18.2 m
Height: 5.6 m
Covering area: 390 m^2

Client: Seyed Teymoor Mawai
Design and Construction: SUN

Exhibition of Achievements

The structure of the exhibition of achievements is generated by applying a combination of two-layer and three-layer space grid. The SUN Company has the responsibility of design and construction of concrete foundation, steel columns, the spatial structure, and the cladding of this exhibition. A combination of glass and GFRC has been used in the facade of this complex.

Width: 105 m
Length: 105 m
Height: 25 m
Covering area: 11000 m^2

Client: Executive organization
Design and construction: SUN

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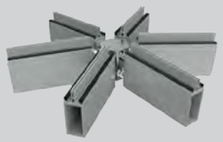

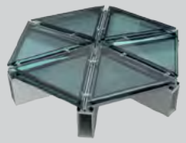

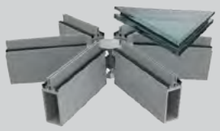

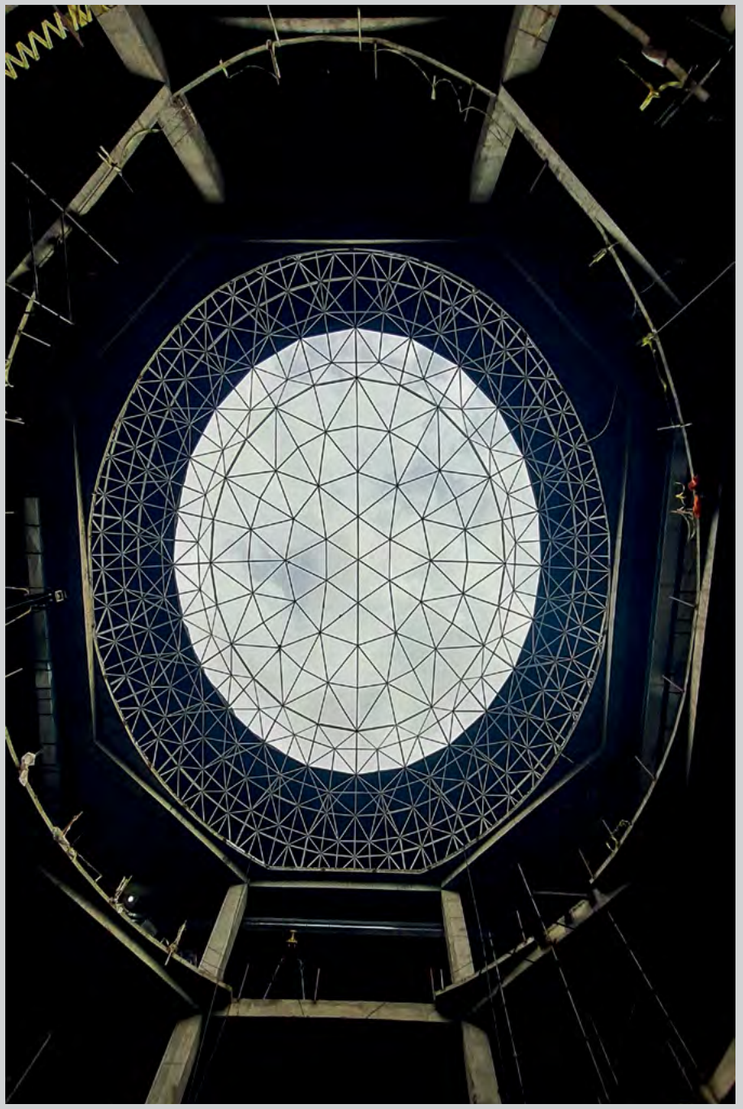

Skylight of Amal Qome

The ellipsoid dome of the skylight of Amal Qome commercial complex is a combination of a single-layer and a double-layer space grid. The central area of this dome is covered by double-layer laminated tempered glass with the U-channel system, and its peripheral cladding is aluminum zip panel.

Major diameter: 29 m
Minor diameter: 26 m
Dome height: 6 m
Covering area: 2650 m^2

Client: Amal Qom Complex
Design and construction: SUN

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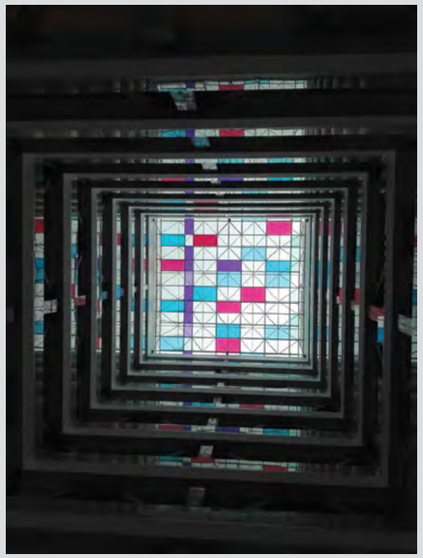
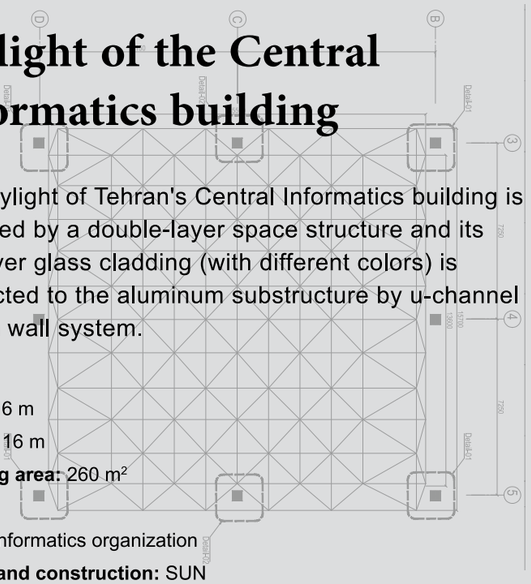


Skylight of the Central Informatics building



The skylight of Tehran's Central Informatics building is designed by a double-layer space structure and its two-layer glass cladding (with different colors) is connected to the aluminum substructure by u-channel curtain wall system.

Width: 16 m
Length: 16 m
Covering area: 260 m²

Client: Informatics organization
Design and construction: SUN

Bandar Abbas Building

The concrete structures of the Bandar Abbas Buildings are constructed by SUN company. This project consists of four 9-storey units, and each of these stories has 360 m² area. The concrete deck of these structures is a two-way slab with 20 cm thickness, and the foundation used in the project is a mat type located on 8 concrete piles.

Width: 16.5 m
Length: 21.5 m
Number of stories: 9
Number of units: 4
Total area: 13000 m²

Client: Executive Organization
Construction: SUN

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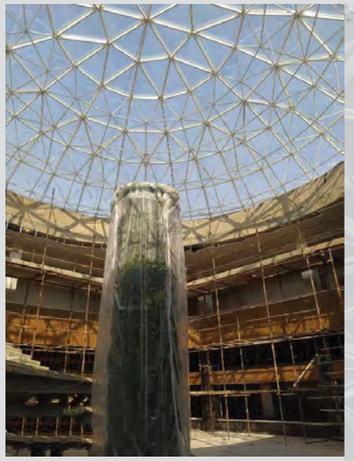
Entrance of Zanjan Grand Hotel

The space structure of the main entrance of the Zanjan Grand Hotel is covered by a two-layer laminated tempered glass using spider system.

width: 10 m
Length: 6 m
Height: 11 m

Client: Zanjan Grand Hotel
Design and construction: SUN



Client: Persian Gulf Bidboland Gas Refining
Consultant: Elikaje
Design and construction: SUN

Skylight domes of PG BidBoland

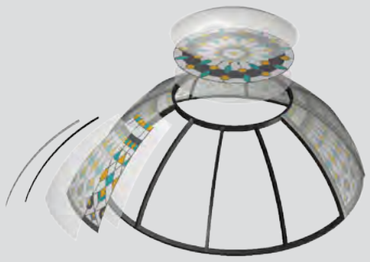
Skylight domes of the A2-2 and A2 buildings of the Persian Gulf Bidboland Gas Refining were designed, fabricated, and assembled by SUN company. The steel substructure of the skylights dome with diameters of 21.2 m and 8.3 m was designed by a single layer space grid with cylindrical joints milled and drilled by 5-axis CNC machine. The double-layer tempered laminated glass cladding of these skylights is connected to the aluminum profiles substructure by u-channel curtain wall system. These skylights were designed based on the climatic condition of Khuzestan region and their functions in a way that, in addition to its beauty, they can provide optimal temperature and light for the restaurant of this complex.

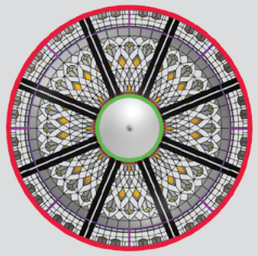
SUN

Lavasan

Stained Glass

One of the techniques of creating colorful skylights or windows is using stained glass. This type of skylights, in addition to providing energy and internal light, it gives a special effect to the architectural elements of the building. In this field, SUN company designed and constructed several projects, some of which are Lavasan, Marivan, and Takestan stained glass skylight.





Takestan

Marivan

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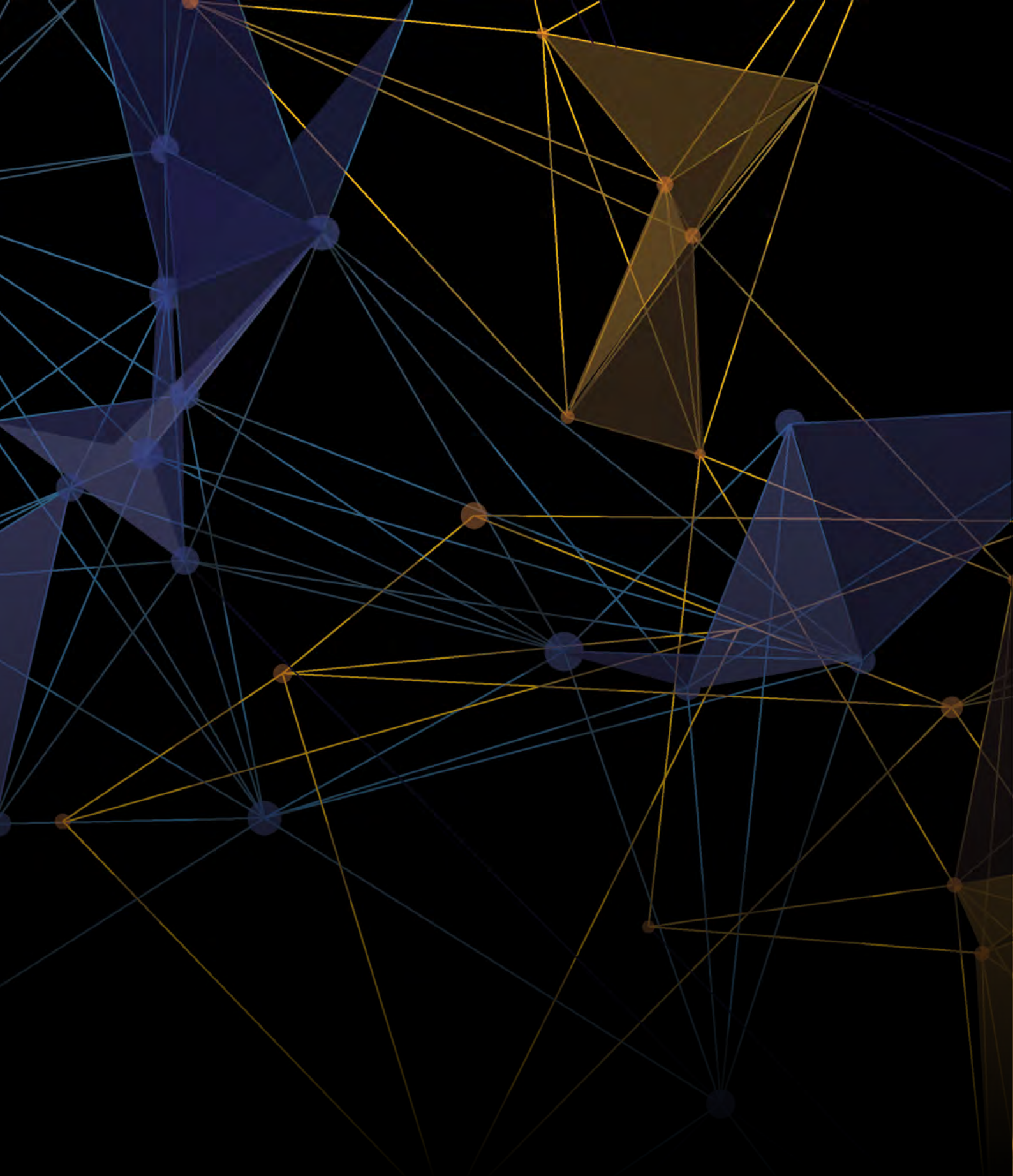

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