

## DESIGN PROCESS

### 1. LOCATION AND CONNECTIONS

The area where the project located will be a functional urban park with Spiritual, Social and touristic qualities as a central focus in the new urban development plan. The site is integrated with the old city in the north through three main axes in the master plan. The connection to the Caspian Sea coast is provided by the main avenue and through the commercial area by a pedestrian axis. Axes opening to the sea are connected to the sea level by railway and highway crossroads. Therefore, the Spiritual and Social center is closely connected with the Caspian Coast. In addition, we proposed a cable car (telpher) line connecting the center to the coast. By this way, a strong relationship with the Caspian coast is established with the highway, pedestrian circulation road and cable car line.

We divided the area into 4 zones with the main pedestrian access points and carpark entrance axes in the north, south, east and west directions. Alternative usage areas are created by equipping each zone with different functional areas and landscape elements.

The mosque, church, synagogue and cultural center are placed on a 9m elevated platform-plateau. While the "first-stage" pedestrian path is surrounding the masses in the form of an infinity sign on the platform, the "second-level" pedestrian path is surrounding the masses at  $\pm 0.00$  elevation. Moreover the "third-level" pedestrian path is connecting all parks and zones. The radial pedestrian paths connecting all pedestrian roads around the ponds and all other walkways can be named as the fourth level providing access and circulation to each area.

### 2. DESIGN IDEAS, METAPHORS, SYMBOLS

Four main function spaces; mosque, church, synagogue and cultural center have been connected on the platform-plateau shaped like infinity sign( $\infty$ ). Also they're making a dialog through the infinity symbol which represents "Goodness" as well.

We are using the infinity sign as the form of the walk-way around the square and the buildings. We're also using the sign on balcony parapets, in the middle of "dhikr" circles and on the design of landscape elements like lightings.

We used the crescent form for outer shell, skylight and women's mahfils in the mosque. The crescents covering the 99m diameter sphere, which represents the world, expresses the mother's compassion protecting the universe. Dedicated to the motherhood and in particular to motherhood tears, "Motherhood Tears Cathedral Mosque"s on the highest shell surface we placed written gold thuluth calligraphic "Surah Ikhlas" like crown of the queen. Around the main entrance door we put the gold written "Surah Ikhlas" like a jewellery to establish and create a crowngate. We designed stained glass windows and window grids symbolising "Mothers' Tears" around the outer shell. On the infinity square we designed a pool using "Mothers' Tears" motive with sprinklers symbolizing happiness and joy or flow bitterly at times of sadness and loss.

We used holy 11, 22, 33, 66, 99 numbers and proportions in different aspects of the design. 66% inclined shell wall, which represents Mother's compassionate arms, covers the sphere dome of 99m diameter. Main prayer area's diameter is 88m, inner dome's height is 66m, mahfil floors' heights are 11m, basement and additional floor heights are 5.5m. Hexagon formed minarets rise to 99m in total with triangle formed levels going up as 22m, 33m, 44m, 66m. Also dhikr circles' with 11, 22 and 33m diameters have been shaped on the carpet texture. 99 copies of triangle shaped ceramic tiles with the gold kufic calligraphy "Allah" have been spread till the top of the inner facade of the dome.

### 3. URBAN DESIGN, SPATIAL FRAME

We used rounded geometry for all the building plans and spherical form for all three dimensional spaces. Circle represents the completeness(wholeness), the universe. Circle form is nondirectional but can turn towards every direction at the same time. When placing and turning all buildings to different directions; especially mosque to Kiblah, church to the east and synagogue to Jerusalem; the rounded geometry allows to set a good urban space without any geometric and functional problems.

We divided the 500x500m area into four zones to put together the mosque(with a capacity of 9000-10000 worshipers), the church and the synagogue(both has 900-1000 worshipers capacity) and the cultural center in a proportional and meaningful manner.

We designed a platform-plateau 9m high from the ground, orienting to Kiblah. In the infinity form basically. We placed the mosque to the Kiblah corner(Eternal Space) and the cultural center to the north(earthly space). In axial symmetric position we placed the church and synagogue on the middle of infinity shaped

## DERBENT SPIRITUAL CENTER - DAGESTAN, RUSSIA

square. The infinity square and infinity walkway are getting together secular, social structure and different religious understandings metaphorically. At the middle of 165m(33x5) diameter infinity square, there is mothers' tears pool divided to 4 parts which is symbolizing the sadness and happiness of mothers.

Numeric frame of urban design; the mosque-cultural center distance center to center is 264m(66x4), church-synagogue centers' distance is 198m(66x3), the mosque-church centers' distance is 165m(33x5), the mosque-synagogue centers' distance is 165m(33x5), cultural center-church-synagogue centers' distance is 165(33x5) defined according to 11, 33, 66, 99 holy sequence. Four functional group settled in a holy numerical formula on the site.

### 4. MAIN CONCEPTUAL DESIGN IDEA

Design of the religious center will aim the unity of existence. The unity of the existence as a single entity constitutes the essence of monotheist religions.

Existence only changes form and everything in the universe is the reflection of it. Unity can denote a combination of all the parts, elements and individuals into an effective whole. Even the smallest whole has the quality of united into one and can be used to represent the universe. The whole universe is united together; it is a part of omnipotent being. Universe(cosmos) has no beginning or end. Starting point of design is based on all of these notions.

Architectural and urban design of the religious center will express "the unity" and the only, unique way going to the god.

The conceptual design will be formed in the context of "social and spiritual gathering" through the unity, in spite of the differences, going together on the one way, to the god.

We designed The Motherhood Tears Cathedral Mosque to be the most magnificent and monumental building all around Derbent and hinterland. But this monumentality will not be overwhelmingly and oppressive, on the contrary will be embrative, inclusive, reintegrative and reductive to common denominator. We wanted the mosque's, church's and synagogue's conic geometric forms present the rising harmonically all together.

When we enter the columnless spherical interior, we perceive a height that will make you feel the infinity of the universe. After the crescent-shaped mahfils, a spiral cantilever ramp advances into the sky. At the top of the dome, the ramp leaves the spherical surface and ends with the viewing area in the form of "waw". It almost symbolizes meeting with God.

We considered the mosque as a vertical Kulliye. Apart from the main indoor spaces that can serve 11,000 people, we have also shaped the transition prayer areas as semi-open spaces due to the climate. By this complex, which includes functions such as Islamic Art Museum, Madrasa, Student Dormitory, Marriage And Administrative Offices, Library, Ethnography Museum, Conference And Exhibition Halls, Herbal & Aromatic Treatment Center, Public Kitchen; We aimed to make a truly modern "kulliye" that sets a benchmark in the whole region.

### 5. LOAD BEARING STRUCTURAL DESIGN

-Main Function, Cathedral Mosque; We used the Geodesic dome structure not only to construct a column-free space that will accommodate 9-10 thousand people, but also to obtain an economical and practical construction all over the project. This structure, which refers to the traditional mosque architecture both as symbolically and formally, can be used by changing the size on all sides of the settlement, which consists of circles and spheres that refer to the Universe (Cosmos).

Main Geodesic Structure of the Dome was arranged as a 3 dimensional steel frame shell consisting of steel beams and steel tube profiles. This structure allows cladding in the form of triangular modules from the inside and outside. The space between the 3D structural elements give the opportunity to distribute mechanical systems, ventilation ducts (HVAC System), electrical & lighting systems all over the building. This structural space provides convenience in construction and maintenance.

The structural system of the basement floors are considered to be reinforced concrete from foundation to the ground level and integrated with the geodesic domes at the ground level.

-Minarets; the steel structure of the minarets involves 6 triangular prisms with truss constructions and rises 99m from the ground. These triangular prisms connect to each other at certain elevations gradually.

### 6. MATERIALS

This vast area and the characteristics of the designed buildings can require a wide variety of materials. However, by standardizing and optimizing the use of materials, especially in structural ones, we basically;

## DESIGN CONCEPTS

used stainless steel, aluminum plate, white marble, granite, glass, ceramic and wood in gold and silver colors. In terms of appearance, the use of noble colors of gold and pearl enhances the quality of the mosque's image. Is, we proposed structural steel and reinforced concrete on the main structures; 3 different white marble for the interior and exterior surfaces; grey granite, Derbent Stone and travertine for floors and landscape paving and wall finishes. The Cladding of the mosque is Titanium Zinc Metal Cladding with Golden Colored Alloy. The same material with patinated grey surface is used to cover the Cultural Center. One of the main interior floor materials is wool carpeting in turquoise colour with a hexagonal texture. Gold panels and laminated gold leaf was used for the inscriptions and engravings. Glazed glass panels in turquoise color with different surface finishes were used in the mihrab. The same turquoise colored ceramic tiles are used as background material of some Islamic writings. Most of the columns and walls of the circulation elements are covered with stainless Steel Panels. The golden surfaced metal panels used as interior cladding have decorative & acoustical perforations.

### 7. LIGHTING AND ECOLOGICAL APPROACH

In the general lighting of this complex, lighting poles were used on the ramps and pedestrian paths, and floor lighting was used on pedestrian circulation paths. In main square, embedded strip floor lighting was used. We illuminate facades of buildings by "wallwasher lighting fixtures" from floor. Also wallwasher lights located on the building were used to illuminate the mosque and minaret's exterior.

Dome lighting is made from crescent shaped skylight and with hexagonal lights connected which are integrated with star lighting on the outer surface of the dome. The minaret is also illuminated internally up to the upper level between the gradually stepped triangle prisms.

Interior part of mosque is illuminated by strip lighting fixtures located between hexagonal panels, under the mezzanine ceilings and under the spiral path. Additionally a light globe chandelier with a diameter of 16.5 meters completes the lighting concept besides the giant candle globes on inclined column.

There are some special electronic systems that make time information and holographic lighting calligraphy sign with laser lights between the minarets.

Inside the mosque, there are speakers and sound systems integrated within the hexagonal shaped dome lights. Also at the top part of each minaret steps, there are sound systems in the crescent shaped lighting cavities.

Heat pumps, air-conditioning systems, floor heating systems are used for the heating.

Underfloor electric resistance systems are used in open spaces and semi-open spaces of the mosque. Besides, there are resistance panels that prevent icing on main square pavements, terraced roofs and pedestrian main walkway and ramps.

The electrical energy of all lighting systems is obtained from photovoltaic panels located throughout the whole project which are integrated with roof, landscape and façade elements.

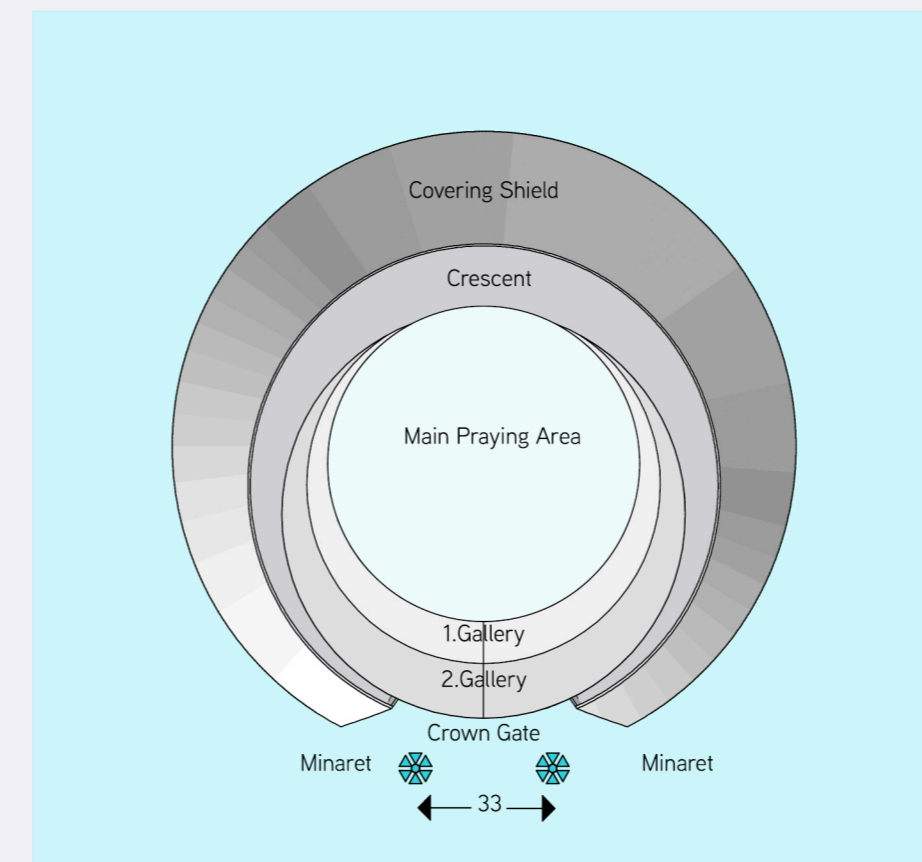
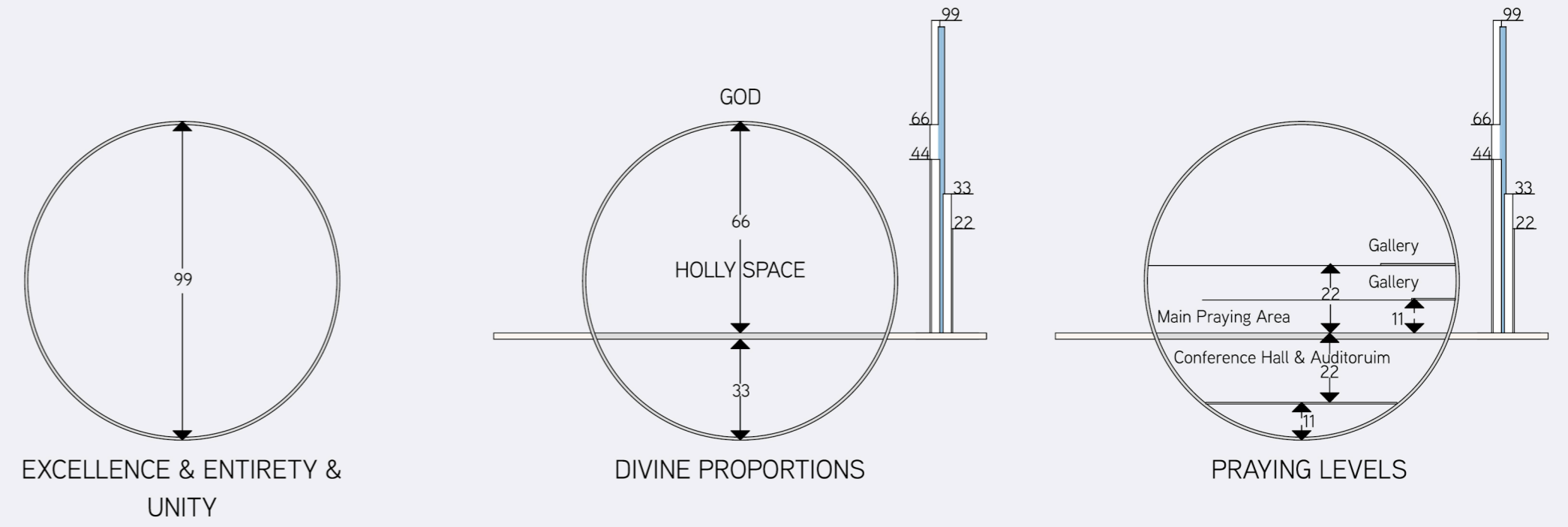
Rainwater collected from roofs goes to the water tanks under the mosque. It is processed with filtration systems for daily use. Rainwater collected from squares is stored in the water tanks on the lower two sides of main square and transferred to irrigation system of the entire landscape. There are water wells working with the energy created with small wind wheels in the landscape area.

Artificial ecological ponds can also be used as irrigation reservoirs. Next to the irrigation tanks, there are ateliers that make compost fertilizer by waste of foods and waste of landscape plants. Landscape flora is fertilized by this organic fertilizer.

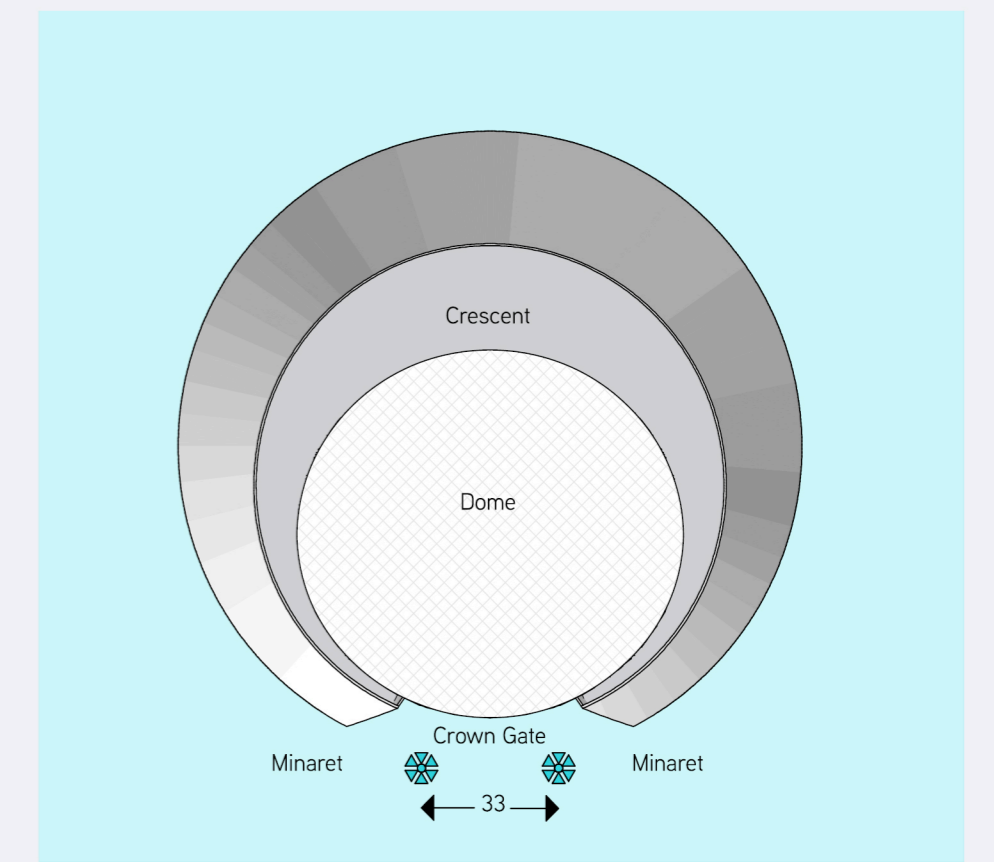
The cable car tower is partially covered with triangular photo voltaic panels. There are panoramic LED Screens as information and media board on the lower part of conical tower. In this tower, there is a media center working as public relations and information area.

In the process of design, we tried to symbolize universe and to show the correlation between earthly life and eternal world. We worked together with "8"(!) people of our office when designing the concept project. It was as if making "dhikr" around the imagination to reach the inspiration.

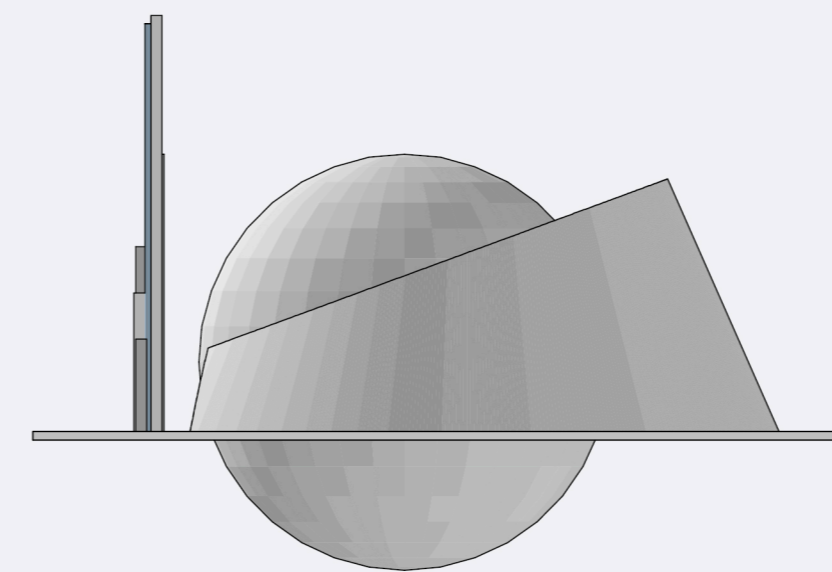
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ONUR ÇALIŞKAN  
ARAS KAZMAOĞLU



INCLUSIVITY



RECEPTIVE AND PROTECTIVE



Traditional mosque image; Minaret and Dome  
Modern Representation

