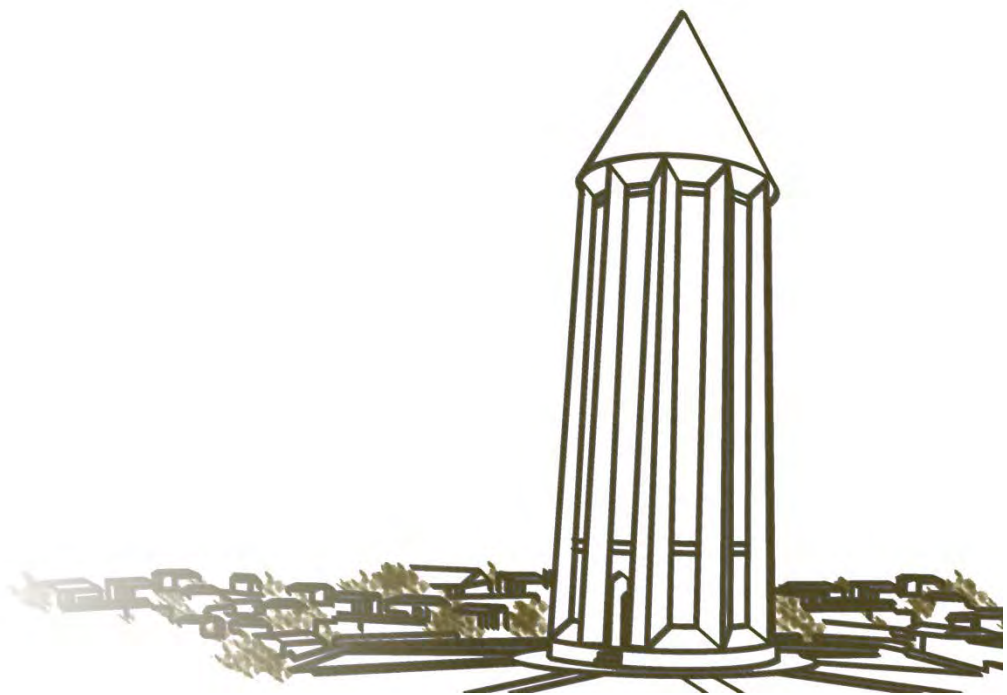


Nomination of

Gonbad-e Qābus

For Inscription on the World Heritage List

Islamic Republic of Iran



Iranian Cultural Heritage, Handicrafts
And tourism Organization

Gonbad-e Qābus

UNESCO

World Heritage Convention

Nomination of Properties for Inscription on

The World Heritage List

Tehran 2011

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0

Executive Summary

0. Executive Summary

- State Party

Islamic Republic of IRAN



Figure 1: The Location of Iran

- State, Province or Region

Province of Golestan in Iran



Figure 2: The location of Province of Golestan in Iran

Gonbad-e kāvus in the Province of Golestan



Figure 3: Location of the town of Gonbad-e kāvus

- Name of Property

Gonbad-e Qābus



Figure 4: General view of Gonbad-e Qābus

- Geographical Coordinates to the nearest second

Table 1: The Geographical Location of the Nominated Property

Name of area	Name of Individual Heritage	Center Point Coordinates
Gonbad-e kāvus	Gonbad-e Qābus	E:55° 10' 08.4", N:37° 15' 28.9"

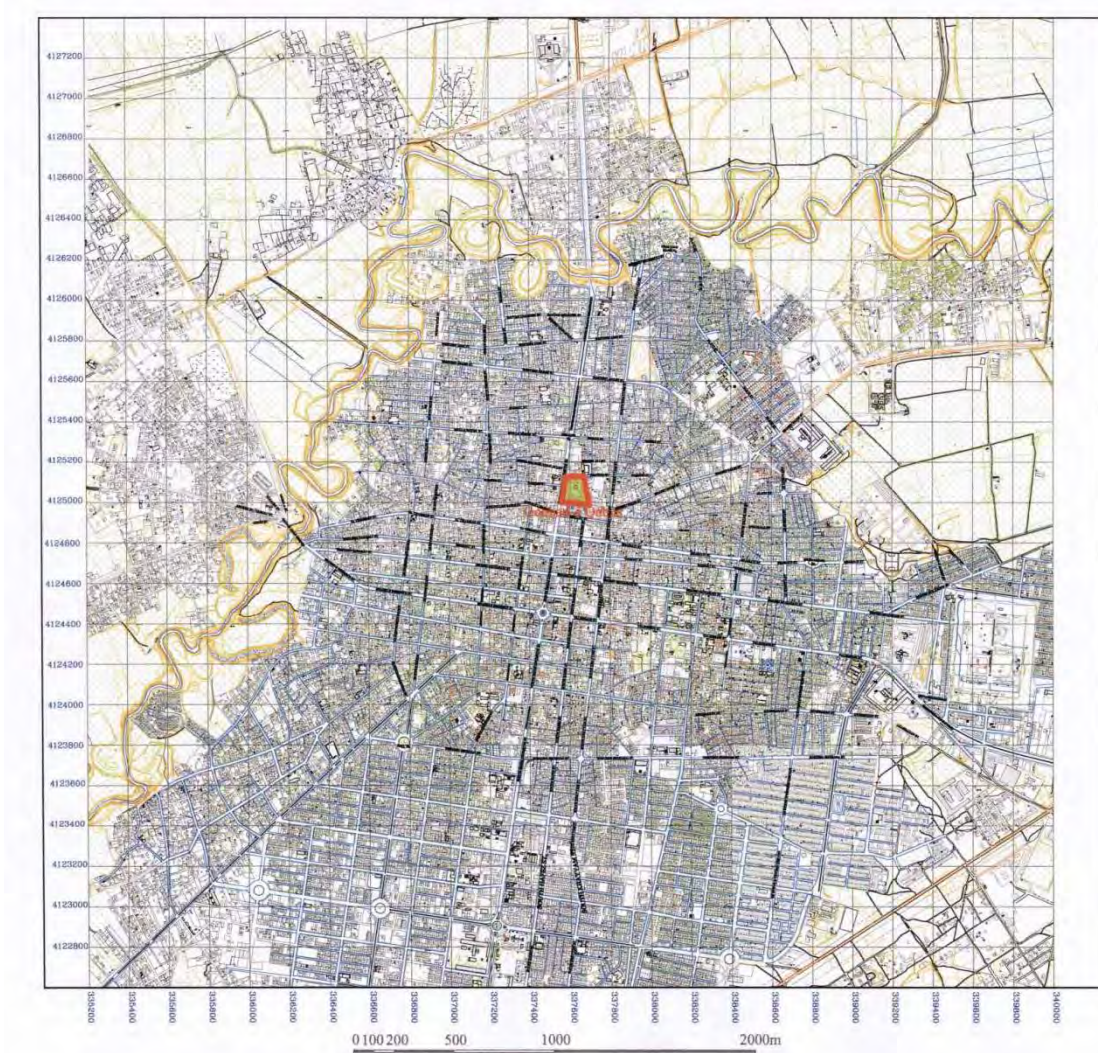


Figure 5- General Landscape of Gonbad-e kāvus

- **Textual description of the boundaries of the nominated property**

Description of Core Zone:

The core zone of property is a rectangular shape zone which has been limited by *Jomhuri* Street in North, *Emam Khomeyni* Street in west and green space area in south and east sides. The angles of this zone have been indicated by 4 points: C1 (at the intersection point of *Emam Khomeyni* and *Jomhuri* Streets). C2 (at *Jomhuri* Street) C3 and C4 at green space area.

This zone is included in the property, the hill which monument stands on it and also the foundation of the monument.

Point	Coordinates	Point	Coordinates
C ₁	N: 37° 15' 31.9"	C ₃	N: 37° 15' 27.9"
	E: 55° 9' 55"		E: 55° 9' 59.3"
C ₂	N: 37° 15' 32.3"	C ₄	N: 37° 15' 28.2"
	E: 55° 9' 58.9"		E: 55° 9' 54.4"

Description of Buffer zone

In order to delineate the latitude and longitude of prominent spots around the buffer zone of *Gonbad-e Qābus*, the starting point is taken as B1 at the intersection of *Molla Nafas* street and *Sirus Alley* in northeast side of monument whence the buffer zone line goes along *Molla Nafas* street in eastern direction and proceeds as far as its intersection with *North Khayyam St.* which is point B2 then turning south and after passing point B3 (located on intersection point of *Jomhuri – Khayyam* Streets) and B4 (located on intersection point of *Shahid Falahi – Khayyam* Streets) it reaches to B5 (located on intersection point of *Dr. Chamran – Khayyam* Streets) then turning west and after passing point B6 (located on intersection point of *North Hafez – Dr. Chamran* Streets) and B7 (located on intersection point of *Emam Khomeyni – Dr. Chamran* Streets) it reaches to B8 (located on intersection point of *Dr. Chamran – North Makhtum* Streets) in a north direction it enters *Makhtum* Street and after moving along this street it reaches B9 (located on intersection point of *Ayatollah Saiidi – North Makhtum* Streets). Here it passes across the *Ayatollah Saiidi* street and reaches B10, from this point the line enters to urban fabric and after passing B11 and B12 (located at a closed Alley in fabric) it reached B13 located at *Kamine* Street then it turns to eastside and after moving along the *Kamine* Street it reaches B14 (located on intersection point of *Kamine* Street and *Sirus Alley*). Then traveling northwards and after passing B15 (located on the intersection point of *Sirus Alley* and *Mirza Kochak Khan Alley*) along the *Sirus Alley* it reaches B1 which it is the starting point.

Point	Coordinates
B ₁	N: 37° 15' 38.8"
	E: 55° 9' 50.4"
B ₂	N: 37° 15' 38.2"
	E: 55° 10' 5.5"
B ₃	N: 37° 15' 32.1"
	E: 55° 10' 4.8"
B ₄	N: 37° 15' 26.6"
	E: 55° 10' 4.5"
B ₅	N: 37° 15' 21.6"
	E: 55° 10' 3.7"
B ₆	N: 37° 15' 21.8"
	E: 55° 9' 57.7"
B ₇	N: 37° 15' 22.6"
	E: 55° 9' 52.5"
B ₈	N: 37° 15' 23.2"
	E: 55° 9' 47.1"

Point	Coordinates
B ₉	N: 37° 15' 27.5"
	E: 55° 9' 47.9"
B ₁₀	N: 37° 15' 27.6"
	E: 55° 9' 47.5"
B ₁₁	N: 37° 15' 29"
	E: 55° 9' 47.5"
B ₁₂	N: 37° 15' 28.9"
	E: 55° 9' 48.4"
B ₁₃	N: 37° 15' 30.2"
	E: 55° 9' 48.4"
B ₁₄	N: 37° 15' 30.9"
	E: 55° 9' 49.9"
B ₁₅	N: 37° 15' 33.9"
	E: 55° 9' 50.2"

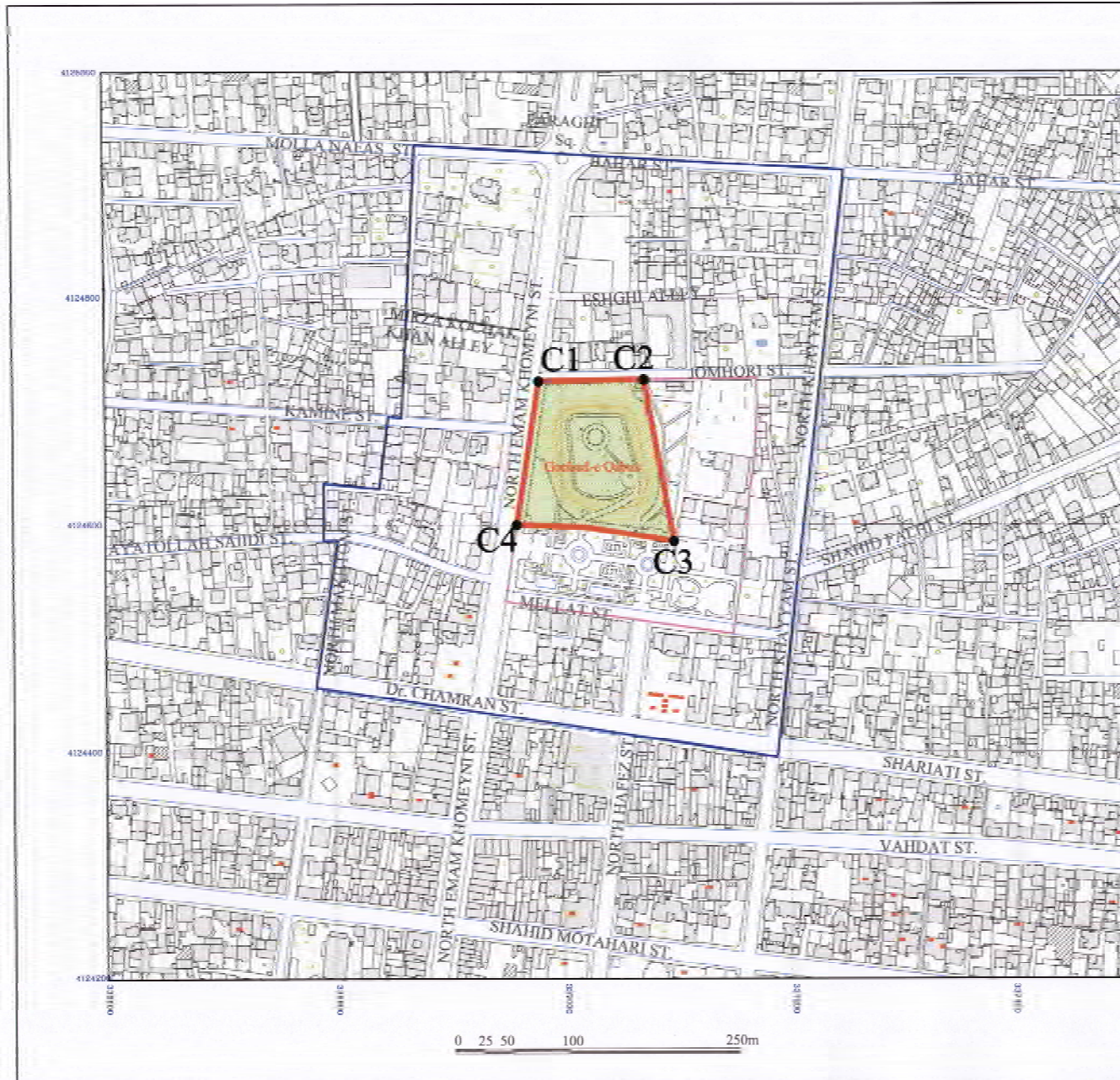
Description of Landscape Zone

In order to delineate the latitude and longitude of the prominent points around landscape of Gonbad-e Qābus , we begin at point L1 located at the North end of *Emam Khomeyni St.* on the *Dashli Boron* bridge, then proceed in a Northeastern direction till it reaches point L2 located in *Salman-e Farsi Sq.* Afterwards turning southeastwards it reaches point L3 located at intersection of *Alavi* and *Falahi St.* The line extends along southwards till it reaches point L4 located at central point of *Mohamadi Sq.* Then continuing along southwards after passing through *Motahari Avenue* it reaches point L5 located at intersection point of *Maleko Shoara-e Bahar St* and eastern *Shohada St.* Afterwards at the western direction along *Shohada St.* it reaches L6 at *Sina Square*, continuing along Northwestern direction at the end of *Beheshti Street* it joins L7 located on the *Gadam Abad* bridge at intersection point of *Azadi, Abozar* and *Mosala* roads. Then traveling along the Northeastern direction it reaches L8 at the North end of *Saidi St.* Then traveling along the same direction after passing *Mabas Street* it reaches L1 which it is the starting point.

Points	Coordinates
L ₁	N: 37° 16' 3.6"
	E: 55° 9' 59.5"
L ₂	N: 37° 16' 07.9"
	E: 55° 10' 14.9"
L ₃	N: 37° 15' 40"
	E: 55° 10' 37.4"
L ₄	N: 37° 15' 19"
	E: 55° 10' 45"

Points	Coordinates
L ₅	N: 37° 14' 47.9"
	E: 55° 10' 41.4"
L ₆	N: 37° 14' 49.1"
	E: 55° 9' 23"
L ₇	N: 37° 15' 21.3"
	E: 55° 9' 01.2"
L ₈	N: 37° 15' 32.4"
	E: 55° 9' 13.2"

- **A4 Size Map of the Nominated Property, showing Boundaries and Buffer Zone**



Iranian Cultural Heritage, Handicrafts & Tourism Organization (ICHHTO)

Gonbad-e Qabus

— Geographical Coordinates of the Core zone —

Core Zone :

- 1-Any activities leading to the destruction of the historical core zone of the monument is forbidden.
- 2-Any operations resulting in damage to the foundation of the monument is strictly prohibited.
- 3-Any intervention or development activity such as:
restoration and reorganization of the site shall be valid and effective only after being planned and approved by ICHHTO.
- 4-ICHHTO has a monopoly on all the archaeological researches and excavations in the core zone.

— Geographical Coordinates of the Core zone —

Point	N	E
C 1	37° 15' 31.9"	55° 09' 55"
C 2	37° 15' 32.3"	55° 9' 58.9"
C 3	37° 15' 27.9"	55° 9' 59.3"
C 4	37° 15' 28.2"	55° 09' 54.4"

— LEGEND —

Landscape Zone ———

Buffer Zone ———

Core Zone ———

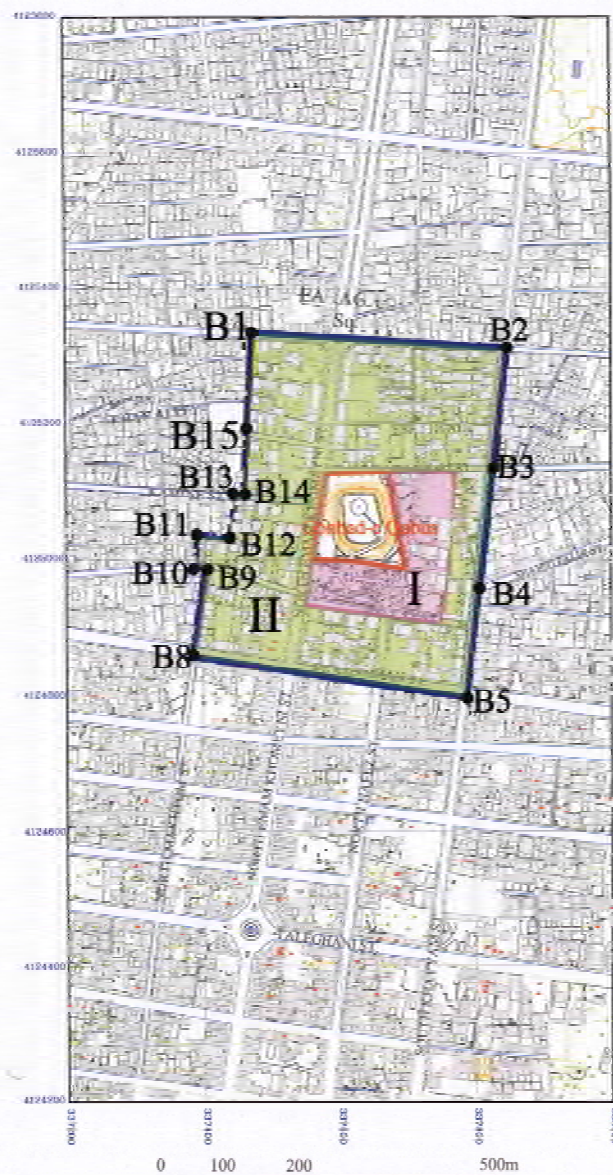
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NO: I-3 | Date: 2011

Core Zone

Gonbad - e Qabus Base (GQB)

Reference: The Research Center of GQB



Regulation

Buffer Zone :

Zone I:

- 1- Any operations resulting in damage to the foundation of the monument and/or harming its landscape such as: excavating, moving earth, earth filling and leveling, developing, digging water wells or sewage... is strictly prohibited.
- 2- Any intervention or development activity such as: restoration, revitalization, reorganization of the site or the garden, lighting, designing and implementing green space within the zone I of the monument shall be valid and effective only after being planned and approved by ICHHTO
- 3- ICHHTO has a monopoly on all the archaeological researches and excavations in the zone I of the monument
- 4- All the structures existing within the zone I of the monument shall be removed to open up the space.

Zone II :

- 1- Any activities within the zone II harming the base of the core zone is prohibited such as: the construction of any kind of water canals, digging sewage or water wells, installation of vibrating, noisy and smoking machinery as well as directing surface waters toward the core zone of the monument.
- 2- Wall facades of streets near the Tower shall be restored with traditional materials homogenous with the monument according to ICHHTO measures
- 3- Construction of buildings in two floors up to a height of 7.5m within this area is permitted
- 4- Any kinds of construction permits and the end of work certificate for construction charts as well as development designs shall be approved by ICHHTO
- 5- the façade of buildings and architectural designs must be in harmony with the historical core zone of the monument as well as the original and indigenous architecture of the region
- 6- Traffic of heavy motor vehicles within Imam Khomeini, Jomhuri and Mellat Streets is strictly forbidden

Iranian Cultural Heritage, Handicrafts & Tourism Organization (ICHHTO)

Gonbad-e Qabus

Geographical Coordinates of the Buffer zone

Point	N	E
B 1	37° 15' 38.8"	55° 9' 50.4"
B 2	37° 15' 38.2"	55° 10' 5.59"
B 3	37° 15' 32.7"	55° 10' 4.8"
B 4	37° 15' 26.6"	55° 10' 4.5"
B 5	37° 15' 21.6"	55° 15' 30.9"
B 6	37° 15' 21.8"	55° 9' 30.9"
B 7	37° 15' 22.6"	55° 9' 52.2"
B 8	37° 15' 23.2"	55° 9' 47.1"
B 9	37° 15' 27.5"	55° 9' 47.9"
B 10	37° 15' 27.6"	55° 09' 47.5"
B 11	37° 15' 29"	55° 9' 47.5"
B 12	37° 15' 28.9"	55° 9' 48.4"
B 13	37° 15' 30.2"	55° 9' 48.4"
B 14	37° 15' 30.9"	55° 9' 49.9"
B 15	37° 15' 33.9"	55° 9' 50.2"

LEGEND

Landscape Zone	
Buffer Zone	
Zone I	
Zone II	
Core Zone	

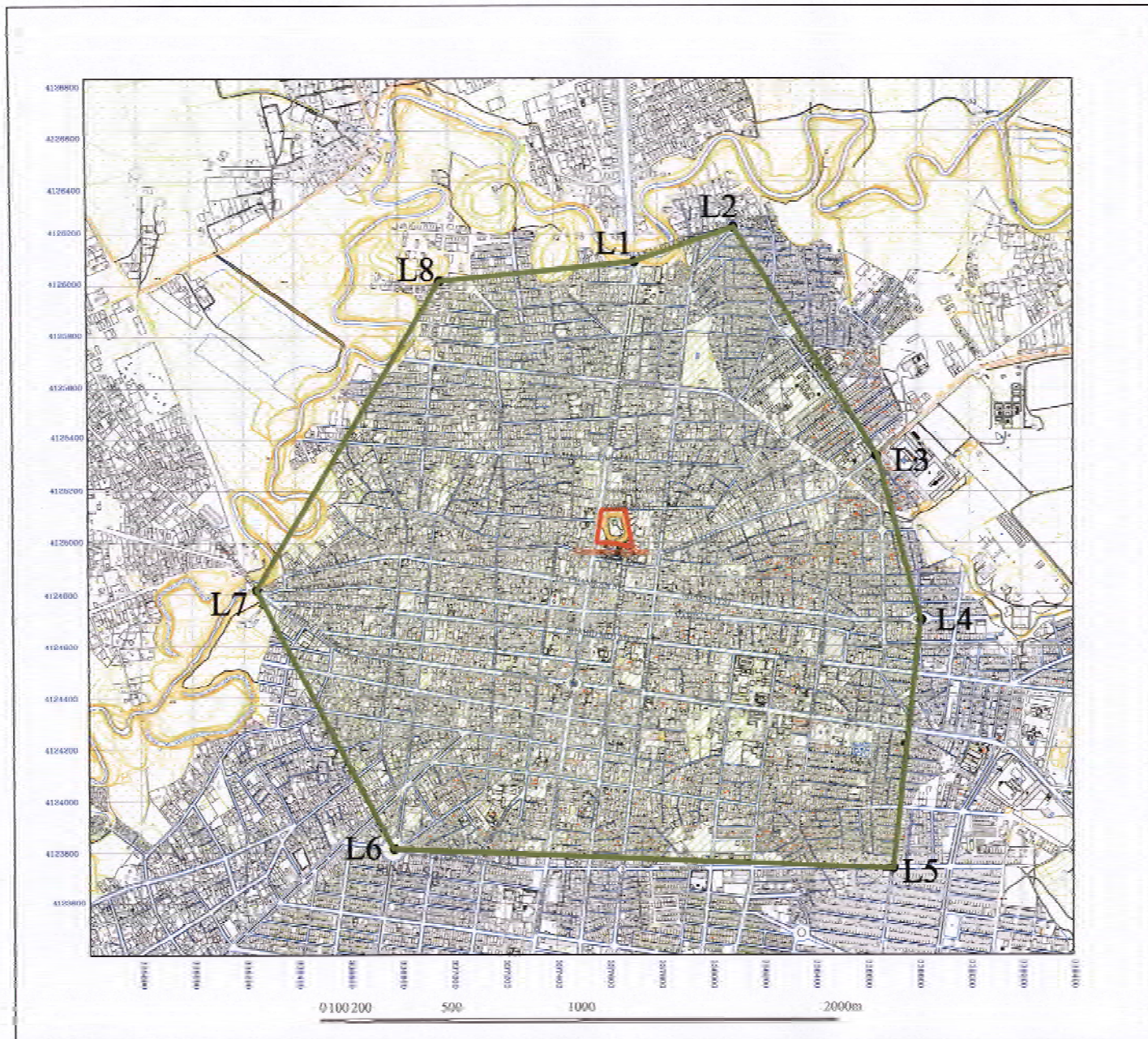
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NO: I-2 | Date: 2011

Buffer Zone

Gonbad - e Qabus Base (GQB)

Reference: The Research Center of GQB



Iranian Cultural Heritage, Handicrafts & Tourism Organization (ICHHTO)

Gonbad-e Qabus

Regulation

Landscape Zone :

Any large scale intervention such as :
the construction of high rise buildings or
urban facilities having a negative influence
on the tower landscape is prohibited

Geographical Coordinates of the Landscape zone

Point	N	E
L 1	37° 16' 03.6"	55° 9' 59.5"
L 2	37° 16' 07.9"	55° 10' 14.9"
L 3	37° 15' 40"	55° 10' 37.4"
L 4	37° 15' 19"	55° 10' 45"
L 5	37° 14' 47.9"	55° 10' 41.4"
L 6	37° 14' 49.1"	55° 09' 23"
L 7	37° 15' 21.3"	55° 9' 01.2"
L 8	37° 15' 32.4"	55° 9' 13.2"

LEGEND

- Landscape Zone (Green line)
- Buffer Zone (Blue line)
- Core Zone (Red line)

N

NO: I-1 | Date: 2011

Landscape Zone

Gonbad - e Qabus Base (GQB)

Reference: The Research Center of GQB

- **Proposed Statement of Outstanding Universal Value**

Gonbad-e Qābus, located 3 km north of the ancient city of *Jorjan*, the historic power base of the Zyarids dynasty, and within the modern town of Gonbad-e Kavus, Golestan Province, Iran, is an outstanding example of Islamic architecture, designed and built on the order and during the reign of *Shams ul-Ma'ali, Amir Qabus Ibn Woshmgir* in the year 397 the lunar Hegira, and the year 375 the solar Hegira, 1006 AD which turned to be the tallest pure brick made tower in the world.¹ The tower was built as the mausoleum of its founder, following the tradition of rulers and kings showing the arts, magnificence, and authority in a monumental and commemorative structure, which brings to mind the greatness of the reign of its founder. The construction of this commemorative tomb tower during the lifetime of its founder would not only remind us of the true concept and meaning of the monument at the time but also is an exception which occurs in this period.

As mentioned before the significance of Gonbad-e Qābus is not only because of its relation to the a Zyarids ruler but more than that because of its association with one of the most renown literate and writers of the so-called *Khorassan* school of writing of the 4th Century AH. As indicated in previous sections *Shams ul-Ma'ali, Amir Qabus Ibn Woshmgir* wrote *the Qābusnameh* for his son *Gilanshah* so that after taking the power he could benefit from its guidance and advices to be able to rule better. Of course this never materialized but the book remained as a valuable treasure adding to the wealth of Persian literatures which is, even today, among the most important references and sources of the *Dari* Persian language and also the peculiarities and advantages of the Iranian identity.

In fact Gorgan is the exchanging location of the tangible and intangible heritage of the Iranian culture and in this respect Gonbad-e Qābus, is an exceptional example of the Iranian as well as Central Asian architecture, illustrating the intangible culture of the people of the time. Furthermore Gonbad-e Qābus being the place of architectural cultural exchange between the Central Asian nomads and the ancient Iranian civilization could be considered as a common heritage between the Turks and Iranians and a significant point in the beginning of the Islamic era.

The tower considered to be a magnificent masterpiece of the Islamic architecture from the 4th Century AH, is an enormous decagon building with a conic roof, which forms the golden ratio that Phi equals 1.618. The decagon with its 3 meter-thick wall, divided into 10 sides, has a diameter of 17 m. The Tower was built on such a

1 Arthur U. Pope and Ackerman Phyllis, 1964, p:1184 ; Hillenbrand, 1999, p:253

scientific and architectural design that at the front of the Tower, at an external circle, one can hear one's echo.

Gonbad-e Qābus bearing an age of over 1000 years is the oldest and first example of a monumental tomb structure surviving until today that employs a double-shelled dome construction with an outer conical roof covering an inner hemispherical one². Although it is the oldest but in terms of the height and other architectural characteristics and structure it is considered to be the tallest and most complete among its types. The tower is still an imposing figure in the Gorgan landscape and is visible from miles around.

One of the most outstanding features of this structure is its conical roof which is made with extreme mastery to further highlight the significance and magnificence of the tower in so much as one can claim that it is the conical dome that perfects the tower adding to its 37-meter height.

Another most notable and exceptional feature is its over 9 meters deep brick foundation built to erect a tower of more than 53 meters height, which has guaranteed the stability of the structure against extreme natural disasters such as destructive earthquakes. Throughout long centuries passed the tower has thus had very trivial declination southwards.

The builders have used an alteration of one row of complete bricks and one of quarters on top of each side, and continued the pattern to the body of the cone, which has resulted in the best type of brick arrangement of the sort both horizontally and vertically. Thus, extreme mastery is employed in the building of the tower as there are 5 to 6 bricks of 25×25 and 6×6 laid in the row right under the neck which are kept together by plaster mortar, and then fringed bricks are loaded over them.

Another exceptional feature influencing extensively the Islamic arts in the following periods are the prototypes of the inscriptions of Gonbad-e Qābus with their *Kufic* calligraphy first spotted in the Razi style of architecture under the Ziyarids. The calligraphy style is very simple and legible, which is used mainly in the inscriptions of buildings, and that is where the name *Banaii [related to buildings] Kufic (Mo'aqeli)*³ comes from.

² Arthur U. Pope and Ackerman Phyllis, 1964, p:1184 ; Hillenbrand, 1999, p:407

³ *Mo'aqeli* is writing school that both its *savad* and *baiaz* are decipherable, that is to say its darkish is read whitish something else

Gonbad-e Qābus not only served as an exceptional prototype in expansion of tomb tower architecture in the region but also show the first stage in breaking from the continuous circle and the beginning of flanged bodies. Special kind of fringed bricks locally known as rooted-brick (*ajor-e rishedar*) were used for the finishing of the final parts of the conical roof. The same technique was later used in another tomb tower in Mazandaran (Radkan Tower). Undoubtedly this tower became a model for all the commemorative towers and *milles* built afterward along the east-west route, particularly in Elborz fringes and as it is explained in the section on the comparative studies although it is considered to be the starting point in the construction of the brick-made tomb towers with conical roof in the world but at the same time and still remains the most complete and attractive of them specially in terms of technological and architectural concepts and aspects.

- **Criteria under which property is nominated**

- *Criterion (i): represent a masterpiece of human creative genius;*

Gonbad-e Qābus being one of the most significant structures of the early Islamic centuries and also the first example of monumental tomb structures that employs a double dome construction with an outer conical covering and inner hemispherical one, is a masterpiece and an outstanding achievement in the early Islamic architecture which has extensively contributed to the development of Islamic architecture. It is also considered to be among the best proportioned and most representative brick-made tomb towers of the early Islamic centuries which with its specific geometry, particularly the change from circle to the 10 flanged form, not only contributed immensely to the knowledge of the structural stability of tomb towers but also aesthetically is exceptional. The inscriptions of the tomb with their *Kufic* calligraphy first spotted in the *Razi* style in the Zyarids period, is another outstanding feature which influenced greatly the following historic periods.

- *Criterion (ii): exhibit an important interchange of human values, over a span of time or within a cultural area of the world, on developments in architecture or technology, monumental arts, town-planning or landscape design;*

The creative architecture of Gonbad-e Qābus played a significant role in the development of the architecture, technology and monumental aspects of the tomb towers of the Iranian territory, Anatoly and Central Asia. Gonbad-e Qābus was a prototype for the development of the construction of tomb towers, becoming a significant reference in the history of Islamic architecture. Gonbad-e Qābus being the place of architectural cultural exchange between the Central Asian nomads and the ancient Iranian civilisation could be considered as a common heritage between the Turks and Iranians and a significant point in the beginning of the Islamic era.

- *Criterion (iii): bear a unique or at least exceptional testimony to a cultural tradition or to a civilization which is living or which has disappeared;*

Gonbad-e Qābus represents exceptional evidence to the power and quality of the Zyarids civilization which dominated a major part of the region during the 10th and 11th centuries. The tower also stands for the cultural tradition as well as

funerary building technology of the time epitomizing the paradisaic quality of the ascension toward the heavens, a tradition which was then widely expanded throughout the region. The significance of Gonbad-e Qābus amongst the early Islamic tomb towers is not merely due to its relation with a Zyarids Emir but also is owed to its attribution to one of the most renown literate writers of the so-called *Khorassan* school of writing in the 4th Century AH and creation of *Qābusnameh* (a new method in story telling), considered to be among the most important sources of *Farsi-e dari* (*dari* Persian) in the world, as a valuable intangible heritage of mankind. Therefore Gonbad-e Qābus is in fact the starting point in a regional cultural tradition in which tombs are built for the writers and literates, a tradition which is continued to the present time.

- *Criterion (iv): be an outstanding example of a type of building, architectural or technological ensemble or landscape which illustrates (a) significant stage(s) in human history;*

Gonbad-e Qābus is an outstanding example of Islamic architecture in the region which played a significant role, illustrating an exceptional case in further dissemination of the concept and architecture of the tomb towers in Iran, Anatoly, and Central Asia. Its innovative structural design supporting the stability of this over one thousand years old brick-made monument and initiating a specific building technology to erect a 52 meters height tower with 9 meters deep brick-made foundation for the first time in history, have made Gonbad-e Qābus an exception among the similar towers in the world.

- **Name and Contact Information of Official local Institution/Agency**

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1

Identification of the Property

1. Identification of the Property

Gonbad-e Qābus Ibn Voshmgir is located in Golestan Province (northeast of Iran), Gonbad-e Kāvus town, and to the north of the town and the northwest corner of the National Park, on top of a mound of 10 meters height. Also known as *Mil-e Qābus*, *Borj-e Qābus* (Tower of Qābus), and *Maghbar-e Qābus* (the Mausoleum of Qābus), it is located 3km from the southwest of the ruins of the ancient town of *Jorjan* or Gorgan. One of the most magnificent structures of the early Islamic centuries, this structure is still standing out amongst the chaos of urban life and constructions, catching the eyes of beholders even from kilometer distances.

1. a Country (and State Party if different)

Islamic Republic of IRAN.



Figure 1- The Location of Iran

1. b State, province or region

Gonbad-e Kāvus town, Golestan Province

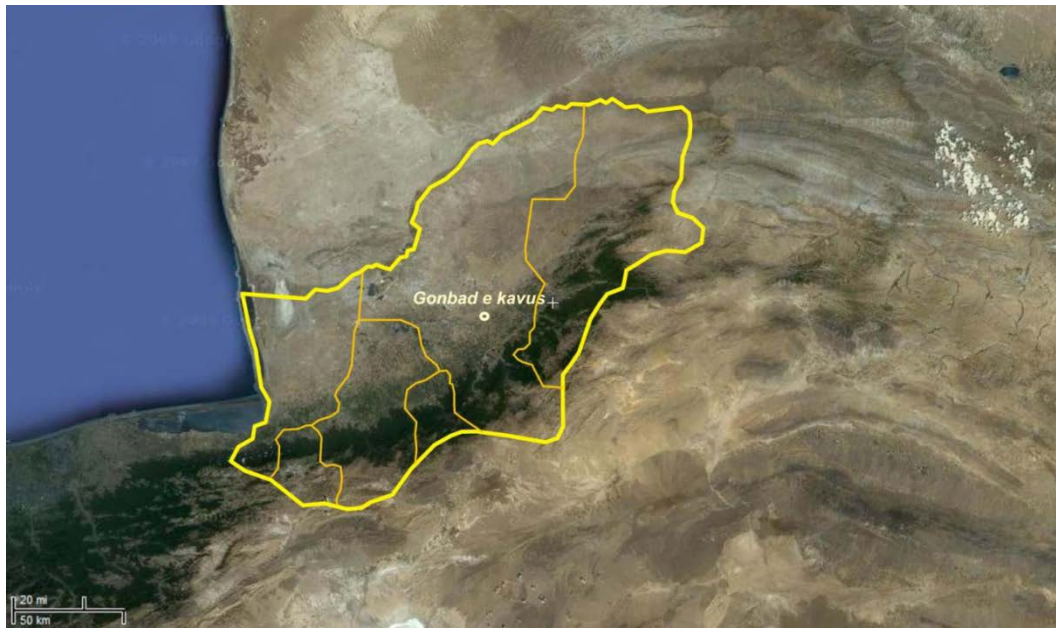


Figure 2-The Location of Gonbad-e Kāvus in Golestan province

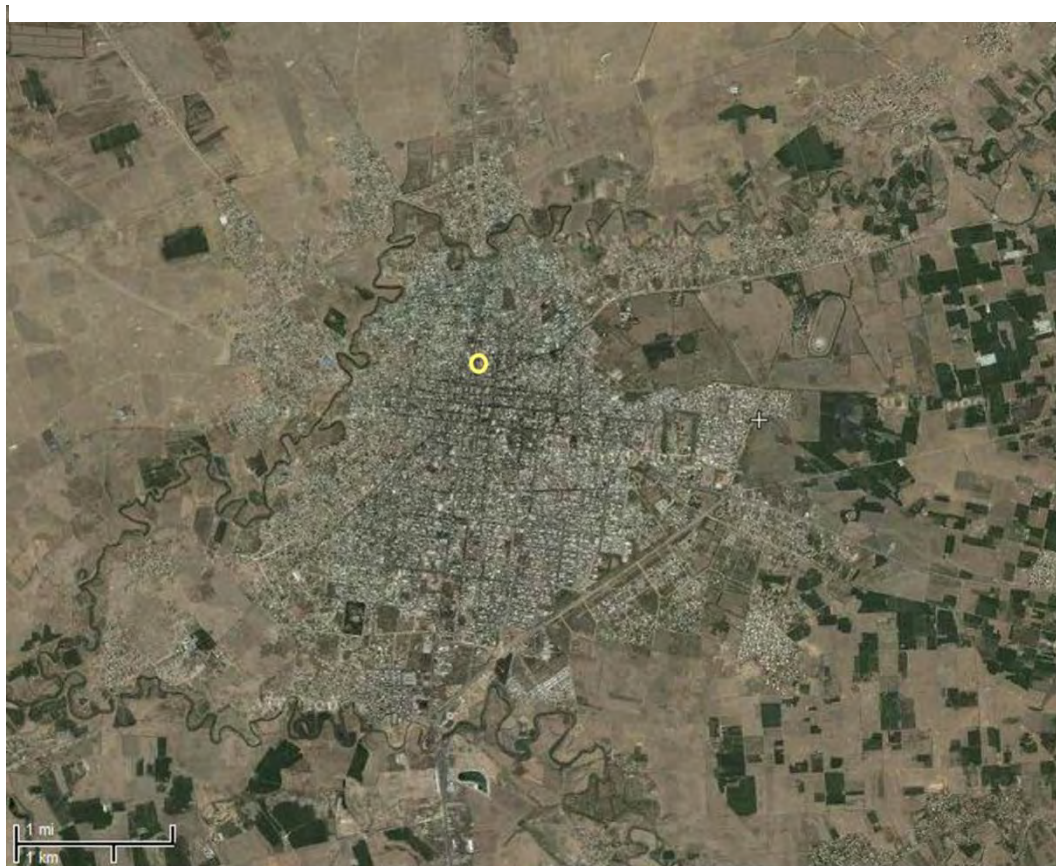


Figure 3-The Location of Gonbad-e Qābus

1. c Name of property

Gonbad-e Qābus

1. d Geographical Coordinates to the Nearest Second

Table 1 The Geographical Location of the Nominated Property

Name of area	Name of Individual Heritage	Center Point Coordinates	Map ref.
Gonbad-e Kāvus	Gonbad-e Qābus	E:55° 10' 08.4", N:37° 15' 28.9"	0-5

1. e Maps and Plans, Showing the Boundaries of the Nominated Property and Buffer Zones

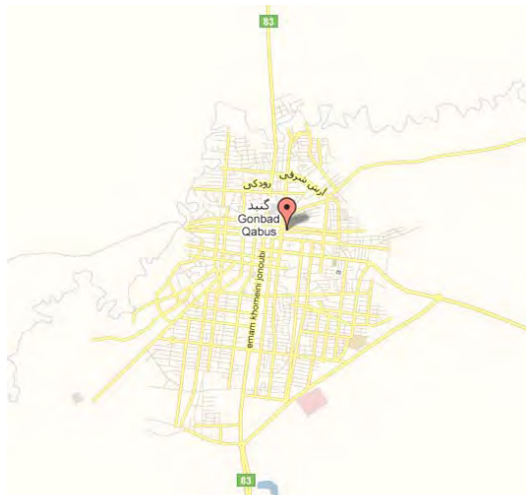


Figure 4: Map Showing the Location of the of Nominated property

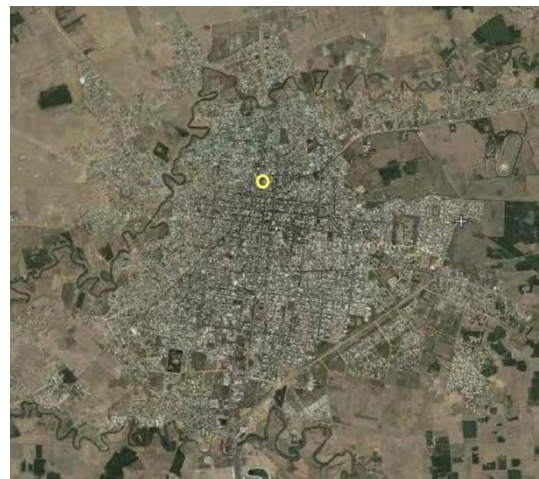


Figure 5: The Aerial Image Showing the Location of the of Nominated property

1.f Area of Nominated Property(ha) and Proposed Buffer Zone(ha)



Figure 6: The Aerial Image Showing the Limited of the Nominated property

Table 2 The area of the Nominated Property and the buffer zone

Name of Individual Heritage	Core Zone (ha)	buffer zone (ha)	Total (ha)	Landscape Zone
Gonbad-e Qābus	1.475446 ha	17.855098 ha	19.330544 ha	478.704048 ha

Textual description of the boundaries of the nominated property

Description of Core Zone:

The core zone of property is a rectangular shape zone which has been limited by *Jomhuri* Street in North, *Emam Khomeyni* Street in the west and green space area in south and east sides. The angles of this zone have been indicated by 4 points: C1 (at the intersection point of *Emam Khomeyni* and *Jomhuri* Streets). C2 (at *Jomhuri* Street) C3 and C4 at green space area.

This zone is included the property, the hill which monument stand on it and also the foundation of the monument.

Point	Coordinates	Point	Coordinates
C ₁	N: 37° 15' 31.9"	C ₃	N: 37° 15' 27.9"
	E: 55° 9' 55"		E: 55° 9' 59.3"
C ₂	N: 37° 15' 32.3"	C ₄	N: 37° 15' 28.2"
	E: 55° 9' 58.9"		E: 55° 9' 54.4"

Description of Buffer zone

In order to delineate the latitude and longitude of prominent spots around the buffer zone of Gonbad-e Qābus, the starting point is taken as B1 at the intersection of *Molla Nafas* street and *Sirus Alley* in northeast side of monument whence the buffer zone line goes along *Molla Nafas* Street in eastern direction and proceeds as far as its intersection with *North Khayyam St.* which is point B2 then turning south and after passing point B3 (located on intersection point of *Jomhuri – Khayyam* Streets) and B4 (located on intersection point of *Shahid Falahi – Khayyam* Streets) it reaches to B5 (located on intersection point of *Dr. Chamran – Khayyam* Streets) then turning west and after passing point B6 (located on intersection point of *North Hafez – Dr. Chamran* Streets) and B7 (located on intersection point of *Emam Khomeyni – Dr. Chamran* Streets) it reaches to B8 (located on intersection point of *Dr. Chamran – North Makhtum* Streets) in a north direction it enters *Makhtum* Street and After moving along this street it reaches B9 (located on intersection point of *Ayatollah Saiidi – North Makhtum* Streets). Here it passes across the *Ayatollah Saiidi* street and reaches B10, from this point the line enters to urban fabric and after passing B11 and B12 (located at a closed Alley in fabric) it reaches B13 located at *Kamine* Street then it turns to eastside and after moving along the *Kamine* Street it reaches B14 (located on intersection point of *Kamine* Street and *Sirus Alley*). Then traveling northwards and after passing B15 (located on intersection point of *Sirus Alley* and *Mirza Kochak Khan Alley*) along the *Sirus Alley* it reaches B1 which it is the starting point.

Point	Coordinates
B ₁	N: 37° 15' 38.8"
	E: 55° 9' 50.4"
B ₂	N: 37° 15' 38.2"
	E: 55° 10' 5.5"
B ₃	N: 37° 15' 32.1"
	E: 55° 10' 4.8"
B ₄	N: 37° 15' 26.6"
	E: 55° 10' 4.5"
B ₅	N: 37° 15' 21.6"
	E: 55° 10' 3.7"
B ₆	N: 37° 15' 21.8"
	E: 55° 9' 57.7"
B ₇	N: 37° 15' 22.6"
	E: 55° 9' 52.5"
B ₈	N: 37° 15' 23.2"
	E: 55° 9' 47.1"

Point	Coordinates
B ₉	N: 37° 15' 27.5"
	E: 55° 9' 47.9"
B ₁₀	N: 37° 15' 27.6"
	E: 55° 9' 47.5"
B ₁₁	N: 37° 15' 29"
	E: 55° 9' 47.5"
B ₁₂	N: 37° 15' 28.9"
	E: 55° 9' 48.4"
B ₁₃	N: 37° 15' 30.2"
	E: 55° 9' 48.4"
B ₁₄	N: 37° 15' 30.9"
	E: 55° 9' 49.9"
B ₁₅	N: 37° 15' 33.9"
	E: 55° 9' 50.2"

Description of Landscape Zone

In order to delineate the latitude and longitude of prominent points around landscape of Gonbad-e Qābus, we begin at point L1 located at the North end of *Emam Khomeyni St.* on the *Dashli Boron* bridge, then proceed in a Northeastern direction till it reaches point L2 located in *Salman-e Farsi Sq.* Afterwards turning southeastwards it reaches point L3 located at intersection of *Alavi* and *Falahi St.* The line extends along southwards till it reaches point L4 located at central point of *Mohamadi Sq.* then continuing along southwards after passing through *Motahari Avenue* it reaches point L5 located at intersection point of *Maleko Shoara-e Bahar St.* and eastern *Shohada St.* Afterwards at the western direction along *Shohada St.* it reaches L6 at *Sina Square*, continuing along Northwestern direction at the end of *Beheshti Street* it joins L7 located on the *Gadam Abad* bridge at intersection point of *Azadi, Abozar* and *Mosala* roads. Then traveling along the Northeastern direction it reaches L8 at the North end of *Saidi St.* Then traveling along the same direction after passing *Mabas Street* it reaches L1, which it is the starting point.

Points	Coordinates
L ₁	N: 37° 16' 3.6"
	E: 55° 9' 59.5"
L ₂	N: 37° 16' 07.9"
	E: 55° 10' 14.9"
L ₃	N: 37° 15' 40"
	E: 55° 10' 37.4"
L ₄	N: 37° 15' 19"
	E: 55° 10' 45"

Points	Coordinates
L ₅	N: 37° 14' 47.9"
	E: 55° 10' 41.4"
L ₆	N: 37° 14' 49.1"
	E: 55° 9' 23"
L ₇	N: 37° 15' 21.3"
	E: 55° 9' 01.2"
L ₈	N: 37° 15' 32.4"
	E: 55° 9' 13.2"



Iranian Cultural Heritage, Handicrafts & Tourism Organization
(ICHHTO)

Gonbad-e Qabus

— Geographical Coordinates of the Core zone —

Core Zone :

- 1-Any activities leading to the destruction of the historical core zone of the monument is forbidden.
- 2- Any operations resulting in damage to the foundation of the monument is strictly prohibited.
- 3-Any intervention or development activity such as:
restoration and reorganization of the site shall be valid and effective only after being planned and approved by ICHHTO.
- 4-ICHHTO has a monopoly on all the archaeological researches and excavations in the core zone.

— Geographical Coordinates of the Core zone —

Point	N	E
C 1	37° 15' 31.9"	55° 09' 55"
C 2	37° 15' 32.3"	55° 9' 58.9"
C 3	37° 15' 27.9"	55° 9' 59.3"
C 4	37° 15' 28.2"	55° 09' 54.4"

— LEGEND —

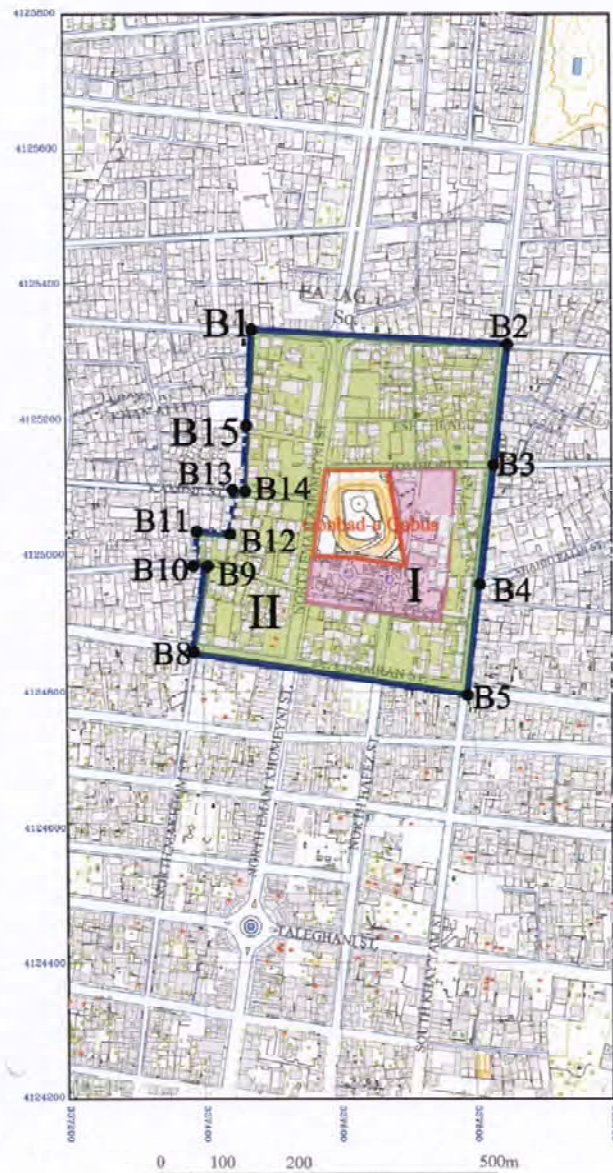
Landscape Zone	—	
Buffer Zone	—	N
Core Zone	—	

NO: I-3 Date: 2011

Core Zone

Gonbad - e Qabus Base
(GQB)

Reference: The Research Center of GQB



Regulation

Buffer Zone :

Zone I:

- 1- Any operations resulting in damage to the foundation of the monument and/or harming its landscape such as: excavating, moving earth, earth filling and leveling, developing, digging water wells or sewage... is strictly prohibited.
- 2- Any intervention or development activity such as: restoration, revitalization, reorganization of the site or the garden, lighting, designing and implementing green space within the zone I of the monument shall be valid and effective only after being planned and approved by ICHHTO
- 3- ICHHTO has a monopoly on all the archaeological researches and excavations in the zone I of the monument
- 4- All the structures existing within the zone I of the monument shall be removed to open up the space..

Zone II :

- 1- Any activities within the zone II harming the base of the core zone is prohibited such as: the construction of any kind of water canals, digging sewage or water wells, installation of vibrating, noisy and smoking machinery as well as directing surface waters toward the core zone of the monument.
- 2- Wall facades of streets near the Tower shall be restored with traditional materials homogenous with the monument according to ICHHTO measures
- 3- Construction of buildings in two floors up to a height of 7.5m within this area is permitted
- 4- Any kinds of construction permits and the end of work certificate for construction charts as well as development designs shall be approved by ICHHTO
- 5- the façade of buildings and architectural designs must be in harmony with the historical core zone of the monument as well as the original and indigenous architecture of the region
- 6- Traffic of heavy motor vehicles within Emam Khomeini, Jomhuri and Mellat Streets is strictly forbidden

Iranian Cultural Heritage, Handicrafts & Tourism Organization (ICHHTO)

Gonbad-e Qabus

Geographical Coordinates of the Buffer zone

Point	N	E
B 1	37° 15' 38.8"	55° 9' 50.4"
B 2	37° 15' 38.2"	55° 10' 5.59"
B 3	37° 15' .32"	55° 10' 4.8"
B 4	37° 15' 26.6"	55° 10' 4.5"
B 5	37° 15' 21.6"	55° 10' 3.7"
B 6	37° 15' 21.8"	55° 15' 30.9"
B 7	37° 15' 22.6"	55° 9' 52.2"
B 8	37° 15' 23.2"	55° 9' 47.1"
B9	37° 15' 27.5"	55° 9' 47.9"
B10	37° 15' 27.6"	55° 09' 47.5"
B11	37° 15' 29"	55° 9' 47.5"
B12	37° 15' 28.9"	55° 9' 48.4"
B13	37° 15' 30.2"	55° 9' 48.4"
B14	37° 15' 30.9"	55° 9' 49.9"
B15	37° 15' 33.9"	55° 9' 50.2"

LEGEND

- Landscape Zone —
- Buffer Zone —
- Zone I —
- Zone II —
- Core Zone —



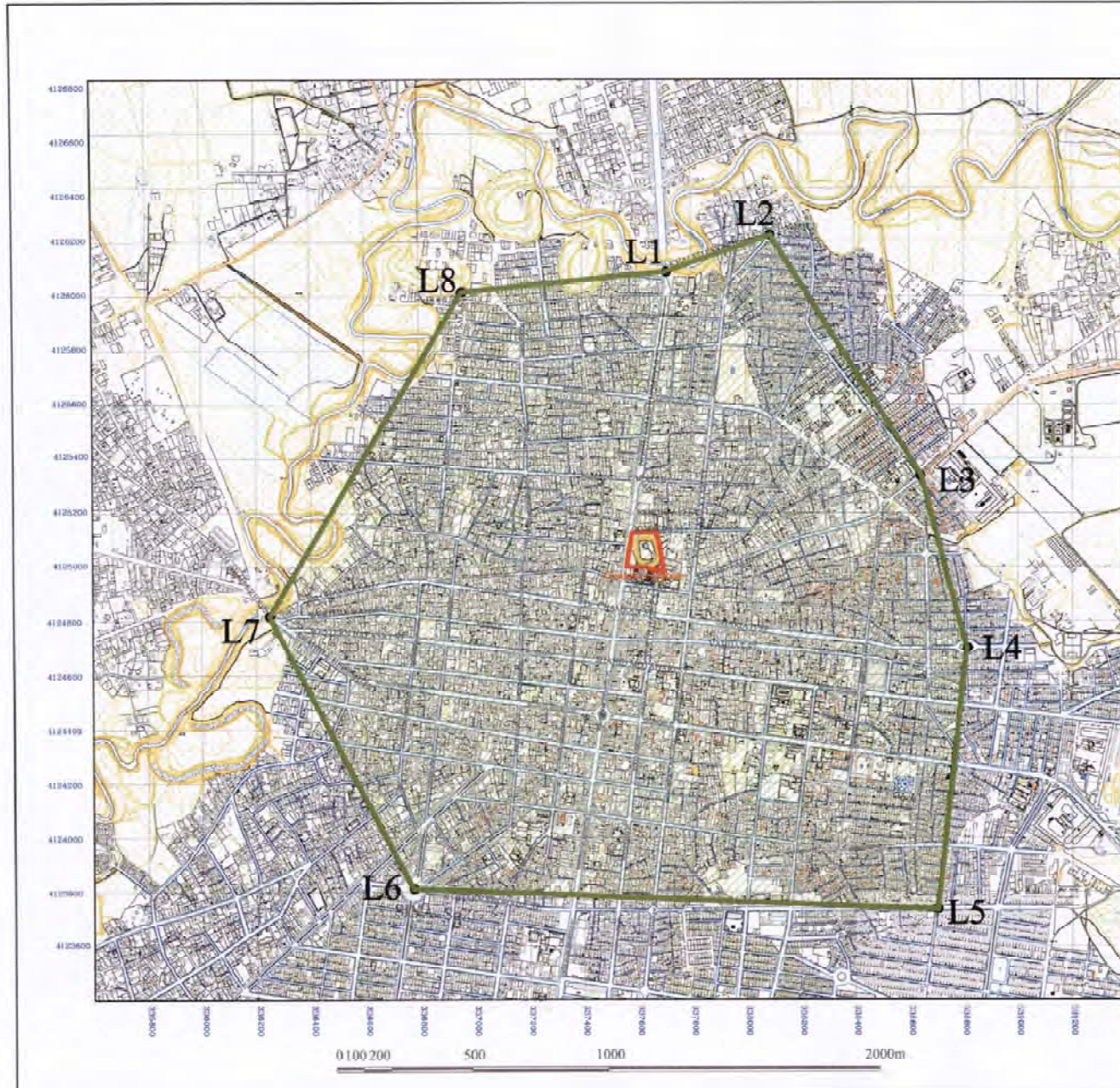
NO: I-2

Date: 2011

Buffer Zone

Gonbad - e Qabus Base (GQB)

Reference: The Research Center of GQB



Iranian Cultural Heritage, Handicrafts & Tourism Organization (ICHHTO)

Gonbad-e Qabus

Regulation

Landscape Zone :

Any large scale intervention such as : the construction of high rise buildings or urban facilities having a negative influence on the tower landscape is prohibited

Geographical Coordinates of the Landscape zone

Point	N	E
L 1	37° 16' 03.6"	55° 9' 59.5"
L 2	37° 16' 07.9"	55° 10' 14.9"
L 3	37° 15' 40"	55° 10' 37.4"
L 4	37° 15' 19"	55° 10' 45"
L 5	37° 14' 47.9"	55° 10' 41.4"
L 6	37° 14' 49.1"	55° 09' 23"
L 7	37° 15' 21.3"	55° 9' 01.2"
L 8	37° 15' 32.4"	55° 9' 13.2"

LEGEND

- Landscape Zone —
- Buffer Zone —
- Core Zone —



NO: I-1 | Date: 2011

Landscape Zone

Gonbad - e Qabus Base (GQB)

Reference: The Research Center of GQB

2

Description

2. Description

Mausoleum (shrine) has followed mosques and schools in the line of significant public structures during the Islamic era. They have constantly been rooted in the very depths of the Iranian society and culture, leaving no more than very few towns across the country with anything but an ample share of such structures¹. Some of these tombs have been of religious functions, and were considered as sacred to many, while some others have played the monumental and memorial roles of celebrating literary characters, heroes, princes, rulers, etc.; in some instances, the identity of the builder or the one buried inside the structure is not clear, and all is known is based on oral narrations.

Tomb structures should be studied in two categories of pre-Islamic and Islamic periods in view of their presence across the land of Iran, various factors effective in their development, and the influence of Islam in this regard, which has been significantly considerable.

It is to be noted that although the Islamic architecture in Iran is clearly influenced by the pre-Islamic structural designs and building techniques but nothing specific with regards to the burial traditions during the periods has so far been found and. according to Hillenbrand, “*the magnificent tomb of Cyrus in Pasargadae is an exception which proves this rule true.*”²



Figure 2 -Tomb of Qābus Ibn Voshmgir in Gonbad-e Kāvus



Figure 1 -Tomb of Cyrus in Passargad

¹ Kiani, 1987, p.23

² Hillenbrand, 1998, p 280

After the emergence of Islam, they began to bury the dead in level graves, and without any special ceremonies, just as Prophet Muhammad had taught them. Over the course of time, the graves of the Prophet's Companions, however, were marked by the erection of wooden columns and shades. These shades and shelters were gradually changed and completed by the addition of altars and prayer places insomuch as to make many of them into mosques³.

Categorized as a tomb tower, Gonbad-e Qābus (*Kāvus*) mausoleum dates back to the 4th century AH (397 AH/ 1006 AD). It is listed among the most significant Islamic tombs, and will be described in details.

³ Hillenbrand, 1998, pp. 314-315

2. a. Description of the property

The earliest mausoleums within the boundaries of Iran were square-shaped, domed structures. However, in the late 10th century AD, they gained their particular fame with the tomb towers; this form continued to remain dominant in the course of the Seljuks reign. The dominance was so clear that it is possible to see instances of almost all types of tomb towers between the years 1000 to 1200 AD. The tombs mainly belong to the rulers, emirs, commanders [*Ispahbods*], and the like. In conformity with the Sunni tenor of the Seljuks rule, the mausoleum of Shiite imams scarcely stands out among such tomb towers; however, several members of the ruling families of the Shiite dynasties of the Caspian area built tomb towers for themselves, examples of which can be spotted around the Western Radkan⁴.



Figure 3 - Radkan Tomb Tower



Figure 4 - Radkan location



Figure 5 - Radkan villege location in Northeastern of the country

⁴ Hillenbrand, 1988, pp. 345-346

One of the most noteworthy, most magnificent tomb towers in the north of Iran is Gonbad-e Qābus [Qābus's Dome], with its outstanding proportions and significance. Built in Gorgan in the 4th century AH (1006 AD), it is considered to be a milestone both as a landmark of the city and also the grave of its founder, Qābus. The structure well played the role of a prototype in the whole area.

The inscriptions along the top and bottom of the tower show that the structure was constructed under the rule of Qābus himself. The interesting point is that inscriptions record the years of its construction both in Hijri and *Yazdgerdi*⁵ calendars.

The structure is 52.8m high on an artificial hillock of 15m height. 10 buttresses⁶ surround the cylindrical body of the tower⁷. Owing to its uniquely ordered design, the structure being the first of its type is of great rigidity, in a way that none of the tomb towers built afterward, could match its proportions and scales



Figure 6- Gonbad-e Qābus general view



Figure 7 - Part of lower inscription



Figure 8 -Part of upper inscription

⁵ It is marked by the year of enthronement of Yazdgerd III, the last Sassanid king, which corresponds to 11 AHS. The lunar Hijri date on the inscription is 397, which corresponds to 385 AHS, and 375 Yazdgerdi.

⁶ A type of buttress like a triangular prism

⁷ Pirnia, 2004, pp. 171-172

2. a. 1. Geographical context

Gonbad-e Qābus is located in the north east of Iran, Golestan province, Gonbad-e Kāvus town. Based on the environmental division of Iran this province is within the temperate area of the north of the country, bounded by $36^{\circ} 24$ to $38^{\circ} 5$ N latitudes and $53^{\circ} 51$ to $56^{\circ} 4$ E longitude. Golestan province shares borders with Turkmenistan to the north, Semnan province to the South, Khorassan to the east, and the Caspian Sea and Mazandaran to the west. The south and east borders of the province are lined by mountains, which are the extensions of Alborz stretching east-west. They begin at the border between Mazandaran and Golestan (Galugah), and stretch in crescent to reach *Ala Dagh*, *Binalud*, and *Hezar Masjed* mountains in Khorassan in the southeast of the province. *Shah Ku*, *Deraz No*, *Pir Gerde kuh*, and *Ghal'e Muran* are of the highest mountains of Golestan, and Mount *Kahkeshan* is the highest peak standing 3813m high between the two provinces of Semnan and Golestan, which is listed among the highest mountains in Iran.

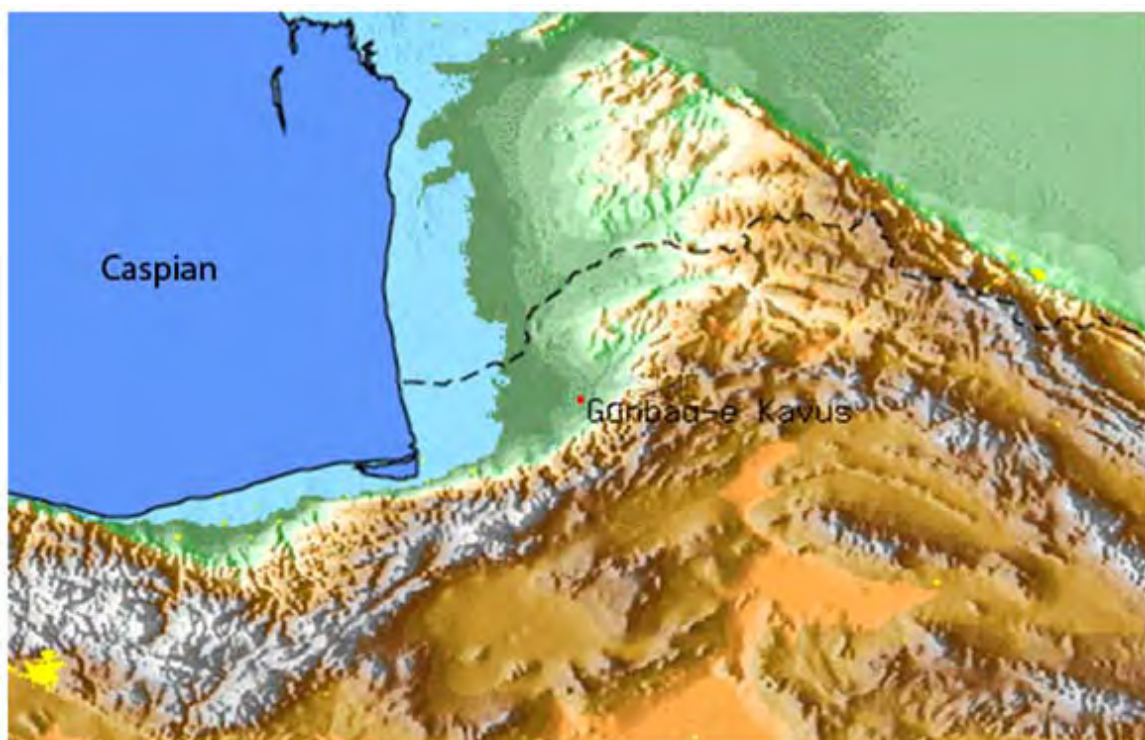


Figure 9 -Gonbad-e Kāvus location in Northeastern of the country

2. a. 1.1. Gonbad-e Kāvus information

Covering an area of 5071 km², Gonbad-e Kāvus is located in the east of Golestan, bordered by the Republic of Turkmenistan to the north, towns of *Ali Abad*, *Aq Qala*, and Gorgan to the west, towns of *Kolale* and *Minudasht* to the east, and towns of *Azad Shahr* and *Ramian* to the south. Topographic morphology of Gonbad-e Kāvus mainly includes mountains and plains. Steppes cover the lands between Gorgan Rud [river] and the border line of Turkmenistan located in *Dashli-Boroon* district. These lands are the most important winter ranges of the area. The climate is temperate and mountainous across the heights of *Azad Shahr* and *Ramian*, but as one draws closer to the borders of Turkmenistan along the north of Gorgan River, the climate changes for plain temperate to semi-arid. The rainfall also decreases northwards and westwards.



Figure 10 - Location of Gonbad-e Kāvus in Golestan Province

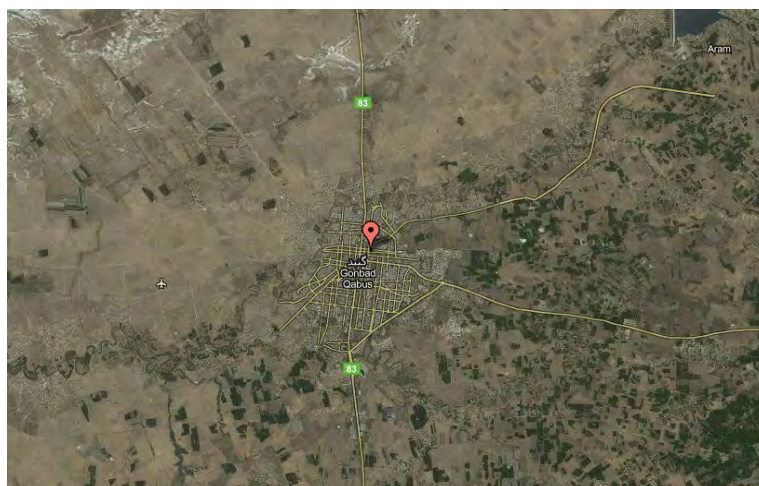


Figure 11 - Location of Gonbad-e Qābus in Gonbad-e Kāvus city

2. a.1.2. Geographical history

The present town of Gonbad-e Kāvus is a rather young one since the well known historic city of *Jorjan*, demolished during the Mongols' invasion, once existed 3 km from the center of the new town, near *Imamzadeh Zeid* [the shrine of Zeid] during the 5th and 6th century AH. In fact until the early years of this century there existed no towns within the site of the destroyed one. Thus, there was an interval of about 5 centuries between the demolition of the old *Jorjan* and the birth of the present-day Gonbad-e Kāvus, which began to emerge somewhere around the 1300s AHS⁸.

The only remaining evidence of the glory of the ancient city of *Jorjan* in today's Gonbad-e Kāvus is the tomb of *Qābus Ibn Voshmgir*, which in fact was the main reason for the new town to be founded. In older days, the town had seen times of being known as *Hyrkania (Hyrkana)*, *Varkāna*, *Jorjan*, and *Gorgan* among other



Figure 12 - Location of the ancient city of *Jorjan*

names. The name *Jorjan* is the key to tracing it back in the history.

In the ancient texts and maps, *Jorjan* County corresponds to the land of Hyrcania, an ancient land in Iran which included the south and southeast of the Caspian region. It also corresponds to the location of the present Golestan Province, including *Bandar Abeskon*, *Astar Abad* (town of Gorgan), and *Dahestan* County (named after the Daheh Tribe) to the north of the district. *Dahestan* County has been self-ruled at times, while at some other times it was a part of Hyrcana (*Jorjan*).

⁸ Yadegar Tarh Consulting Engineers, 2008, Strategic Studies- part 2, Basic studies, p29

The ancient name of *Jorjan* is recorded as *Varkân* or *Varkâna* in the inscription of Darius in Bisotun, and as *Vehrkâna* in *Vandidâd*. The Persian form of *Jorjan* comes from the European form of Hyrcani or Hyrcania or Hyrcana, which was a part of the Median kingdom originally, but was later listed among the possessions of the Achaemenids rulers⁹.



Figure 13 - Hyrcanian in the map of Median period

The district of *Jorjan* or Gorgan as it is commonly among the Iranians, is located to the southeast of the Caspian, and takes in vast plains and valleys irrigated by the Gorgan and the Atrak rivers. Although considered as a suburb governed by Khorassan, Gorgan was in fact an independent province. The change caused by the Mongols' invasion made Gorgan a subordinate of Mazandaran. This district was, among others along the south of the Caspian, destroyed by the invasion of the Mongols, and was thoroughly demolished due to military expeditions of Tamerlane in the last years of the 8th century AH (14th -15th AD)¹⁰. Being located along the route of the Silk Road was one major reason for *Jorjan*'s being commercially significant. In the year 94 AD, the Romans were major buyers of the Chinese silk. Merchants would travel through Merv, *Jorjan*, Ray, and Hamadan to reach Ctesiphon¹¹.

Ibn Hawqal said in the fourth century AH that, "*Gorgan is a pleasant town, with its buildings made of adobe. It has more arid soil than Amol as there is less rain in Gorgan than in Tabaristan. Passing through the town, the Gorgan River divides it*

⁹ Encyclopædia Iranica, Ma'toofi, Assadollah, 1995

¹⁰ Le Strange, Guy, 1905, pp. 401-404

¹¹ Mazaheri, 1993-94, p2

into two parts along the river bank, linked by a bridge from one side to another. Gorgan is on the east bank, and Bekr Abad along the west, with the area of the pair almost matching that of Rayy. The town had plenty of fruit gardens, and they produced silk there.”

Moqaddasi refers to the eastern part of Gorgan as a small province, saying it has had good mosques and good gardens... which yielded inexpensive quality fruits. There are creeks across the town with bridges and arches over them. There is a square in front of the governor’s seat of Gorgan; the city has nine gates, too.... Bekr Abad was once a thriving town with its mosques and buildings at a short distance from the west bank of the river.

“Gorgan was of great importance to the Shiites as the shrine known as Goor-e Sorkh [the red grave], which belonged to one of the sons of Imam Ali was located there”¹², writes Qazvini in the 7th century AH.

Hamdollah Mostofi attributes the reconstruction of Gorgan to the grandson of Malik Shah Seljuk, stating, *“it has ramparts of perimeter of 7000 feet... the residence are Shiites, and are very generous; they were greater in number in the early years of Islam, but drastically dwindled during the rule of the Buyids due to the outbreak of cholera and wars. They were then massacred by the Mongols insomuch as the town was leveled to the ground. Now it is scarcely populated...”* when Tamerlane destroyed Mazandaran and its neighboring cities, he stayed in Gorgan for a while, and had thus a palace made at the bank of the Gorgan river, known as Shasaman, to which [the Iranian historian] *Hafez Abroo* has referred¹³.

The present-day town was established in the year 1305 AHS/ 1926 AD, under the rule of the Pahlavis. Following the orders of Reza Shah the city was planned and built and was named Gonbad-e Kāvus, Kāvus being the name of a mythical Persian King and Qābus from Gonbad-e Qābus, to render homage to *Qābus Ibn Voshmgir*. The original plan of the town was developed by German experts based on the principles of urban design; the town thus enjoys well-designed intersections, and there is no trace of the old narrow streets. The historical town of *Jorjan* or Gorgan is located 3 km of the southwest of the present day Gonbad-e Kāvus.

¹² Godard v.3, 2008, pp 1180-1181

¹³ In the 4th century AH, Gorgan was under the dominance of the Ziyarids who resided in the same province, and their kingdom also included up to the boundaries of Tabaristan and its neighboring areas. The most renowned men of the Ziyarids was Qābūs who died in 403 AH/ 1013 AD, whose tombs is still standing near the ruins of Gorgan, known as Gonbad-e Qābūs.

2. a. 2. Climate

2. a. 2.1. Weather

Geo-climatologically, Iran is divided into four major areas:

1 - A temperate and moist subtropical area, characterized by lush vegetation and moderate to thick forests covering a major part of the Iranian land on the southern coast of the Caspian.

2 - A mountainous and cold area characterized by numerous mountain chains and intermittent valley systems found in the west of Iran mainly among, but not limited to, the Zagros Mountains.

3 - A warm semi-arid to arid area characterized by vast plains and scattered mountain ranges with more fertile plains adjacent to river systems, and containing occasional sand or salt deserts. This area covers the biggest part of the inner Iranian Plateau.

4 - A hot and humid area consisting most of the southern areas of Iran bordering the Persian Gulf along with the Khuzistan Plain.

Based on this categorization, Golestan Province is characterized by the weather and climate of the first group. Thanks to its geographical location and topographical conditions, the climates in this area range from cold mountainous to moderate, semi-arid, and arid climates. Climate-wise, the province is divided into four areas:

1. The mountainous areas
2. The moderate areas
3. The low-lying areas
4. The northern areas

It is to be mentioned that Gonbad-e Kāvus is located in the moderate area of Golestan, which is characterized by rather cold winters and hot and humid summers¹⁴

Table 1 - Climatic divisions in Golestan

Climatic Group	Weather Conditions in the two Critical Season	
	winter	summer
1	Very cold	Semi-warm and Dry Climate
2	Relatively cold	Hot and Humid Climate
3	Dry	Hot and Humid Climate
4	Cold	Hot and Dry Climate

¹⁴ Yadegar Tarh Consulting Engineers, 2008, Strategic Studies- part 2, Basic studies, p8

Gonbad-e Kāvus is located in the east of the basin of the Caspian Sea, and is among the most distant areas influenced by the Caspian climate with the characteristics of maritime air masses. The general altitude of the area where Gonbad-e Kāvus is located is 50 meters, while in some parts it is over 2000 meters where the dominant climate is more of maritime and mountainous systems. Thanks to the dominance of the west winds, the moisture from the sea is distributed across the area, and as Alborz mountain chains along the south of the basin capture it, the moisture cannot move southwards toward the inner plateau of Iran. However, as one moves eastwards along the Caspian shore, the weather turns less moist and more arid. The air masses that influence the area under consideration are as follows:

1. In winter: continental polar air mass; Source region: Siberia. Maritime polar air mass, from the west and northwest; Mediterranean from the west; scarce instances of continental tropical from the south, source region: Arabia to Sahara
2. In summer: continental tropical from the central Iran or southwest; maritime tropical from the Atlantic and the Mediterranean; maritime polar from the Black Sea and the Caspian; continental polar from the North



Figure 14 - location of Gonbad-e kāvus City in Hilliness Map of Iran

2. a. 2.2. Temperature and humidity

Temperature distribution

According to the studies of the comprehensive plan, the average annual temperature at Gonbad-e Kāvus station from 1343 AHS [1964] to 1373 [1994] was 17°C with the coldest months reported to be *Dey* and *Bahman* [January and February] when the temperature goes down to 7.5 and 7.4°C, and the hottest months *Tir* and *Mordad* [June and July] with 26.2 and 26.8°C respectively¹⁵.

Table 2 - The average daily temperatures at Gonbad-e Kāvus station from 1964 to 1994

September	October	November	December	January	February	March	April	May	June	July	August	average
20	15/1	10/2	7/5	7/4	9/6	13/5	18/9	23/6	26/2	26/3	24/8	17

Relative humidity

According to the table below, the highest humidity belongs to March, standing at 80%, and the lowest to June, standing at 49% of relative humidity¹⁶.

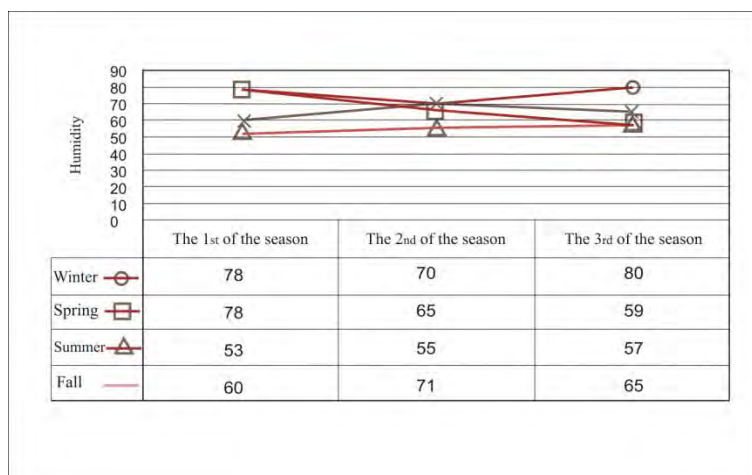


Table 3 - Relative humidity

¹⁵ Yadegar Tarh Consulting Engineers, 2008, Strategic Studies- part 2, Basic studies, p9

¹⁶ Yadegar Tarh Consulting Engineers, 2008, Strategic Studies- part 2, Basic studies, p12

2. a. 2.3. Precipitation

The average annual precipitation in a 30-year period in Gonbad-e Kāvus is reported 511.8mm. Based on the below tables, the highest precipitation rate of the period being studied belongs to the months of *Esfand* and *Farvardin* [March and April] with 73.9mm and 68mm respectively, and the lowest to *Tir* [July] with 16.2mm.

The highest rate of seasonal precipitation belongs to winter. What is to be noted is that Gonbad-e Kāvus has certain rates of rainfall in summer as well, and cannot thus be categorized as an arid area.

The point about the precipitation in Gonbad-e Kāvus is that the town is located at the average latitude of 3, of whose characteristics is that there is a stunt period due to very low temperatures of winter; even if there is rainfall during these periods, it would not help with the growth of plants due to the frost. Thus, the precipitation in warmer months would be of more use for the growths of plants.

Table 4 - Distribution of monthly rainfall at Gonbad-e Kāvus station within the statistical period of 1964-1994 (mm)

September	October	November	December	January	February	March	April	May	June	July	August	average
26	40/2	52/8	50/1	59/4	73/9	68	53/2	29/6	16/2	20/6	20/6	51/6

Table 5 - Distribution of seasonal precipitation within the statistical period of 1964-1994 (mm- %)

Winter		Spring		Summer		Fall	
Percentage	Amount	Percentage	Amount	Percentage	Amount	Percentage	Amount
35/9	183/4	29/5	150/8	11/2	57/4	23/3	119

2. a. 2.4. Wind

The dominant wind in Golestan is the west wind, which blows from the west and in west-east direction all along the year, and can do harm in winters. The other wind is the northwest one, which blows in winter, adding up to the cold¹⁷.

¹⁷ Yadegar Tarh Consulting Engineers, 2008, Strategic Studies- part 2, Basic studies, p9

2. a. 3. Geologic and tectonic activity

Gonbad-e Qābus is built in low-lying lands which are not very high above the sea level. The general altitude in Gonbad-e Kāvus is 45m. The climate and the altitude count for the plentiful precipitation in Gonbad-e Kāvus

2. a. 3.1. Earthquake

Table 3 shows the most important earthquakes across Gorgan plain from 1932 to 1970¹⁸.

Table 6 - Most important earthquakes in Gorgan plain from 1932 to 1970

Date	Second	Minute	Hour	E	N	Magnitude	Depth(Km)
5/20/1932	11	16	19	54	36	5	-
9/8/1935	2	16	1	54/1	36/4	Apr-2	11
1344/04/05	53	5	18	54/8	36	25	13
4/5/1944	20	29	18	54/8	36	Apr-7	12
2/4/1950	-	-	-	-	54/7	36/6	114/5
10/9/1952	20	12	19	54/5	36/7	Apr-7	-
4/18/1953	34	32	6	54/3	37	Apr-5	-
10/8/1957	24	47	11	54/5	36/4	-	-
10/6/1958	0	30	9	54	36/5	May-2	-
7/8/1962	0	2	9	54/8	36/6	Apr-9	-
12/8/1962	-	-	-	54/8	36/6	Apr-8	13
3/9/1963	0	46	21	54/5	36/83	-	-
12/1/1964	53	21	8	54/57	36/8	Apr-5	33
1/26/1969	56	25	2	54/5	36/8	Apr-8	48
4/9/1969	48	4	1	54/5	37	-	45
1/27/1970	52	5	14	54/2	36/8	May-1	35

The most severe earthquake of magnitude 6 struck the northwest of Gonbad-e Qābus on October 7, 2004 at 1:16':23" local time, 21:46':16" GMT. The coordinates of the epicenter of the quake were 37/35⁰N latitude and 54/56⁰E longitude¹⁹.

¹⁸ Yadegar Tarh Consulting Engineers, 2008, Strategic Studies- part 2, Basic studies, p6

¹⁹ The broad band stations of the *International Institute of Earthquake Engineering and Seismology*

The nearest faults to the epicenter of the quake are as follows:

- The Caspian compression fault: it is a seismogenic of over 600km length, with east-west bending direction, sloping southwards, which is located between Alborz mountain chains and coastal plains of Mazandaran. The events of the earthquake of 847 AD of magnitude M_s -6 and that of 1944 of M_s -5.2 are attributed to this fault. The earthquake hit 52km from this fault.
- The north Alborz compression fault: it is seismogenic, bending fault with compressional mechanism, approximate east-west direction, southward slope, and length of over 300km. The M_s -6.8 magnitude earthquake that occurred in 1127 AD in *Chahar Dangeh* (north of *Kia sar*) is attributed to this fault. The quake occurred 85km from this fault.
- Shahvar fault: it is quaternary fault of northeast- southwest direction and northwest slopes; compression mechanism; length of over 60km; the event of at least three earthquakes is attributed to this one: 1890 AD of M_s -7.2 magnitude, 1981 AD of M_s -4.9 magnitude, and 1984 of M_s -4.5 magnitude. The fault is 84km from the quake²⁰.

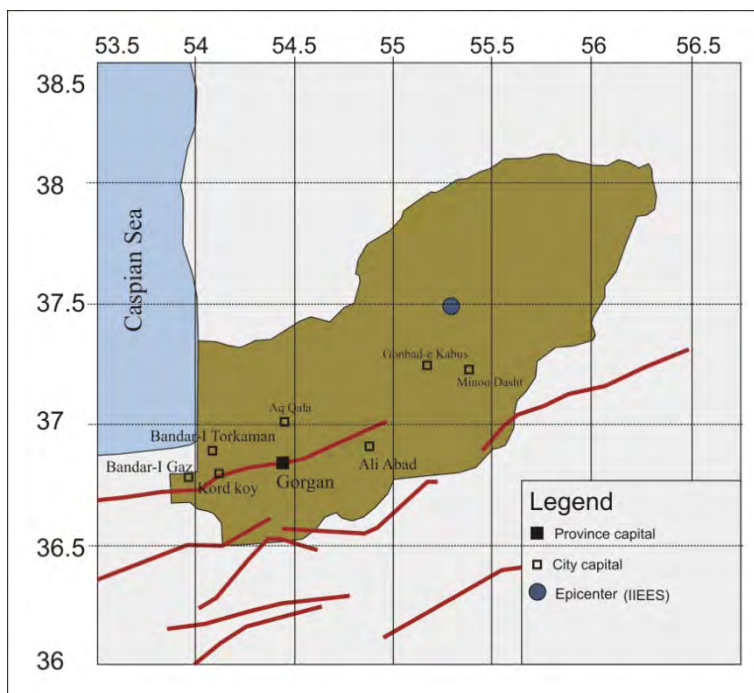
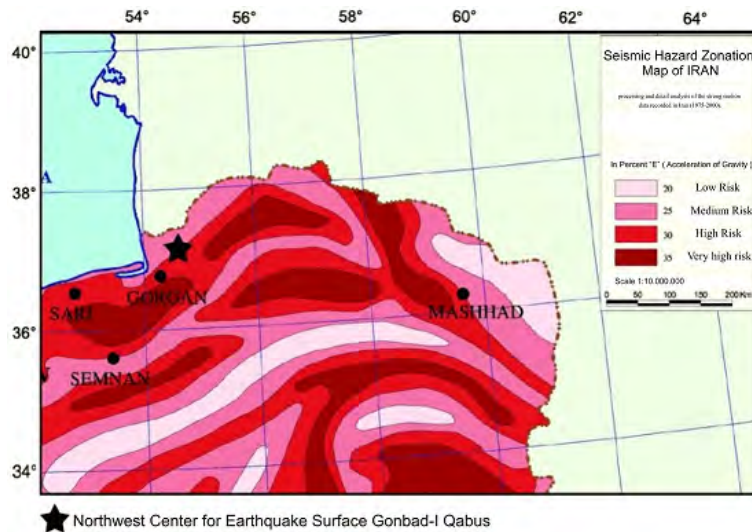


Figure 15 - The epicenter of the quake in the northwest of Gonbad-e Qābūs , October 7, 2004

²⁰ International Institute of Earthquake Engineering and Seismology



Seismicity of the area

Figure 16 - The zoning map of earthquake hazard in northeastern of Iran

No.	Date	Time	Coordinate		Depth(K) (m)	ML	Zone
			E	N			
22	10/8/2004	16:15.6	54.56	37.35	14	6	NW Gunbad-I Qābūs
23	10/8/2004	20.:02:32:48	54.58	37.61	15	4.2	NW Gunbad-I Qābūs
24	10/8/2004	02:51:01:40	54.72	37.59	15	4.3	NW Gunbad-I Qabus
25	10/8/2004	05:19:16:60	54.81	37.68	15	4.1	W Gunbad-I Qābūs

Table 7 - A list of earthquakes in Gonbad-e Qābus, October 2004

surrounding Gonbad-e Qābus

Preliminary seismicity studies prove that the area is earthquake-prone. The existence of numerous Alborz faults, the event of several severe quakes in the course of history, and occurrence of several earthquakes of over magnitude 5 around Gonbad-e Kāvus are the evidences of seismogenic nature of the land in this area. An instance of such seismic activities is the earthquake of the year 874 AD in Gonbad-e Kāvus. It occurred in the late 847, and its aftershocks continued for 3 days. It killed 2000 warriors who had taken refuge in the town. The same earthquake, estimated to have been of magnitude 6, is most probably the cause of destruction of the old towns of Gorgan and Gonbad-e Kāvus. Based on the map of the preliminary relative zoning of the earthquake, this area is located within the zone with relative high risk; based on the 2800 Regulations of Iran the basic acceleration should be calculated at $A=0.3$ in the plan of the structure²¹.

²¹ The report of geotechnical studies of Gunbad-e Qābus tower project, Geo-Azmay Shomal consulting engineers, 2008, pp 5-6

2. a. 3.2. Geology

Belonging to various geological periods, geological formations of Gorgan are located in the north side of Alborz mountain chains. As is obvious in the stratigraphic evidences, the strata of the area includes as old eons as the Precambrian to the modern era sediments, which are listed below:

1. The first geological period (Paleozoic): the oldest formations from this era are red sandstone, limestone, and schist

Sandstones are spotted in strata from old eras in *Mohammad Abad*, *Kabud Val*, and *Ali Abad* in the vicinity of organic formations.

2. The second geological period (Mesozoic): what remains in the area from this period dates back to Jurassic and Cretaceous era, with schist, sandstone, and limestone from the latter and limestone, marlstone, and ironstone.

3. The third geological period: merely with limited marl formations from Mio-Pliocene epoch, in the form of small local anticlinals to the north of Gonbad-e Kāvus

4. The fourth geological period: alluvial terraces (of coarse - and fine-grade conglomerates with silica, marl, sand, and clay cement), loess (material composed of river sands and sediment sands), and alluvial sediments of the new era (following the formation of loess mounds carried by floods from the heights of Alborz, whose origin is the melted snow or the rain, deep valleys have formed in which the carried material sediment according to their density, and form new alluvial sediments.)

There are fine-grained alluvial sediments of small creeks along the east and northeast of Gonbad-e Kāvus up to the border line between Iran and Turkmenistan²².

Geology of the surroundings of Gonbad-e Qābus

The area being studied is located in the structural zone of east Alborz and within the basin of the northern Iran. The majority of this basin is covered with quaternary sediments including young alluviums (young alluvial fans and terraces). Morphological areas of the plain are made of alluvial sediments including sandstones, siltstones, and river sand sediments.

²² Yadegar Tarh Consulting Engineers, 2008, Strategic Studies- p5

Pedology

According to the geotechnical reports concluded from the studies made on the soil samples taken from a depth of 10 meters from the foundations of Gonbad-e Qābus following results are gained:

1. The foundation soil includes fine grain materials; based on lab and field tests, the soil is of man -made down to the depth of 4.5 meters, and beyond that there was the natural soil of the earth. According to the *Unified* classification, the soil comprised of fine grained soil known as CL.
2. The shear strength of soil is a function of the inner friction angle (ϕ) and cohesion (C) of fine-grained soil, as the amounts are $12^{\circ}59'$ and 0.176 kg/cm^2
3. The allowed loads are functions of the depth and the width of the foundation, and the parameters of soil. For example, if $d_f = -1\text{m}$, the minimum load with the width of 1.5m and length of 15m would be 0.844 kg/cm^2 .
4. The calculations regarding the load capacity in subsidence are based on consolidation subsidence+ immediate subsidence as the soil is of the fine-grained type.
5. As there is fine-grained soil underneath the structure, it is strictly recommended that measures are taken within the framework of the project aiming complete prevention of surrounding waters from entering into the foundations²³.

²³ The report of geotechnical studies of Gonbad-e Qābus tower project, Geo-Azmay Shomal consulting engineers, 2008, p3

2. a. 3.3. Water resources

Gonbad-e Kāvus has considerable precipitations; however as surface waters are not sufficiently controlled, farmers dig wells to meet their irrigation needs. Researches show that the level of underground waters is high, ranging from 1 to 7 meters, with northwest lands the richest ones in this regard.

Two following ring rivers surround the town Gonbad-e Kāvus:

1. The Gorgan river (*Gorgan Rud*), which is the largest river across the province, and originates from the mountains of Bojnoord, Golestan forests, and the elevations to the northeast of Gonbad-e Kāvus.
2. *Chehel Chäy* which flows from the elevations to the south of *Minoo Dasht*, and joins the Gorgan River in its westward course in the south of the town.

Gonbad-e Kāvus is located between the two rivers, which function as the natural and, main draining system of the town. Based on the studies made, compared to the areas closer to the pair of rivers, the central parts of the city are the lower parts due to their being located at the bottom line of the curves of the two rivers on the topographic map of the area, while other areas are higher in comparison. In other word, the central part is where the flood waters come together and accumulate.

Surface and flood waters flow through watercourses and gutters along the street sides, and as these courses follow the slope of streets, waters may have to change courses wherever the street has reverse slope or where the slopes shift several times, or may even stop and go stagnant. There are such points in the center of Gonbad-e Kāvus where the waters from rainfalls or floods remain stagnant, and the gutters thus cannot drain them. In such conditions, the floods not only hinder the pedestrian traffic, but also damage the streets and pavements. As the research shows, Gonbad-e Kāvus practically does not have an appropriate drainage network for flood and surface waters. However to tackle and solve the problem which can increasingly worsen due to the development of the town and construction of more barriers to the natural penetration of rainfalls a program for constructing canals and draining surface waters is currently been planned²⁴.

²⁴ Yadegar Tarh Consulting Engineers, 2008, Strategic Studies- p6

Examining the level of underground waters around Gonbad-e Qābus tower

According to the results from the excavations of the year 2008, which were carried out with the aim of conducting geotechnical studies around the tomb tower, the level of underground waters at the point of the borehole was estimated at the depth of 6.3m.



Figure 17 - Two rivers flow along the ring road of Gonbad-e Kāvus

2. a.4. Features of the mausoleums and tomb towers

Burial structures are undoubtedly among the most prominent creations of the Islamic architecture. Thousands of tourists visit the Taj Mahal or the Mamlook rulers' tombs in Cairo; whoever travelling in the north of Africa or Near East can easily spot hundreds of small worship places, which are in fact the burial site of a saint or a hero along the roads, on hilltops, in the cemeteries of towns and villages, or even on farms. Such structures are given a variety of names based on the builders; that is, whether they constructed by the untrained hands of the villagers or are the exquisite outcome of some masters' sweating. The same tradition has been followed across the territory of Iran for centuries, from the great Tomb of Cyrus the Great in Pasargadae to the present day mausoleums and tombs built for the prominent and influential individuals. Tomb towers, of which Gonbad-e Qābus can be considered the origin and the most outstanding, are also regarded as a type of mausoleums. Followings would contain a study of burial traditions, mausoleums and their roles, and finally, the tomb towers of Iran.

2. a. 4.1. Islamic terminology for the mausoleums

As is normally common in the Islamic architecture, the terms applied mark the type and function of the structure. However, the word shrine, or mausoleum, is of stunningly numerous instances of use and meanings both in Persian and Arabic sources of the middle ages.

Structures of such nature may be referred to as *qobbeh* [cupola], *Gonbad* [dome], *torbat* [soil/grave], or, with a closely religious function, *Imamzadeh* [the shrine of the children or descendents of Imams]. Also, they could be named as *Moqam* [the place/residence of a hero/sacred person], or *Mash-had* [the place where someone was martyred]. At times, such names as *Qasr* [the palace] or *Dargah* [the threshold] are on agenda as well. The diversity of such names, of which some are of unknown dates and origins, is the source of the many images of monumental structures in the eyes of Muslims.

Hillenbrand describes the reason for the diversity:

“Clearly the utilitarian purpose of a mausoleum namely, commemoration - by no means exhausted its associations for medieval Muslims. Accordingly, the standard descriptive term torbat, which evokes nothing but the building itself, is frequently supplemented or replaced by words which evoke something more. It may not be too

fanciful to suggest that the word employed may on occasion betray the attitude of the patron or writer to the mausoleum as a genre, and even to its legality. But there are also a number of neutral terms. Qabr, for instance, may be regarded as a tolerably exact equivalent of 'tomb' in that it could mean a building as well as a grave; but apart from this ambiguity it has no extra dimension of meaning. Similarly, marqad, with its Persian equivalent Khabgah ('place of rest' or 'place of sleep'), is, if mildly poetic, essentially bland, while madfan ('place of burial') is positively prosaic and quite devoid of symbolic undertones. The very fact that several such humdrum terms are used interchangeably might raise the suspicion that the role of the mausoleum in Islamic society was not defined with any precision.

Other terms are substantially more revealing. Qubbeh (Persian Gunbad) – is an obvious case of pars pro toto; the mausoleum is referred to by its most distinguishing feature, the dome. Qasr, like its semantic calque in Persian, kakh, opens somewhat wider vistas, for it means 'palace' or 'castle'. Such a term evidently presupposes a substantial piece of architecture. When used in an inscription it also implies a degree of pride on the part of the patron, pride that Islamic orthodoxy would regard as improper: with such a word the mausoleum becomes an appurtenance of the life of princes. It must be admitted that this usage is much rarer than terms which evoke religious associations. These are of course at the opposite extreme, and one may account for their popularity by the welcome opportunity of equivocation which they afforded. By the use of such words, then, the builder of a mausoleum might hope to justify the unjustifiable.²⁵

What comes out of this variety is that many Muslims demonstrated their dissatisfactions with the construction of mausoleums. Among all other types of Islamic structures, this one would receive the least respect. Even it is possible that over a lengthy period, a wave of fundamentalist emotions has destroyed some of these structures, as happened in the lands of Saudi Arabia in the 13th century. Meanwhile, those Muslims who were still interested in building shrines for themselves would try to hide this disagreeable egotism under a variety of acceptable tints.

²⁵ Hillenbrand, 1998, p317

2. a. 4.2. Funerary practices in Iran

Zoroastrians considered the corpses of the dead as filthy, and the body as impure and fetid. They even seriously refused to bury the corpses under the ground until rather recently, believing that the corpse would contaminate the soil with its strongly negative effects. According to the Zoroastrian tradition, they would leave the body of the dead on top of an elevation, in a tower or chamber known as *Dakhmeh* [catacomb]²⁶ to feed them to wild birds. The tradition would include keeping of the corpse in a room for three days and nights, and then taking it to the catacomb. After the flesh was thoroughly fed to birds, they would collect the bones, and keep them in special earthenware containers.



Figure 18 - Ostodan [ossuary] in Yazd



Figure 19 - Ostodan [ossuary] in Siraf



Figure 21 - *Dakhmeh* [catacombs] in Naqsh-e Rostam



Figure 20 - *Dakhmeh* [catacombs] in Eshaqvand

After the advents of Islam in Iran, the bodies of the dead were ordered by the Prophet to be buried free of ceremonies. Construction of any structures on top of the graves was also prohibited, and the grave was ordered to be completely level. After he passed away, the orders of the Prophet concerning the burial without ceremonies and without marking the grave were neglected. His own body was buried in one of the rooms of his house (the Prophet's mosque), which marked the beginning of the tradition of

²⁶ It is a room on top of the hill or mountain

burying bodies in mosques. After less than one generation, the Prophet's grave was also marked, and thus the course which ended in the construction of a magnificent tomb site for him inside the mosque started.

Aside from the shade, another paradisiacal quality ascribed to the tomb structure was apparently its ascension toward the heavens. No doubt this ascension was seen as an expression of flight from the earthly to the heavenly or from man to God. The best structural manifestation of this idea can be seen in the Gonbad-e Qābus which reaches the amazing height of sixty-one meters, while its diameter is only seventeen meters. Although most tomb structures have a relatively modest height when compared to the Gonbad-e Qābus, we can clearly see the importance of a tomb's vertical impetus in our contemporary sources²⁷.

Variant Names	Qubbat al-Sulaybiya, Qubbat al-Sulaibiya, Qubbat al Sulaybiya, Qubbat al Sulaibiya	
Location	Samarra, Iraq	
Title Detail	Section and plan. From Herzfeld	
Date	862	
Style/Period	Abbasid	
Century	9 th	
Building Type	funerary	
Building Usage	Mausoleum	

Figure 22- Section and Plan of Qubbat al Sulaybiya

Thus, the initial simplicity of gravesites at the beginning of the history of Islam started to be neglected. In the first two centuries of the Islamic history, Muslims were still buried in ordinary graves, but from the 3rd century on, the tradition witnessed minor breaches as the Abbasid caliphs were buried in graves marked by stone inscriptions installed vertically at the head of the grave, facing Mecca, as did the dead body. Gradually, this changed into a rigidly rooted Islamic tradition.

Thus, the early Islamic gravesites were erected at the graves of the close companions of the Prophet, with the earliest Islamic mausoleum recorded generally agreed to be the Qubbat al-Sulaibiya at Samarra, datable to the mid-ninth century, on which Hillenbrand agrees as well²⁸.

²⁷ Daneshvari, 1986, p 14

²⁸ Hillenbrand, 1998, p315

2. a. 4.3. Role of the mausoleum in the Islamic communities

Mausoleums play a significant role in the Islamic communities, which is not limited to a mere memorial or burial site. This is where the title “folk religion” comes from.

The tendency toward the endowment of religious shrines and mausoleums is an obvious evidence of the ambiance of holiness in religious shrines within the boundaries of Islamic territories, however opposing the direct decrees of the Prophet or those words narrated from him.

The notion of building a mausoleum in the middle centuries of the Islamic history is not different from the idea of burial architecture in other cultures. Basically, the construction of a mausoleum highlights the homage paid to the memory of a certain individual. Considering the number and variety of mausoleums, it seems that no efforts have been made in order to limit the construction of mausoleums in various social levels. It could be inferred that mausoleums have initially been given a non-religious function, and were considered to be commemorative structures known as tomb towers.

The symbolism of the tomb structure went beyond its sacred aspects; it also encompassed a broad spectrum of socio-political considerations. On the most basic level, the building of a funerary structure reflected the rank and social status of its patron. The greater the importance of the patron, the more prestigious was the tomb tower. The impressive height of the Gonbad-e Qābus clearly matched the political rank of its patron and occupant, *Qābus Ibn Woshmgir*. Bunākati's description of the tomb tower of Ghāzān Khān (c. 1295-1305) relates the role of the tower's size with the expression of power and prestige:

" the people are in wonder (looking) at the tomb of the ruler of the land, (thinking) whether it is a ladder (reaching) to the heaven.²⁹"

زان بنای قبه سلطان ملک در حیرتند
کین بود آیا مگر بام فلک را نردبان^{۳۰}

The point is most expressly stated by *Mul(.ammad ibn Al).mad ibn Abi Bakr al Maqdisi* (b. 334/946) in his book, *AIJ_san alTaqasfmfi Ma'rafat al-Aqalfm*. He wrote:

"Behold the Dailamite kings (i.e. The Buyids) at Rayy, who build over their tombs lofty domes lqibah 'Aliyya), which they construct with all their zeal and erect to their utmost ability, lest they decay while those who are under kings build smaller domes. "

²⁹ Daneshvari, 1986. P 69

³⁰ Bunakati, 1969, p. 466.

Unlike many other tomb towers in the north of Iran whose builders are not known, or those seriously damaged, Gonbad-e Qābus is still standing without being tinted by religious hues, and not only has preserved the name of its founder but also has gained and kept great significance among the locals, and has played a crucial role in the establishment and development of the present day town of Gonbad-e Kāvus and its communication network.

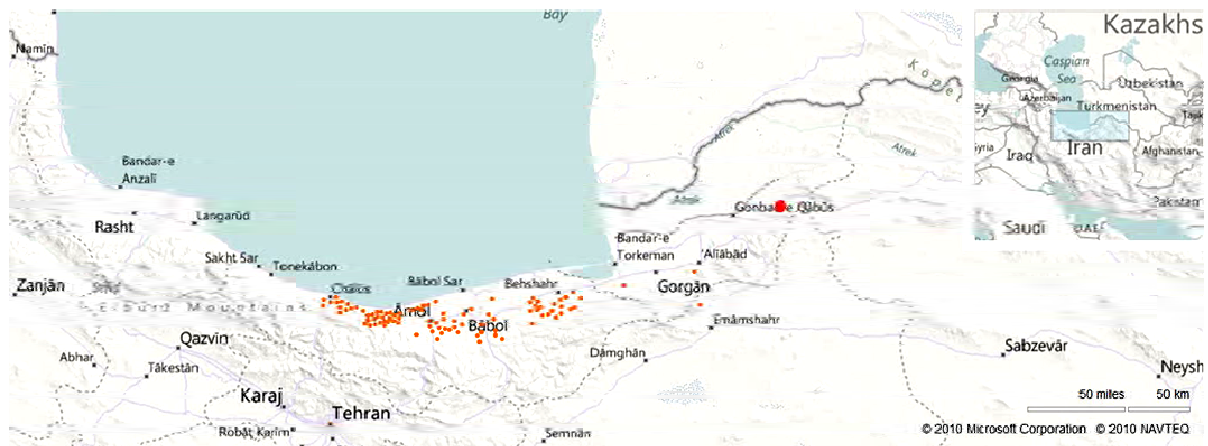


Figure 23 - Tomb Towers scattered in northeastern of country

2. a. 4.4. Mausoleums and tomb towers in Iran

Most scholars believe that among all types of buildings, mosques are of greatest popularity with the Iranians. However, mausoleums stand next to them in the line of importance as they are, like mosques and fire temples, associated with religious rituals of Muslim and non-Muslim Iranians. It should not be neglected though that mausoleums are of older history than mosques.

Mausoleums seem to function as a link to the deceased and to the luminaries of past. Thus, relying on the Iranians' patterns of thought, they can also establish a strong connection between man and God, and show people to the right path of fulfilling their spiritual and religious needs. There are several mausoleums that have stepped beyond their expected function to rival mosques, and to establish close connections with them as well.

As mentioned earlier, such burial sites are referred to by using a variety of names such as catacombs, tombs, burial places [*madfan*], mausoleums, graves, *Mash-hads*, etc. Their *raison d'être* is the will and authority of rulers coupled with the practice of traditions and beliefs. They have gone so far in their expressions that nothing can uproot them but religious schools and ideas.

In order to gain an insight to the origins of mausoleum in Iran examination of the pre-Islamic era is of great importance.

Unearthing of traces of some simple two-part graves, one-part graves plus the corpse, cellar graves, and brick graves (for military commanders) in *Sialk* in Kashan, *Tappe Hissar* in Damghan, *Turang Tappe* in Gorgan, *Shahr-e Sookhte* [Burnt City] in Sistan, *Godin Tappe*, etc. shows the affection and respect of the Iranians for their ancestors as well as the grounds for the formation and development of mausoleums before the Islamic period. Nevertheless, the opinions of other scholars should not be ignored where they say that the construction of tombs in Iran began with the creation of the Ziggurats in Elam (the position of Inshushinak, the great deity of Susa on top, and on the first level of Chogha Zanbil further confirms this idea). Will Durant writes in this regard about the ziggurat of Babylon that, "*passengers who reached Babylon would observe on top of a mountain the structure of a terraced tower, an immense and lofty ziggurat, rising in seven stages of gleaming enamel to a height of 650 feet...there was a tomb on top of the tower with a large, golden bed inside on which a woman waited... every night. This tower was known as the Tower of Babel or Babylon.*"

Thus, it can be inferred that ziggurats were of two functions: places for worship and tombs. In his book, *Tombs in the Backdrops of the Iranian Culture*, Mr. Gharavi writes, "*if we consider the square-shaped structures as the prototype of tombs,*

ziggurats are the simplified forms of it, and the toothed domes are signs or symbols, or simplified forms of the same tombs; this is how the ancient tradition of building tomb structures has survived and continued.”

Through to the next following centuries, what surfaces as a type of tomb is the Median catacombs. In this time, as they believed in Zoroastrianism, the Medians would leave the body of the dead in rock catacombs so that they were fed to animals; all that remained was the cleaned bones. Considering this, the mountain catacombs were a place for our ancestors to rest in peace.

Following the Medians' style of building tombs, the Achaemenids' tombs were made of rocks after the Medes kingdom was attached to that of the Achaemenids', and the latter was expanded northwards and thus moved away from the civilizations of Elam and the south of Mesopotamia. This trend played an important role in the development of rock tombs among the Achaemenids examples of which still exist in the royal tombs of the Persepolis and *Naqsh-e Rostam* as evident instances of methods of building tombs and mausoleums in pre-Islamic Iran. Nevertheless, the mausoleum of Cyrus the Great is an exception to this stereotype as for its form, even though many scholars see it as the last example of ziggurat tombs.

The Parthians' being unceremonious and their distance from the homelands of ancient civilizations could be credited for the absence of the construction or development of mausoleums in a five and a half-century course of the rule of the Seleucids and Arsacids (Parthians). Again, traces of the Achaemenid art are evident in some of the Parthian tombs, and Hellenistic art has affected some others, but tombs did not develop much under the Parthians basically because unlike the Medians and the Achaemenids, they either cremated or interred the dead bodies. However, a few ossuaries [known in Persian as *Ostudan*: the place to keep bones] are discovered dating back to the Parthian era.

Practicing their forebears' schemes, the Sassanids, too, dedicated further efforts to the construction of tombs, and used towers made of stone and mortar as mausoleums. Known as ossuary, or *Ostudan* in Persian, these structures are probably constructed under the influences of the Zoroastrians, and have developed into the shape they had under the Sassanids through the course of centuries.

However even during these periods erecting a kind of awnings over the grave of great commanders killed in border battles with the justification that the ground above the graves were exposed to the winds and rains was allowed. Graves of the Prophet's companions were also marked and covered by certain types of wooden indexes and canvas or other types of cloth. This is how the shaded graves came to existence.

Thus, in the early days of the Islamic era, absence of a certain model for tombs on the one hand, and practice of the fundamental Islamic beliefs on the other worked as a hindrance to the development of tombs. However, what remained of the earlier times turned into the model for creation and advance of tombs and mausoleums which particularly started to thrive from the 4th century AH on, the time which marks the birth of structures that can be considered as the origin of tombs and mausoleums.

Relying on the fact that the Zoroastrianism banned the burial of the dead, Hillenbrand recognizes other lands than Iran as the birthplace of the Iranian tombs, believing that they are in fact rooted in burial places of pre-Islamic Syria and the Roman-style tombs made there, such as *Qubbat al-Sakhr* [the dome of the rock]. He also attributes the formation of many tombs and mausoleums to the traditions of Turk tribes, and refers as an example to the towers of *Kharaghan* in Iran which stand isolated in the middle of a vast desert.



Figure 24 - the Towers of Kharaghan

As professor *Gharavi* states³¹, the particular methods of burial and the catacomb form of graves has been of significant influence on the architecture of the Iranian tombs: “*what the scholar in question relies on to justify the idea of tomb building being imported to Iran is probably rooted in his presumption that there has been no work of tomb building during the reigns of the Parthians and the Sassanids, and tombs had been replaced by Towers of Silence [Borj-e Khamushan], catacombs [dakhme], and ossuaries [Ostudans], while the fact is catacombs and ossuaries gradually evolved into tombs. There are even evidences that until last century, they would bury the dead in the catacombs adjacent to the mausoleums, and there are the names of many of such ossuaries built on top of such towers in Iran. Also, many of mausoleums and*

³¹ Gharavi, Hassan, 1996, "Aramgah dar Gostareh Farhang-e Irani"

mosques are built based on the plan of Sassanids fire temples and simple char Taqis, or a number of such fire temples have been converted to mosques and mausoleums.”

Gharavi considers the gravesite of the Prophet as the first Islamic mausoleum, and marks the burial of Haroon in Khorassan (which was later changed into the shrine of Imam Reza from 808 to 817 AD) as the beginning of the Iranian tradition of mausoleum building. He also considers the existence of certain structures as the evidences of the influence of pre-Islamic architecture on the practice of mausoleum building during the later centuries. He sees the mausoleum of Amir Ismail of the Samanids as influenced by Sassanid *char Taqi* (four domed) plan, and Gonbad-e Qābus as influenced by the pre-Islamic architecture, backing the idea based on the *Yazdegerdi* date together with the Islamic dates on the tower. However, he also sees similarities between the architecture of the tower and the form of tents of Turkmen nomadic tribes. Also, to him, Gonbad-e Ali in *Abarqu* calls to mind the Zoroastrian catacombs as it is located at a precipice.

Thus, it would be save to consider the Samanids reign as one with creditable architecture since, regardless of construction of shrines of imams and their predecessors, the birth of tomb structures dates back to this period. The magnificence and stateliness of the structures from this period highlights the fact that construction of tomb structures was on the right track by then, and continued to grow based on the pre-Islamic architecture and embracing new concepts.

The trend continues through the Seljuks era after passing through this architecturally important and influential transitional period. Under the rule of the Seljuks, the Sunni Muslims brought further diversity into the tomb structures and forms, and began to use such structures as tomb-towers, which explicitly stated their interest in elevated structures.

From the year 999 to 1173 AD, most tomb towers were built as the graves of emirs, warriors, and military commanders. Following the tradition of the Seljuk Turks, the graves of Shiite Imams are not elevated all through these years.

This period witnesses a general growth, and the architecture of tombs reaches a summit so high that the Khwarezmids had no more than little to add to its perfection.

After they invaded Bukhara, the Mongols demolished as many buildings as they could, but the only structures that survived their plunder were the tombs and mausoleums.

Right after the Mongols' invasion it seemed as if art and civilization would be obliterated. However, even despite the fact that the Mongols would bury their dead in

good distances from where they lived, and did not erect mausoleums for them, after Ghazan Khan's conversion to Islam, the Mongol *Ilkhans* were encouraged by their Iranian ministers to build mausoleums for themselves as the Iranian kings did.

*Iqbal*³² categorizes the *Ilkhans'* works into the categories of villages, towns, religious structures, and shrines, stating, “*some of the structures constructed under the rule of the Ilkhans have the looks of tribal yurts; the most outstanding one of this sort is the fine one whose major parts are still standing in Maraghe, known as the tomb of Hulagu's daughter.*”

The theory with the widest circulation considers the tents of Central Asian nomads as an architectural and (even by some of its proponents) an iconographic source for the Islamic tomb tower. Ernst Diez believes that the conically roofed tower was a translation into permanent materials of the royal tent of Central Asian nomads. Similar ideas are expressed by Arthur Upham Pope/³ Eric Schroeder S.P. Tolstov Katharina Otto-Darn and Emil Esin.³³



Figure 25 - A Mongolian yurt



Figure 26 - Yurts near the Gonbad-e Qābus (1920)

Although mogul *Ilkhans* did not add much to the Seljuks' achievements regarding the construction of tomb towers, nevertheless they contributed to the square-shaped structures and their derivatives in such a way that the new style of *Ilkhanate* tomb structures came into existence with their towering domes and plaster stalactite cornices works which gave them a fresh tint. Ghazan Khan was the first Muslim *Ilkhan* in Iran to build himself a mausoleum and to found *Shanb-e Ghazan Khan* [dome of Ghazan Khan].

³² Ashtiani, 2001, p 153

³³ Daneshvari, 1986, p 5

In the 15th century AD, corpulent octagonal mausoleum structures of polyhedral roofs and trisected façade became the dominant style of Shiite mausoleums in Qom, whose example is the three tombs of the *Green Garden* [*Baq-e Sabz*], which was copied across the country during the later centuries.

These types of tombs which, compare to the Seljuks towers, were wider in their floor level became simplified and quite common in Mazandaran during 15th century AD. Hereafter the tomb towers declined extensively during the Timurids era insomuch as they never won back their original popularity which was ultimately lost to pineapple domes. The Examples of these types of structures in this period which faded away in their turn are the shrine of *Imamzadeh* [Imam's son] *Saleh* in Sari, *Shams-e Al-e Rasul in Amol*, etc.

With the Safavids rising to power, which entailed the growth and dominance of the Shiite faith, mausoleums were exclusively built for religious figures, with ordinary, non-religious tombs and mausoleums being replaced by the religious ones. Mostly being vast, the mausoleums usually included courtyards and several satellite buildings; this is what particularly marks the Safavids mausoleums with *Sheikh Safi al-din Khanegah* and Shrine Ensemble in Ardabil as an example.

Safavids rulers followed the traditions of burial architecture, but never made good heirs to it. In fact, none of the Safavid kings are buried in a mausoleum, for they preferred to be interred in the vicinity of the graves of Imams and their predecessors owing to their sophistic beliefs. Amongst the following rulers after the Safavids, the only exception to this was Nader Shah Afshar from Afsharids dynasty whose mausoleum is located in *Kalat-e Naderi*.

The Safavids tradition of building mausoleums was later followed in other countries such as Ottoman Iraq and India realized in the former in cities like *Najaf*, *Karbala*, and *Samara*. Nevertheless, the tradition fell into oblivion inside Iran during the rule of Qajars, and the contemporary mausoleums are in part influenced by the Safavids tradition.

Qajars commenced some activities with regards to the restoration, reconstruction, and development of some of these tombs and mausoleums, and the Pahlavis continued to do so under an organization known as the National Organization for the Conservation and Preservation of Historic Monuments. Some instances of the construction of new mausoleums were also experienced during this period. In fact one could states that the practice of building religious tombs and mausoleums has been revived in recent decades by the construction of new ones following the Safavids building traditions. The revitalization of the practice is rooted in various notions such as religious beliefs, traditions, rituals, etc, integrated with political, social, and cultural elements.

Considering the above-mentioned facts, shrines and mausoleums of Iran can be categorized as follows:

1. Shrines and tombs believed to belong to the predecessors and close relatives of Shiite Imams, such as *Ma'soumeh's* [Imam Reza's sister] shrine in Qom, *Shah-e Cheraq* [brother of Imam Reza] in Shiraz, *Shazde Hussein* in Qazvin, shrine of Sultan Ali the son of *Imam Muhammad Baqer* in Ardehal, Kashan, and some other shrines of Imams' sons or daughters buried across the country. **Figure 27 - Ma'soumeh's shrine in Qom**

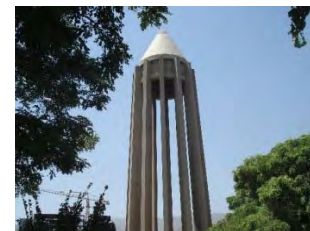


2. Tombs and mausoleums of religious figures, scholars and close companions of Shiite Imams, such as *Khajeh Rabi'* and *Khajeh Aba Salt* in Mashhad, *Sheikh Saduq (Ibn Babawaih)* in Ray, *Hafez* and *Sa'di* in Shiraz, and *Shah Ne'matullah Vali* in Mahan, Kerman **Figure 28 - Tomb of Hafez in Shiraz**



3. Tombs of mystics, scholars and scientists, and literary figures and poets, such as *Sheikh Attar* and *Khayam* near Neishabur and *Ibn-e Sina* in Hamedan.

Figure 29 - tomb of Ebn-e Sina in Hamedan



4. Mausoleums and tombs of rulers, emirs, kings, and commanders, such as Gonbad-e Qābus (tomb of *Qābus Ibn Voshmgir*, the Ziyarid ruler) in Gonbad-e Kāvus, Golestan, Seljuk *Toqrol* in Ray, and Soltanieh dome near Zanjan, and *Sultan Muhammad Khodabande's* (Uljeito, the Mongol ruler) tomb in its close vicinity in a place known as *Torbat khaneh*; among the oldest mausoleums whose date is known is that of Amir Ismail Samani's in Bukhara.

Figure 30 - Tomb of Qābus Ibn-e Voshmgir in Gonbad-e Kāvus



5. Some of the sites now considered as sacred have thus changed due to the presence of certain sacred entities in them, such as *Qadam Gah* near Neishabur.

Figure 31 - Qadam Gah near Neishabur



2. a. 4.5. Structure of the Iranian tomb towers

Have long been in the center of the attention from various human communities, architecture is one the important functions of art and civilization, and man has constantly attempted to develop and expand it. It is not only a functional and applied discipline, but also a showcase of various fields of art, as well as the wealth and magnificence of the owners of its products. Tomb and burial architecture of Iran is of considerable significance among other branches, with the lion's share of the remaining works of the antiquity.

A wide range of such structures were constructed in Iran over the graves of the renowned, the elite, etc after the 10th century AD. As George Michael states in his book, “*the function of a mausoleum structure is to preserve a grave and to secure its historical eternity*³⁴”. If a mausoleum is not built by the owner or any of his/her family members, it would be an evidence of the owner’s fame. Although a grave is horizontal structure, the mausoleum as a whole is always a centered plan around a vertical axis.”

For more careful study of the tomb towers across Iran, they can be categorized based on historical, artistic, religious, and architectural indicators. Researchers and scholars have classified them based on dates, forms, and architecture; for example, Wilber³⁵ categorizes them into two groups of domes square-shaped mausoleums and tower mausoleums (domed, polyhedral, and conical roof).

In his book, Hillenbrand³⁶, too, presents his own classification of tomb towers and domed, square-shaped structures. Mahdi Oqabi³⁷ takes a more general aspect to sort them as religious and non-religious structures.

Based on various classifications made, this report would study tomb towers in the following categories:

- 1. Tombs with circular plans (or transformed circular plan)**
- 2. Tombs with polyhedral plans (four, six, eight, etc sides)**

³⁴ Michael, 1932, Architecture of the Islamic World

³⁵ Donaldn, The architecture of Islamic Iran, 1969

³⁶ Hillenbrand, *Islamic Art and Architecture*, 1998

³⁷ Oqabi, Burial structures, *The Encyclopedia of Historical Buildings of Iran in the Islamic Period*, 1997

1. Tombs with circular plans (or transformed circular plan)

Beside the plan (circular, star-shaped) and the shape of their roofs (domed vs. conical) the most important features of the tomb towers are considered to be the heights, and as the height increases, the inner space get more and more smaller. The ratio between the widths to the height in this group of buildings usually ranges from 1:3.5 to 1:5.5³⁸. In general tomb towers are basically identified to cylindrical with conical roof, as seen in the Radkan tower in north of Iran.

Radkan tomb towers of circular plan gradually began to fade out from the 11th century AD on, when flanges began to appear on the evenness of the stems, and circular plans left the stage for the star-shaped ones.

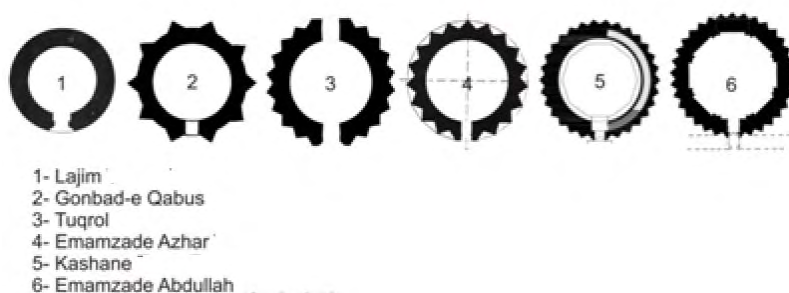
The earliest breach to the familiar circular plans is spotted in Gonbad-e Qābus; even though the flanges are meant to add to the rigidity and resistance of the structure, they are later given a decorative function.

The diameter of the towers is generally augmented, which make inevitable the decrease of the height, marking a fundamental change in the ratio of width/height.

The flanges seem to be impossible to go further than certain numbers. The maximum number ever seen belongs to the *Imamzadeh Abdullah* with 44 flanges, as compared to 10 of Gonbad-e Qābus. With its 12 flanges, *Mehmandust* tower in Damqan seems to be closely following the model of Gonbad-e Qābus. Bastam, Varamin, and Damavand towers stand in the middle of the range with their 30, 32, and 33 flanges respectively.

In *Ali Abad* tower of Kashmar, which apparently dates back to the 14th century AD, there are some small semi-circular columns placed alternatively with star-shaped flanges. In the Eastern Radkan tower dating back to 1281 AD there are 36 semi-columns along the outer façade built on its 12-sided base. Both of these towers with their star-shaped plans are quite different from the style of Gonbad-e Qābus, which seems to be simple and unadorned with decorations.

Figure 32 - Some Tombs with circular plans (or transformed circular plan)



³⁸ Hillenbrand, 1998, p344

2. Tombs with polyhedral plans (four, six, eight, etc sides)

As said the earliest mausoleums were all square-shaped, and the circular-shaped plans came to existence after them, which were in turn replaced by polyhedral plans, of which the most common is octagonal. Some believe that one integral part of such structures are the common Sassanids fire temples or *char Taqi*, (four- domed) which thanks to their widespread presence across Iran, were used as a clearly set stereotype for construction of mausoleums after Islam. In this type, the many functions and structures around the mausoleum has been of greater importance than the height of the tower itself, and this counts for the shorter height of structures of this class. Examples of polyhedral tombs and mausoleums are that of Shah Ismail Samani in Bukhara from 907 AD, which has a square-shaped plan with four *pilaks* [round respond tangent to the wall] in the outer corners of the structure³⁹, and Ali dome in *Abarqu* with its hexagonal plan which dates to 1056 AD.

Thus, the Gonbad-e Qābus is categorized in the first class with its star-shaped plan (transformed circle) and 10 flanges, and the diameter/height ratio of 1:3/5 what follows is the detailed study of its features plus a comparison between this tower and the similar ones.



- 1-Gonbad-e Qaffarie - Maraqa
- 2-Gonbad-e Alaviyan - Hamedan
- 3-Gonbad-e Ali - Abarqo
- 4-Gonbad-e Jabalie - Kerman
- 5-Gonbad-e Soltanie - Zanjan

Figure 32 - Some Tombs with polyhedral plans (four, six, eight, etc sides)

³⁹ Pirnia, 1997, p168

2. a. 5. Description of the architecture of Gonbad-e Qābus

Gonbad-e *Qābus Ibn Voshmgir* is located in Golestan Province (northeast of Iran), Gonbad-e Kāvus town, and to the north of the town and the northwest corner of the National Park, on top of a mound of 10 meters height. Also known as *Mil-e Qābus*, *Borj-e Qābus* (Tower of Qābus), and *Maghbare-e Qābus* (the mausoleum of Qābus), it is located 3km from the southwest of the ruins of the ancient town of *Jorjan* or Gorgan. One of the most magnificent structures of the early Islamic centuries, this structure is still standing out amongst the chaos of urban life and constructions, catching the eyes of beholders even from kilometer distances



Figure 33 - . Gonbad-e Qābus, View from Asb Davani St.



Figure 34 - . Gonbad-e Qābus, View from Azad Shahr area



Figure 35 - Location of Tomb Tower in Gonbad-e Kāvus town

2. a. 5.1. Design

The form of tomb towers in Iran is usually a cylindrical body and a conical roof. The plan is also a circle or transformed circle, particularly in the north of Iran, which is evident in *Imamzadeh Abdullah of Lajim*, the two towers of *Damqan (Chihil Dukhtaran and Pir-e Alamdar)*, and Radkan tower.

Dated 1006 AD, the plan of Gonbad-e Qābus is one circle with ten flanges⁴⁰, each with a rectangular shape, connected to the outer circumference of the circular plan to form a 10-flang star whose lines end short of the roof.

Based on the latest photogrammetry data from the structure, at five meters height the apexes of the sides are five meters from one another, even though the diameter of the circle is bigger than that of the higher parts.

Hillenbrand writes about the plan of Gonbad-e Qābus:

*“Its circular plan is broken by ten huge, evenly spaced, triangular flanges which break free from the plinth and streak upwards to vanish into the corbelled cornice supporting the conical roof.”*⁴¹

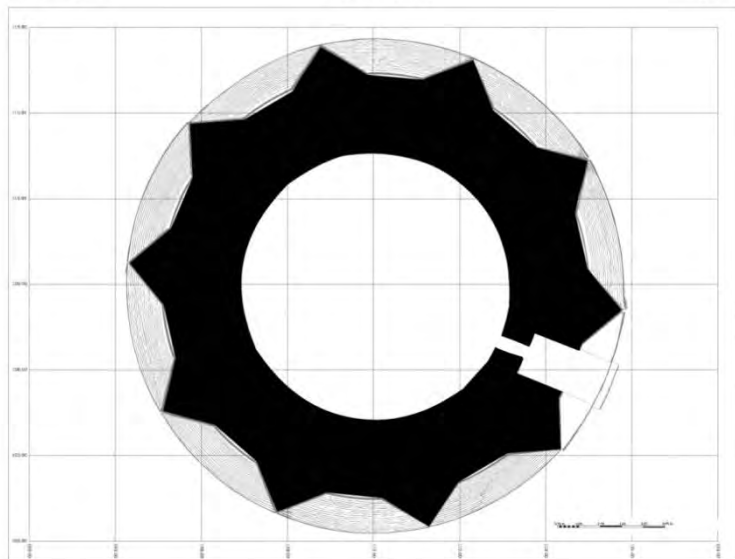


Figure 36 - Floor Plan of Gonbad-e Qābus

⁴⁰ Flange [*Tark*] is used to refer to each section of the dome between each pair of its structural crotches.

⁴¹ Hillenbrand, 1998, p346

2. a. 5.2. Sizes and scales

Height of the tower is recorded as over 53 in various sources; however, the latest photogrammetry surveys put it at 53m, of which 35 meters belongs to the stem, and 18 meters to the conical roof.

As mentioned earlier, the structure has a transformed circular plan, with the radius of the dome measuring 4.8m. The inner circumference is 30.144m, and the outer, 60.288. The wall of the dome is 4.8m thick, which is half of the diameter. Height of the dome from the ground is 62.8m including the 10-meter height of the mound.

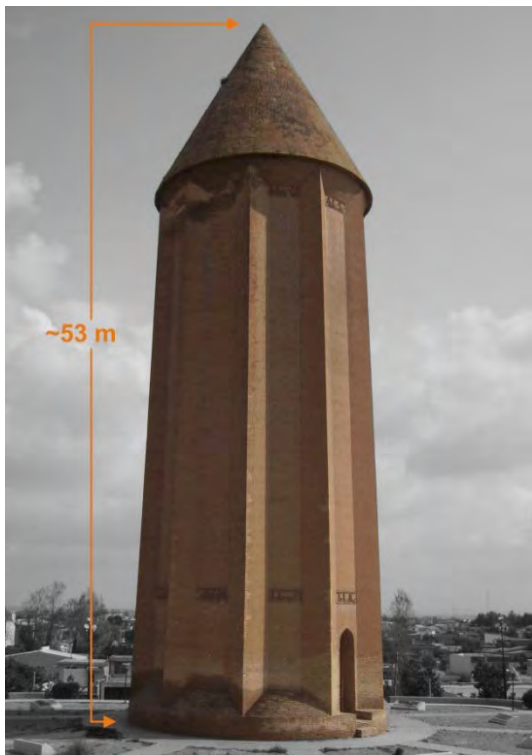


Figure 37 - Gonbad-e Qābus with the Height of about 53

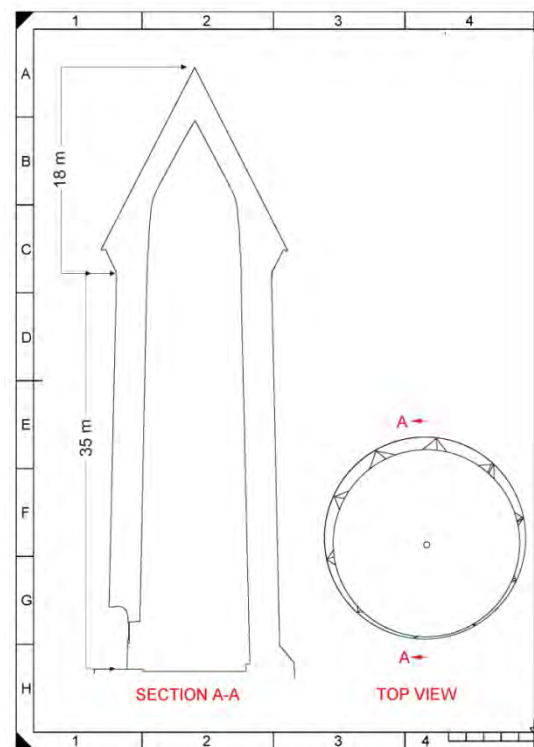


Figure 38 - Top view and Vertical Section

Dimensions and the area of the mound (meters)

The area covered by the mound on which the tower is built measures 10362.347m^2 as is evident in the topographic map made in 2008, of which 4800m^2 is the flat surface around the tower. The mound measures 105m north-south, and 120m east-west, standing 10 meters higher than the surrounding lands.

Thus the total area of Gonbad-e Qābus (the park and the tomb) comes to 30424.33m^2 , which would be expanded after the liberation of east side structures.



Figure 40 - Dimensions and the area of mound (meters)

2. a. 5.3. Form

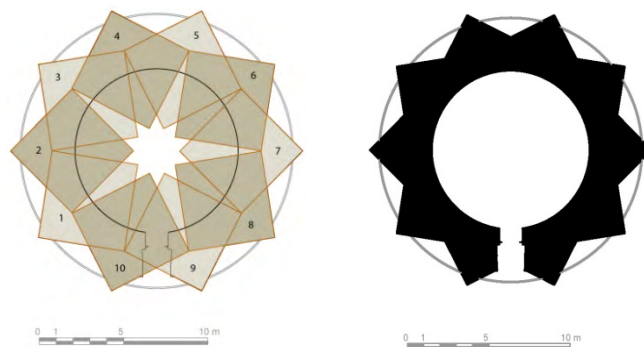
Besides what was mentioned regarding the measurements and features of the structure, there are few more points on the principles and geometric order of Gonbad-e Qābus:

It is inferred from the books of the historians that plans and blueprints were prepared prior to the construction of the building. There were scripts and plans including the details of the structure and progress of the construction work of which not much is left. However, there are still traces of such blueprints in old books.

Ibn Khaldun, the distinguished north African polymath says that one who wanted to practice architecture had to know well about geometry, and about conic sections used in applied arts such as carpentry and architecture, so that they could design perfect shapes in such a way that after the shape was made into a structure, it looked exactly like what the designer had in mind. As one can gather from *Ibn Khaldun*'s words, the careful tests conducted on the structures during these centuries actually counts for the geometric proportions of plans and the cross section and vertical sections of the buildings.

Gonbad-e Qābus, too, enjoys similar proportions, whose details and geometric proportions are as follows:

1. In the plan of the structure, the size of the stem of the tower as the thickest part and the side sums up to the height of an isosceles triangle made on the side of a regular pentagon circumscribing the inner circle with the diameter of 9.7m.
2. As the sides have straight angles, the ten straight angles seen in the plan of the structure can be marked by the five circumscribing squares in the outer circle of 17.08m diameter.
3. The ratio of the stem of the tower to the cone of the dome in the outer frame is 2:1.
4. The ratio of the inner circle to the height of the stem inside the tower is 1:4. The cone of the dome is divided into 4 equal triangles, and the egg-shaped ceiling has three arches on each side⁴².



⁴² The schedule and information of the International Conference on the millennial anniversary of the construction of Gunbad-e Qābus, ICHHTO, 1997, p12-253

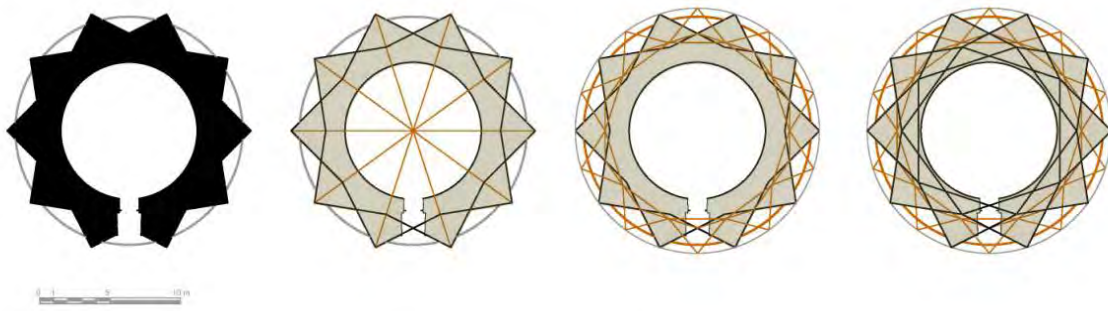


Figure 40. Plan of the Tomb Tower, horizontal Section and principles and geometric order of Gonbad-e Qābus

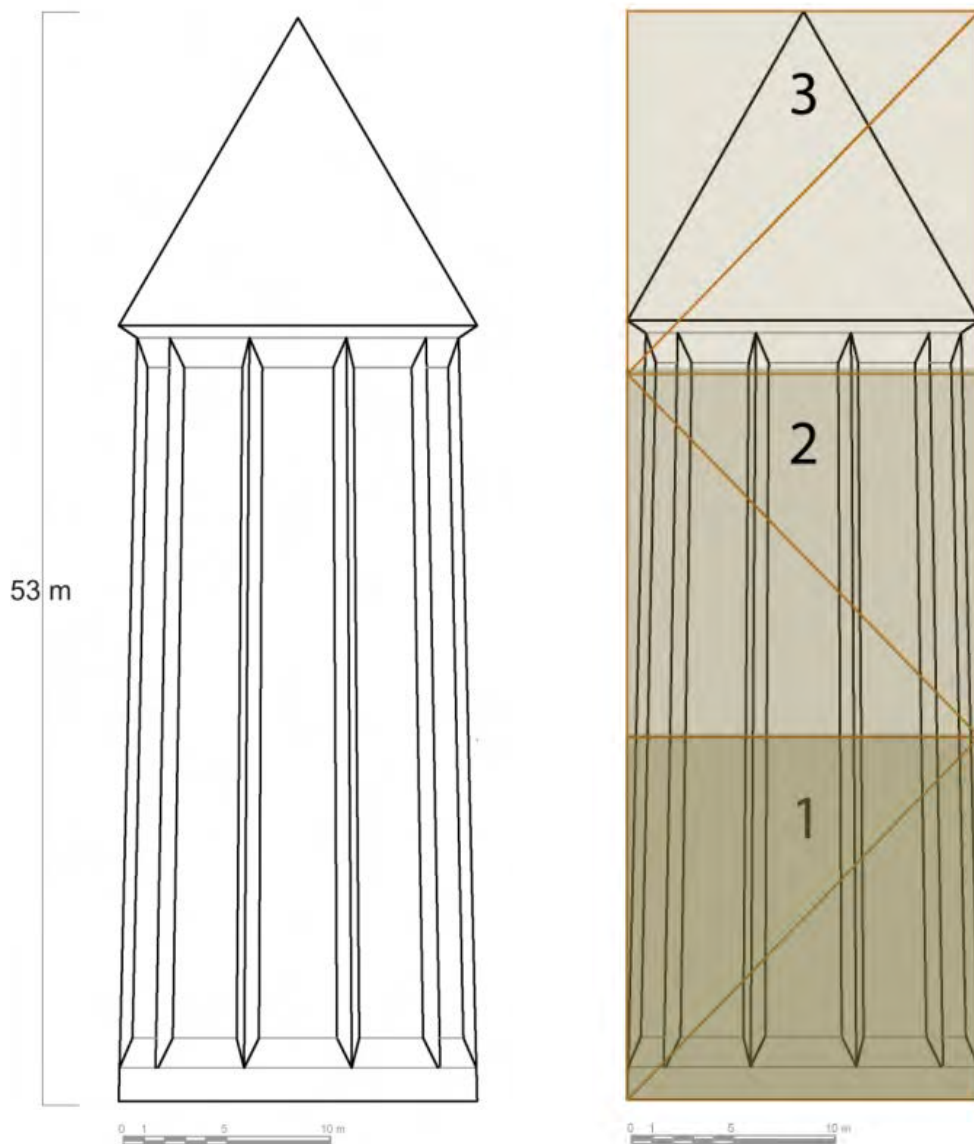


Figure 41 - principles and geometric order in height of Gonbad-e Qābus

2. a. 5.4. Composition

The structure of Gonbad-e Qābus is composed of two masses of the body and roof, and includes the following three parts:

1. The foundations or the base
2. The body
3. The conical dome

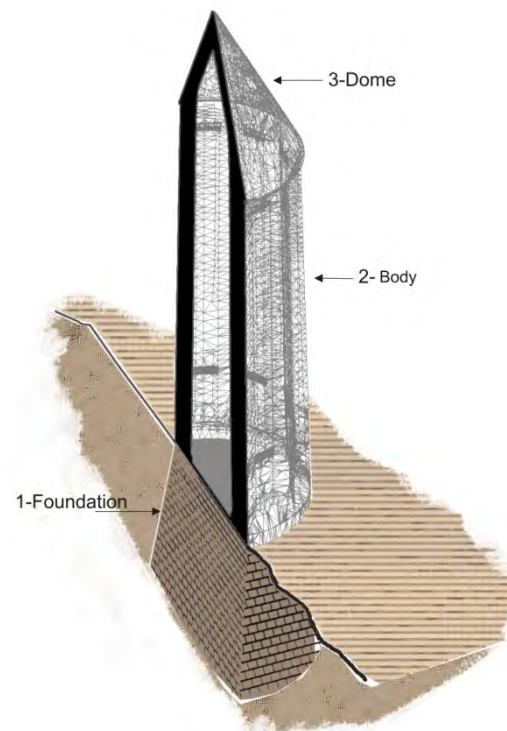
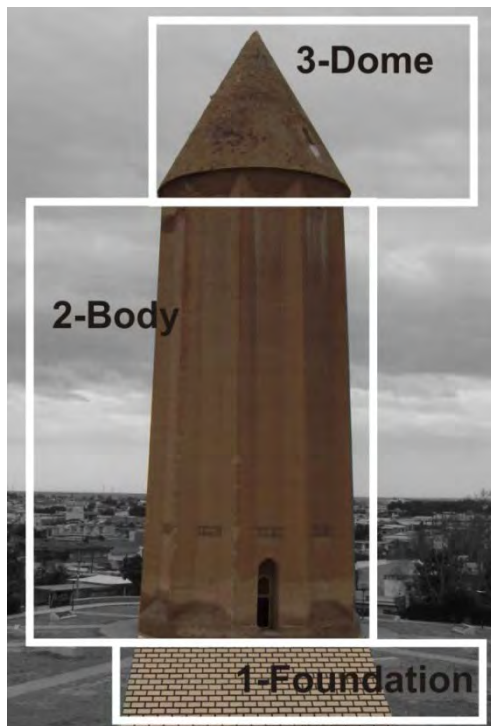


Figure 43 - The structure of Gonbad-e Qābus Figure 42 - Component Parts of Gonbad-e Qābus

- The foundations or the base

The Russians carried out the first excavations in the foundation of the structure in 1899, presuming that they would find some crypts [based on what the story had about Gonbad-e Qābus' body being buried there]. Thus, they thrust a 10.75-meter shaft deep into the center of the dome, but they found no more than the brick foundation. According to Godard, *“the Russians’ excavations proved that the stem of the tower was founded deeper than 10.75 meters of depth they had reached underneath the base. The shaft they used did not touch the platform of the foundation, which was certainly built beneath the original base. The inner base is almost one meter higher than the outer base (on the hillock).”*⁴³

⁴³ Godard,(-) pp1182-1183

The latest surveys in C.V trenches have put the depth of the tower at 9.8m⁴⁴. The geotechnical studies also show that the soil used in the foundation is of fine-grained material, laid by man to the depth of 4.5 meters, after which lies the natural strata of the earth. Thus, the foundation of Gonbad-e Qābus has been started on hardpan, but continues to reach a height of 9.8 meters using bricks and materials similar to those of the building.

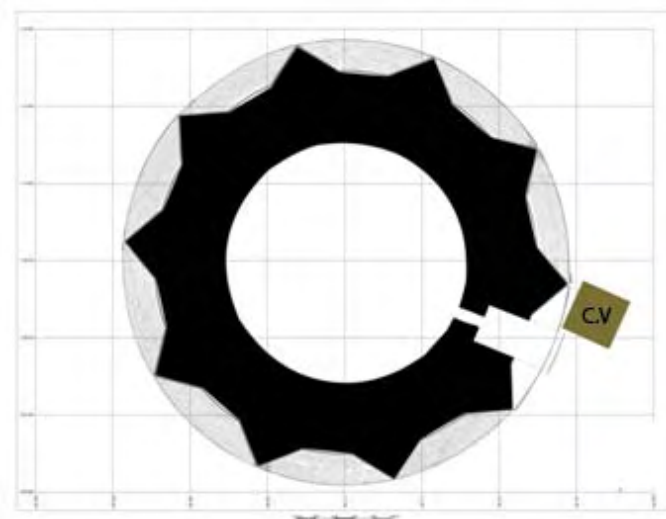


Figure 44 -The Location of the Trenches

The location of the trench dug, 2×2 meter in dimensions and 40.11in depth, for the identification of the base and the extent of the construction can be seen in the above plan. The root depth of the building was found to be 9.80 meters.

The root of the brick made building is made with a mortar (*sarouj*) like material, which conically sits further in front every few meters exactly similar to the conical interior bricks arrangements of the tower which continues alike until the top of its dome⁴².

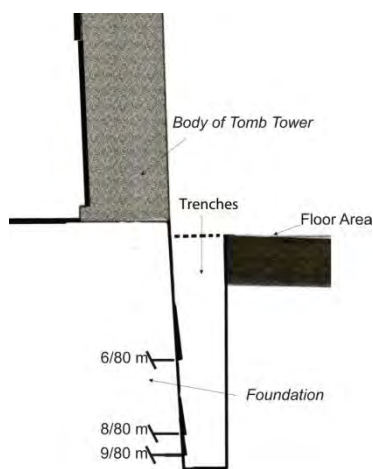


Figure 46 Trenches Details



Figure 45 - Image from Inside of the trench

⁴⁴ Rakavandi and Abbasi- 2009

- The body

The body of Gonbad-e Qābus is all made of unglazed fired bricks. The thickness of the mortar used as the binding material varies between 2 to 4 cm, and the pointing is perfectly fine and flawless.



Figure 47 - Floor Plan and the Body of the Tower



The outer round body of the tower has 10 crevices in 90° shaped like a 10-pointed star, starting from the base and concluding in the conical roof, enhancing the glorious height of the tower.

The space between the crevices is the same from the bottom to the top which is made possible by the reduction of the size of the crevices as the tower rises.

The space between the crevices is filled with bricks making a solid mass. The interior is completely disintegrated from the outer space saving the door to the east of the tower.



Figure 48 - South side of Gonbad-e Qābus (Lower Body)

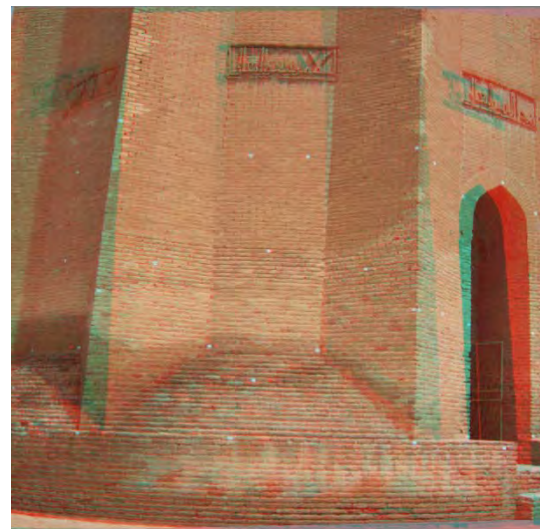


Figure 49 - Photogrammetry of the south side (Lower Body)

Regardless of the stalactites works (*moqarnass*) of the entrance and the relief inscriptions which run around the body of the tower in the spaces between the crevices, the structure is bare of decorations. Further information on the brick ornamentations can be found in section 2. a. 5.5.

André Godard puts the height of the tower at 52 meters including the conical roof. However as stated before and in order to better record the dimensions, the documentation of the tower was carried out in the winter of 2010, using laser scanning method, which put the height of the interior body at 35.266m from the ground to the beginning of the roof, and the exterior at 36.971m, which comes to a total of 52.844m including the roof.

Since the inner and outer thicknesses of the body varies at different heights, cross sections were used in every two meters to precisely measure the thickness, which yielded accurate results regarding the inner and outer thickness of the structure (including the crevices). Based on the measurements and plans made, it seems that the thickness of the tower decreases from the top to the bottom, resulting in a difference of thickness of 1.5m inside and 1.8m outside.

As mentioned above, the only access to the interior is through a door to the east which is 1.57 meters wide in the outer wall and 1.221 meters side in the inner, and is elevated from the outer ground of the tower by 2 steps.

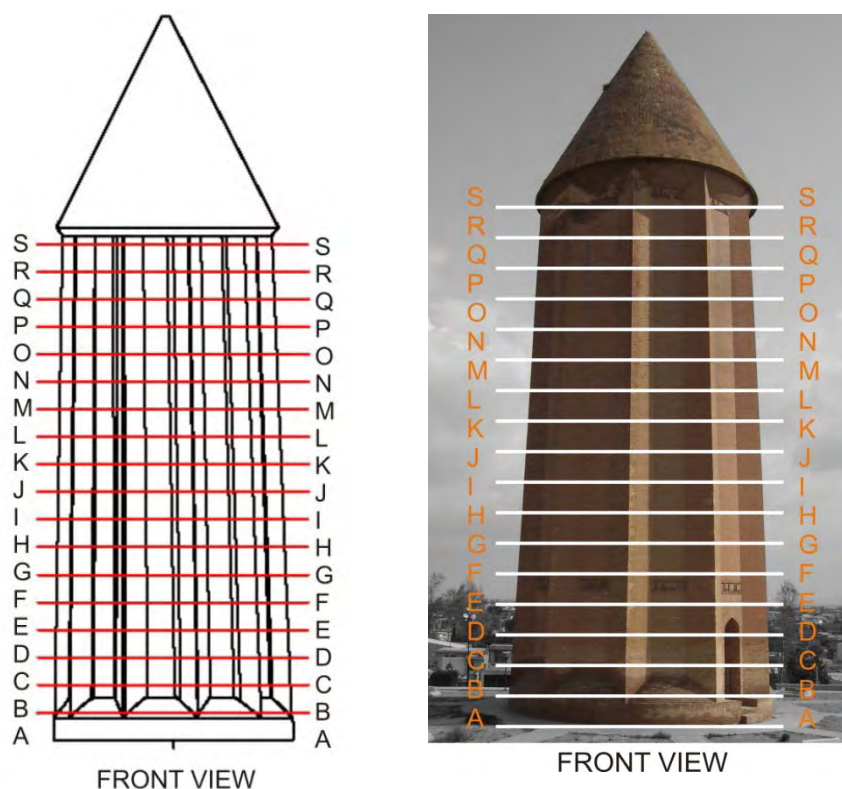





















Figure 50 - Horizontal Sections of the Body of the Tomb Tower

Table 8 - Horizontal Sections of the Body of the Tomb Tower

NO.	Section	Section Height	Internal Diameter	External Diameter	Plan
1	A-A	0	0/000	17/296	
2	B-B	2m	9/638	17/296	
3	C-C	4m	9/448	17/151	
4	D-D	6m	9/355	17/810	
5	E-E	8m	9/258	16/719	
6	F-F	10m	9/188	16/797	
7	G-G	12m	9/051	16/718	

8	H-H	14m	8/935	16/560	
9	I-I	16m	8/828	16/510	
10	J-J	18m	8/702	16/388	
11	K-K	20m	8/716	16/269	
12	L-L	22m	8/634	16/163	
13	M-M	24m	8/555	16/063	
14	N-N	26m	8/490	15/969	
15	O-O	28m	8/424	15/847	
16	P-P	30m	8/351	15/762	

17	Q-Q	32m	8/273	15/651	
18	R-R	34m	8/175	15/532	
19	S-S	36m	8/123	15/458	

The arched narrow entry is designed in such a way as to not betray the height. It is shorter inside than outside, with heights of 4.328 and 5.565 meters respectively. It is decorated by an arch above and some *moqarnass* works on either sides.

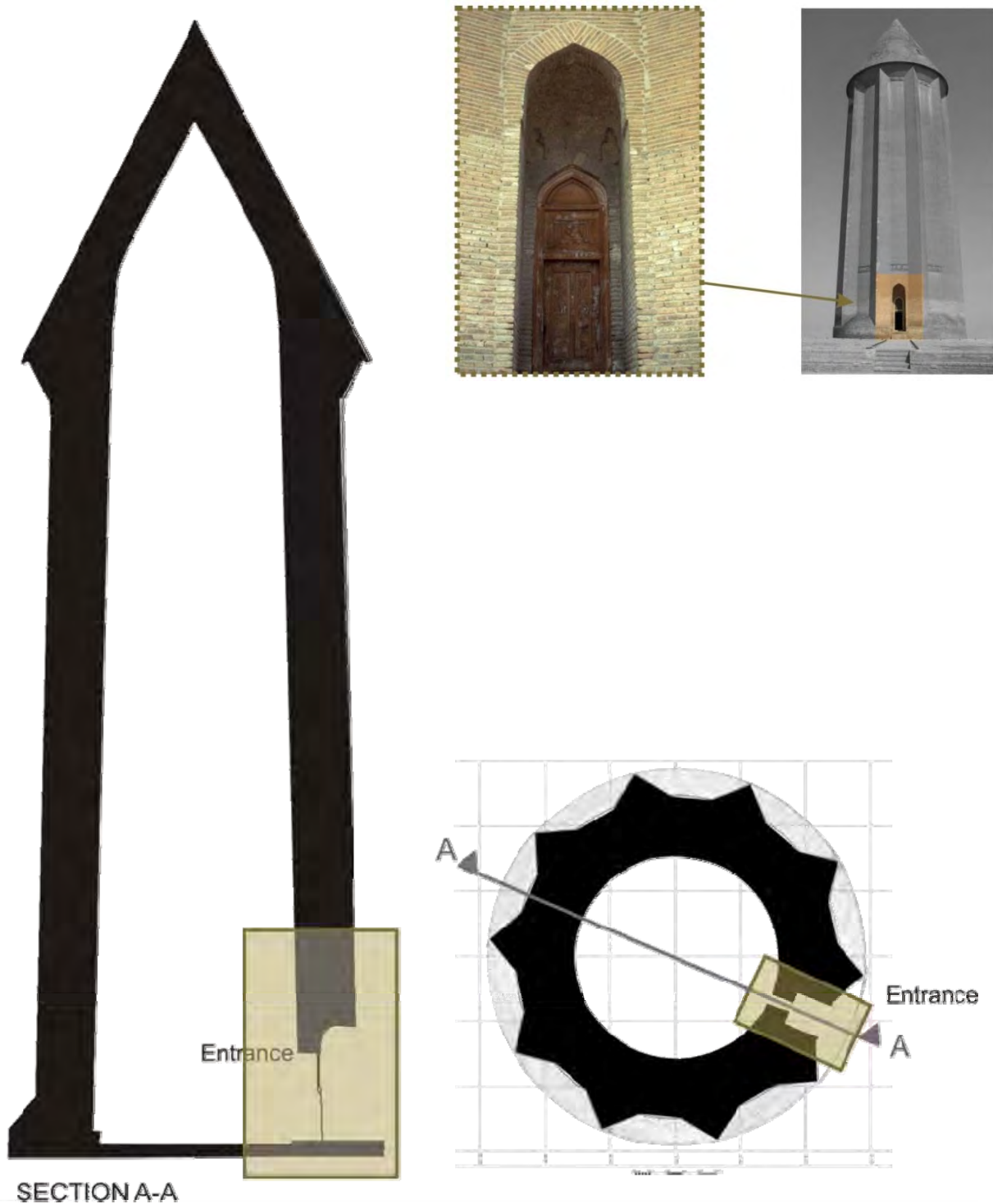


Figure 51 - Entrance in Plan and Section of the Gonbad-e Qābus

- The roof (conical roof)

One of the most outstanding features of this structure is its conical roof which is made with extreme mastery to further highlight the significance and magnificence of the tower in so much as one can claim that it is the conical dome that perfects the tower adding to its 37-meter height.



Figure 52 - The Roof (Conical Roof)

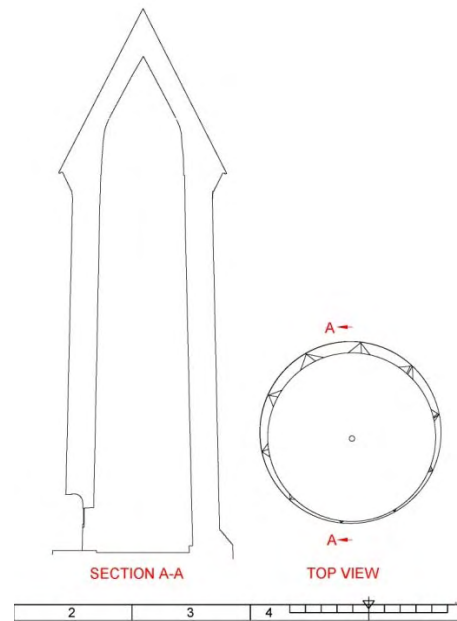


Figure 53 - Top View and Section of Gonbad-e Qabus

The photogrammetry surveys showed that the height of the dome is 15.873m on the outside from the gutter to the apex, and 12.395m inside from the base to the apex, which marks a difference of approximately 251cm.

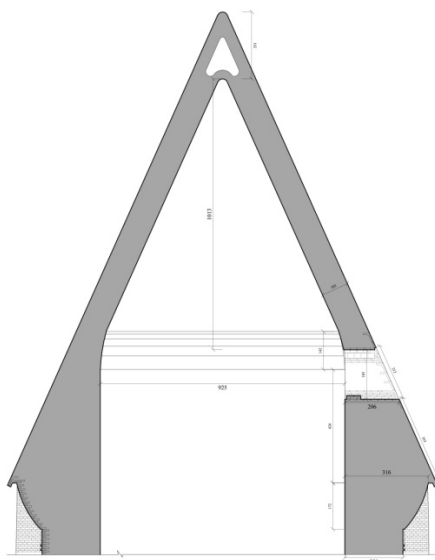


Figure 54 - Section of Conical Roof



Figure 55 - View of Conical Roof

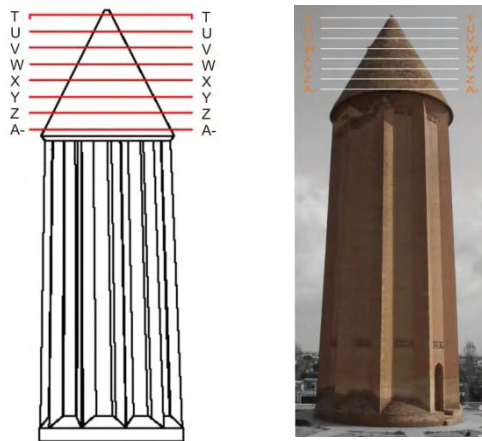


Figure 56 - Horizontal Section of Conical Roof

Table 9 - Horizontal Section of Conical Roof

NO.	Section	Section Height	Internal Diameter	External Diameter	Plan
1	T-T	38m	07/85	15/02	
2	U-U	40m	7/53	12/91	
3	V-V	42M	06/46	10/91	
4	W-W	44M	04/335	08/85	
5	X-X	46M	2.42	06/95	
6	Y-Y	48M	-	16/797	
7	Z-Z	50M	-	2/80	
8	A-A	52M	-	16/560	

It should be mentioned here that the construction of double-shelled domes in the area with high precipitation is common in Iran, as they prevent the moisture from penetrating the inner shell. Gonbad-e Qābus, too, was initially presumed by some scholars to have had followed the same tradition and concept. However the most recent surveys carried out prior to the restoration of the building have now proved otherwise as the arrangement of the roof, can be seen in the figure 59.

In a 353-centimeter distance from the edge of the gutter to the east side of the roof, there is a window of 213 cm wide, which is linked to the interior space. The window's opening is narrowed down from the bottom to the top, ranging from 85 to 75cm. The height of the window is 185cm.

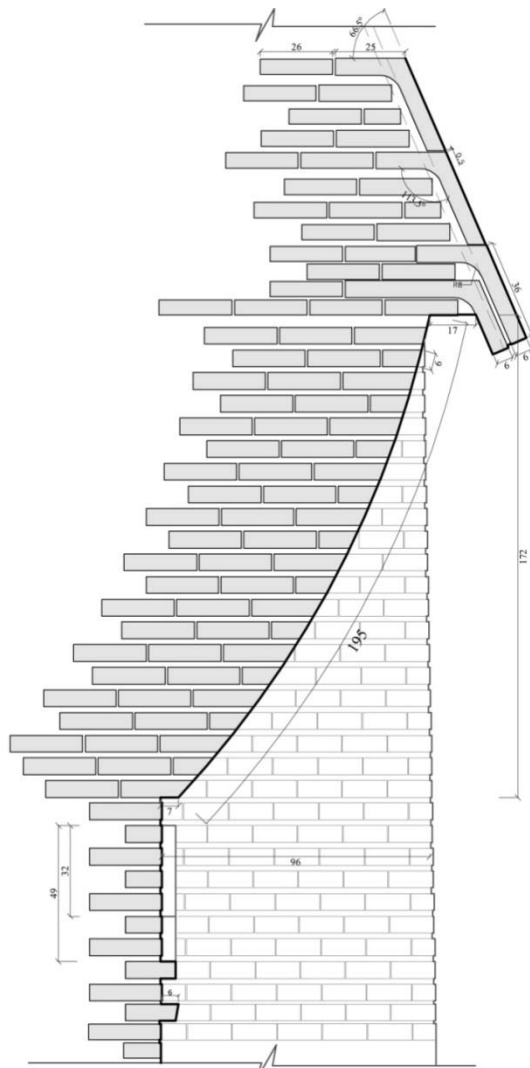


Figure 57 - The edge of the gutter of the conical roof

Figure 58 - Detail of the edge of the gutter

The window is made of a crescent-shaped arch of 5 sections with a rise of 31cm made horizontally, perpendicular to the inner surface. Examinations show that the pole plate of the inner shell also begins from the pole plate of the arch that covers this window. In fact, the window is made into the wall of the inner cylinder, and determining its thickness on the top and the bottom would reveal the thickness of the pier and the shells of the dome respectively⁴⁵.

Godard's opinion about this opening is that, *“the window could have been made for the workers in order to pass the building materials while the tower was under construction. If so, it should have been blocked in the end, and the last worker inside could have gotten out. But not only they avoided sealing it, they also have made it neat and nice, which is so much of evidence for the builders' intending otherwise. That is, it might have been following the tribal tradition of making a hole into the wall of nomadic tents in order to let the early light of the sun in. Qābus has undoubtedly stated that his body should be exposed to the rising sun at early hours each morning.”*⁴⁶,

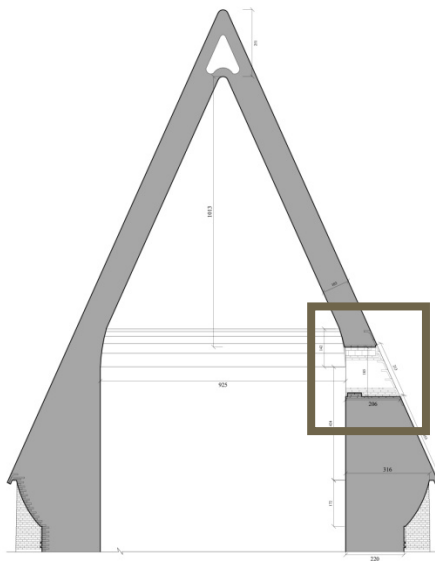


Figure 59 -Location of window in the conical roof

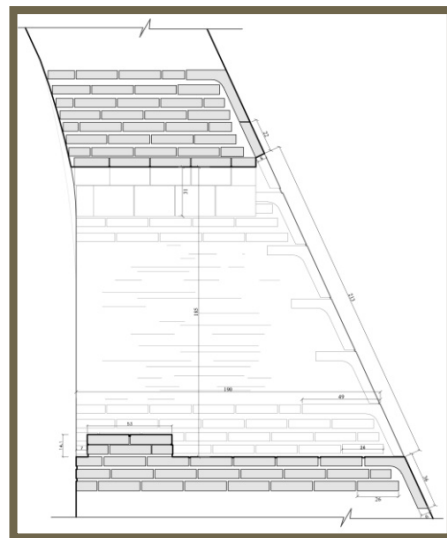


Figure 60 - Detail of the window

The diameter of the dome based on the intersection of the inner and outer surfaces from the height code of the top of the window inside to the top of the roof was calculated about 103 cm.

The top (crown) of the dome had a horizontal array of bricks measuring 20×20×5 stretching for approximately 66cm. The bricks being different from other materials used in the tower shows that this area was added to the structure as part of a restoration work. Also, the difference between the arrangement of this part and other

⁴⁵ The Report from Gonbad-e Qābus Base, 2010, Mr. Irvani

⁴⁶ Godard [?], pp1182-1183

surfaces indicates the considerable space and thickness of the shells in this area. Considering the approximate thickness of the area between the bricks of the roof and the edge bricks to where the shell ends inside (215cm) and the arrangement of the horizontal bricks, it seems that there should be a hollow space in this area so as to count for the stability and the proper gravitational pressure of the inner shell of the dome.

Also, as seen in the images from the interior of the dome, there are seven rows of 15×15 cm bricks from the top, whose use as in a surface is practically impossible. So, considering the bricks used on the outside and their form, similar bricks can be assumed to have been used in an intersecting fashion as is depicted in the plan.

Bricks used in the dome are different from those used for the body. The ones used to build the dome are of a fringed type which has in fact prevented the dome from ending up as a pyramid. The cone which is the masterpiece of this tower has an even surface. Special trailed shoe-like bricks are used in building of the dome.

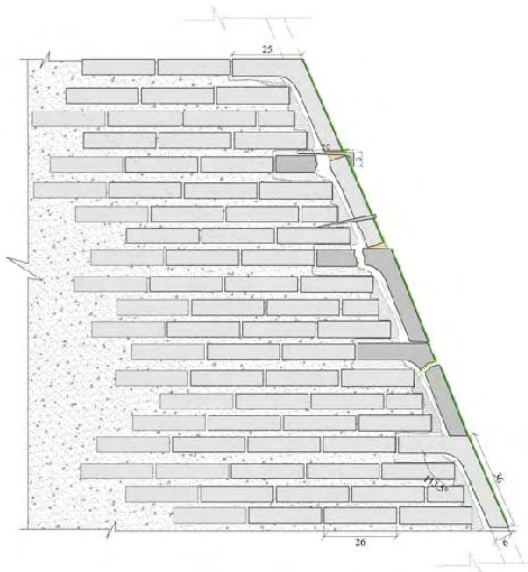


Figure 62 - Detail of the brick work in the conical roof



Figure 61 - The typical brick fringed used in the conical roof

Gonbad-e Qābus has incurred damages in various historical periods, and thus has undergone several phases of restorations.

The first documented restoration available is compiled by *Nasrollah Meshkati*, who was in charge of the restoration of the tower in 1938 and 1939. He writes:

“The structure of the tower had incurred grave damages as a result of negligence and intrusions. In some parts of the base, there were holes of 2 to 2.5 meters wide. In

addition to the damages of the foundations and the base of the structure, the conic dome had been damaged, as about 1500 bricks were broken or removed by gunshots. The interior was also in dire need of restoration and repair. The earliest restoration works were carried out in 1925 on the platform and bases, and the structure was inscribed on the list of national properties in 1931 under the number 86. In 1937, Russians carried out some excavations looking for the body of Qābus, and went down for 11 meters, where it is said that the foundation of the tower still went deeper".

In September 1939, provisions were made for the restoration of the tower: special types of brick for the roof were prepared, and cranes and other technical equipment were provided or installed. Then in December of 1938, all the restoration works including the repair of the conic dome, the platform, the interior, and inscription was concluded. After that, the Russians custom office was established at the tower during the World War II, from 1939 to 1945. It is also mentioned in some reports that another set of restoration activities was conducted at the base of the tower in 1961, but no documented report of it has yet been retrieved.

Mr. *Meshkati* and Mr. *Seyyed Ali Karimian* (the author of *The Ancient Historical Town of Jorjan- Gonbad-e Qābus*) also refer to another season of restoration work on the brick decorations of the tower in 1969 and 1970, but neither mentions the exact spot and type of the repairs. From 1976 to 1979, during the period which corresponds to the time of the Islamic revolution, the conic dome and some bricks of the body of the tower were also removed or broken due to the gunshots.

In 1993, the ICHHTO (Iranian Cultural Heritage, Handicrafts and Tourism Organization) of Mazandaran provided some ramps and passageways across the mound, and re-organized the mound by adding pavements, landscaping of the garden and the hillock, and flowerbeds, etc, which have in fact been the last major restoration project implemented in recent years.

After the abovementioned works, the following activities have also been performed in recent years so that the tower of Gonbad-e Qābus is kept in a good conservation state:

- 2005: Emergency restoration of the dome
- 2006: Stabilizing the bricks of the body and the pointing
- 2007: Restoration of the interior in order to stabilize the bricks of the body and the ground⁴⁷

⁴⁷ *The History of Restoration works at Gonbad-e Qābus*, Poor Qassem, Jamileh, ICHHTO of Golestan, 2010

2. a. 5.5. Decorations

Studying the four significant building structures of the Islamic middle ages, the mausoleum of Amir Ismail Samani (early 4th century AH/ 10th AD), Nain Jame' (the same century), Arsalan Jazeb's mausoleum and Mahmood Ghaznavi's tower (both from the early 5th century AH) shows the interest of the Iranians in architectural decorative elements. Thanks to the extreme efforts made in their construction, all four were made magnificently and brilliantly. Decorative methods and elements differ from one to another based on the building materials, measurements, colors, and plan of the structure. All four are well-developed, showing the long history of the methods applied in each. This fact dismisses the proposition that the structures of the early Islamic years were bare of the decorations.



Figure 64- Mausoleum of Amir Ismail Samani Figure 63 - Decorations of Amir Ismail Samani Mausoleum

In fact the architecture of the early Islamic centuries has not witnessed declines and instability saving short periods and at regional level. Actually, it brought about great interest and waves of artistic creativities in many regions of the Iranian territory. Although the rigid loftiness of this magnificent work of architecture and its seemingly undecorated appearance may, at first, convey otherwise but in fact its primary element of impression is its sheer, superb and stable height which make one of the most outstanding monument of Iran if not in all the Islamic World. Gonbad-e Qābus is a soaring undecorated tower which immediately wins over its visitor, a feeling not only attributed to its unquestionable volume and size but also to the rigidity, simple shape,



Figure 65 - Decorative parts of Gonbad-e Qābus

Dark color, and the indisputable stability of its gigantic ridged conic dome as part of its characteristic features, which is fact an architectural and building assurance to its stability, security and strength. These features from an Iranian understanding and perspective possess decorative aspects.

It is, however, not much of evidence of the methods of decoration at the time or extents of restraint in applying ornamental elements. Nevertheless as seen in all plain structures of the type the traces of the builders' intention of decorating can still be observed. There are two inscriptions around the top of the tower and also in a short distance above the base, which are made of relief bricks, and seem extremely simple at the first sight⁴⁸.

The prototypes of the inscriptions of Gonbad-e Qābus with their *Kufic* calligraphy are first spotted in the *Razi* style of architecture under the Ziyarids. The calligraphy style is very simple and legible, which is used mainly in the inscriptions of buildings, and that is where the name *Banaii [related to buildings] Kufic* comes from. It has a variety of forms known as easy, moderate, and difficult. *Mo'aqeli* type is not widely used in scripting since it is basically done on gridded bases as they first make the whole paper into a grid, and then arrange the letters based on the grids. Thus, it would be easy to arrange bricks in the same fashion, and the resulting script would be both legible and decorative. That is why it is referred to as the *Banaii* style.

Figure 66. Brick decorations in the body of Gonbad-e Qābus



⁴⁸ Pope, tr. Nooshin Dokht Nafisi, 2008, p1511

Mo'aqal means fortified, and the meaning well reflects the style of calligraphy and the way it looks, also implying that the name was given to the style after it was perfected. It seems that this one was derived from *Kufic* mainly to be used in architecture. Given that the style was created before Islam, it can be concluded that it is derived from *satranjili* style which is in turn the origin of *Kufic*. *Mo'aqeli* is the best style for architecture since both negative and positive spaces of it can be read; that is, the dark or negative areas bear certain words while the bright or positive ones show different words⁴⁹.

The brick inscriptions in the bottom and on the top of Gonbad-e Qābus tower are great examples of this style, similar to those of the west inscription of Radakan tower.

In order to make the inscriptions further legible, the letters had been covered with plaster. It was clear from the beginning that the plaster would soon wear off, but it was meant to yield a better look, no matter how temporary. The inscriptions are made in 10 sections, each on one side of the tower. Currently, most letters are bare of their original plaster covers. The lines are straight with the long, narrow bricks lined up in the same direction. Unlike what was the fashion of the time, the lines are not decorated with fine foliage ornamentations. Rather, they are plain, but with considerable stability and strength, which indeed fits the overall ambiance of the structure⁵⁰.

⁴⁹ <http://p30data.com>, calligraphy

⁵⁰ Godard, [?], pp1183-1185

The inscriptions start from the southeast side of the tower to the east of the door, and run westward clockwise. The inscriptions bear the following words:

1. بسم الله الرَّحْمَن الرَّحِيم

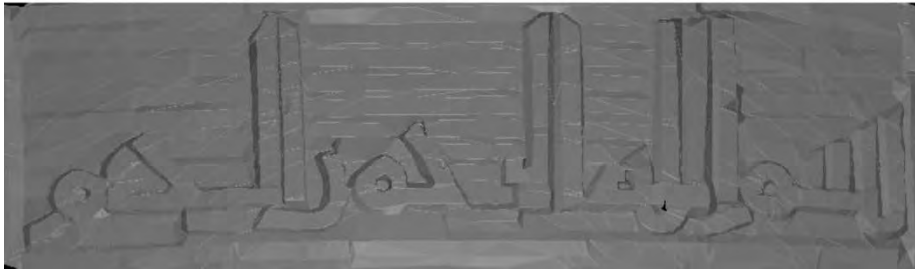


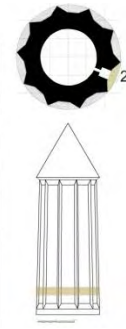
Figure 67



2. هذا القصر العالى



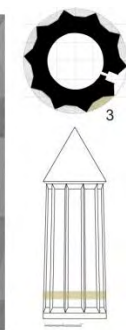
Figure 68



3. الامير شمس المعالى



Figure 69



4. الامير ابن الامير

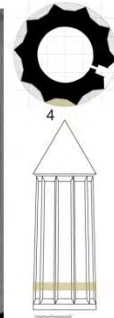


Figure 70

5. قابوس بن وشمگیر



Figure 71

6. امر بننانه فی حیاته



Figure 72

7. سنه سبع و تسعين



Figure 73

8. وثلثمائه قمریه



Figure 74

9. سنه خمس و سبعین



Figure 75

10. وثلثمائه شمسیه



Figure 76

“In the name of God the Merciful the Compassionate.” This tall palace for the prince Shams ul-Ma’ali, Amir Qābus Ibn voshmgir ordered to build during his life, in the year 397 the lunar Hegira , and the year 375 the solar Hegira

The inside of the entrance façade is also made of three deep *Espar*⁵¹, which seem to be redundant in terms of architectural elements, but are beautiful decorative elements, yet another aesthetic feature of the tower.

Inside the arch of the entrance there is an equilateral *chalipa* shape in a rhomboid frame, in which there are steps exactly like those inside the arch below the dome of the *Jame'* Mosque of Isfahan, the *Jame'* Mosque and *Heydarya* mosque of Qazvin. It is of long history in Iran, having survived due to its simplicity and ease of performance, and to its decorative function. It has also been used to decorate many more tomb towers in Mazandaran. The walls of the interior had once been covered with plaster, but even in the areas where there are still remains of the plaster cover there is no trace of painting or other ornamentations. However, there is as much of the plaster cover remaining as to prove that Gonbad-e Qābus has never been an example of the "*plain, undecorated brick structures*"⁵²

The interior of the Gonbad-e Qābus is just as plain and simple as the exterior. It has originally had a plaster cover or a colored layer of plaster of 1-6cm thick, whose remainder is still visible from the height of 7-8 meters up to the apex of the conic dome⁵³.

⁵¹ *Espar*: Decorative elements attached to the wall

⁵² Pope, Arthur, tr. Nooshin Dokht Nafisi, 2008, p1511

⁵³ Report on the Restoration of Gonbad-e Qābus, ICHHTO of Golestan, 2006, p32



Figure 78 -- Moqarnass work, inside of the entrance façade

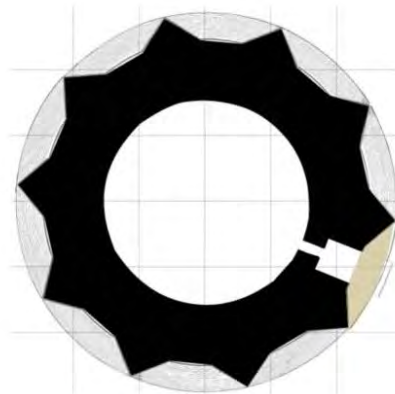


Figure 77 -- Moqarnass work inside of the entrance façade

2. a. 5.6 The structure

The first look at the plain structure of Gonbad-e Qābus may make one presume that it does not have any particular features, but as one approaches, the height and the fineness of the body and the dome proves the rich techniques used in the construction of the tower.

One of the most notable structural features is the brick foundation of over 9 meters in order to erect a tower of more than 53 meters height, which has guaranteed the stability of the structure against natural disasters (earthquakes, detailed in 2. a. 3.1). The tower has thus had very trivial declination southwards.

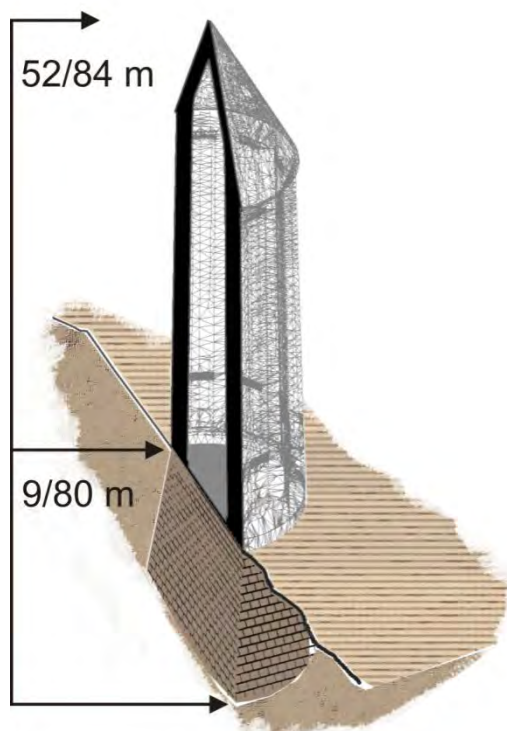


Figure 80-Proportionality between the foundation and body

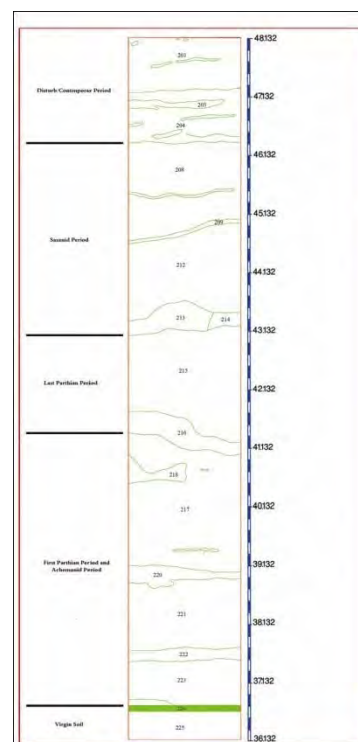


Figure 79 - Stratigraphical Section DV of Gonbad-e Qābus

The special way of construction of the tower and the methods used to link various parts to each other and to attach, the flanges to the body (circular plan) have formed the structure of the tower. The builders have used an alteration of one row of complete bricks and one of quarters on top of each side, and continued the pattern to the body of the cone, which has resulted in the best type of brick arrangement of the sort both horizontally and vertically. The pattern continues to reach to the highest ring below the roof. As studies show, the alteration of boss and relief array of the bricks continues through inside of the body, creating an integrated mass.

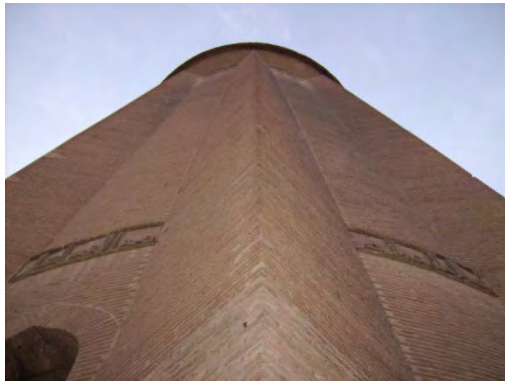


Figure 81 - Flanges of body

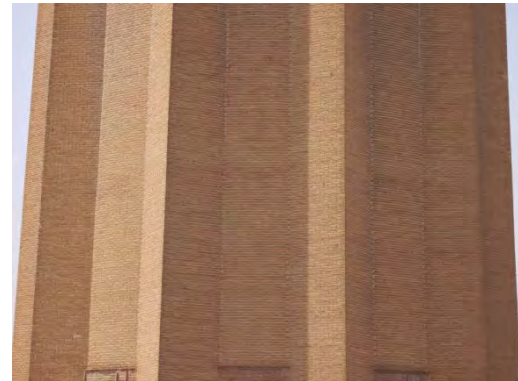


Figure 82 - View of the flanges

Use of proper *chafds* in both shells has had double decorative- structural function. In fact, use of special bricks prepared beforehand made possible the construction of the even structure of the conic dome without it requiring any isolation.

Another important point in the construction of the tower is that the cover is built on the main pier of the structure for 7 meters, and the dome begins after this distance in which there has been a change in the arrangement of bricks in such a way as the resultant gravitational load is directly on the pier. Thus, the structural length of the roof would be decreased to 12.5 meters.



Figure 83 - location of conical roof joining the body

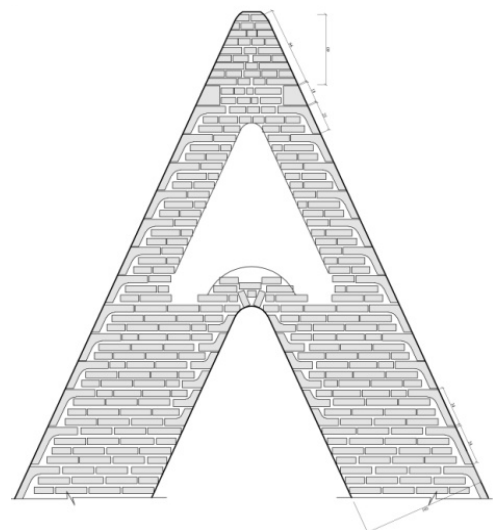


Figure 84 - Section of the conical roof

Also, the actual height of the shell, which begins 70 cm below the height code of the crown of the window, is approximately 13.5 meters, while the height of the conic dome is 17.8m on the outside. Another feature of the structure is the use of an inseparable mortar which can count for the resistance of the structure over the course of ages.



Figure 85 - Inseparable Mortar used in the foundation.

2. a. 5.7. Building materials

Gonbad-e Qābus is entirely built of bricks of bright yellow with a dense, high quality. They are square-shaped, mostly measuring 20.8 by 7.4 cm; however, the dimensions may vary in some instances. The differences have been neutralized in the arrangement of the bricks.

The thickness of the pointing mortar varies from 2 to 4cm, which is fine and flawless all across the tower. There are various theories regarding the mortar which seems to be a very strong mix of lime mortar.

The mortar used in the dome is gray, containing a mixture of sand and gravel, which has surprised experts with its ultimate strength insomuch as some believe that all the stability and strength of Gonbad-e Qābus tower is because of this uncommon mortar.

Different types of bricks were used in the body and in the dome, since the latter is made of certain type of fringed brick (elsewhere used merely in Radkan tower, a monument of the same period), which has the otherwise pyramid shape of the dome into the existing cone. The bricks used in the body are of a certain shape known as fringed [*rishe-dār*] or rooted among the locals. Various sizes of them are used in the body of tower, and as the structure rises, the width and length of the bricks are diminished.



Figure 87 - The Typical fringed bricks used in the conical roof

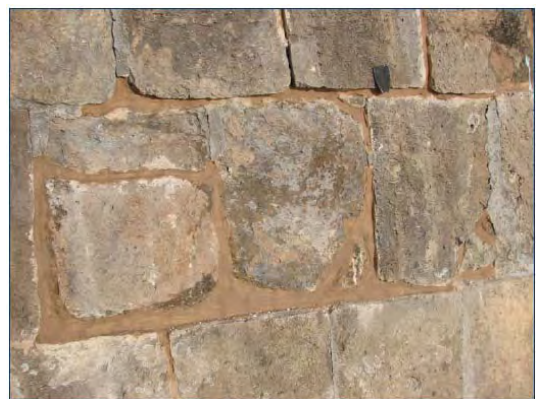


Figure 86 - The typical bricks used in the roof

The bases of the bricks above the edge, where the base of the cone starts, are 48 to 50cm, while the bases of those in the middle of the body are downsized to 40, 36, and 29cm, finally even getting down to 20-28cm where there is 2.5 to 3m distance from the apex, and concluding in a pointed brick there. Thus, extreme mastery is employed in the building of the tower as there are 5 to 6 bricks of 25×25 and 6×6 laid in the row right under the neck which are kept together by plaster mortar, and then fringed bricks are loaded over them. Since the bricks are integrated well to shape a rigid cone, there has been no need of pointing⁵⁴.

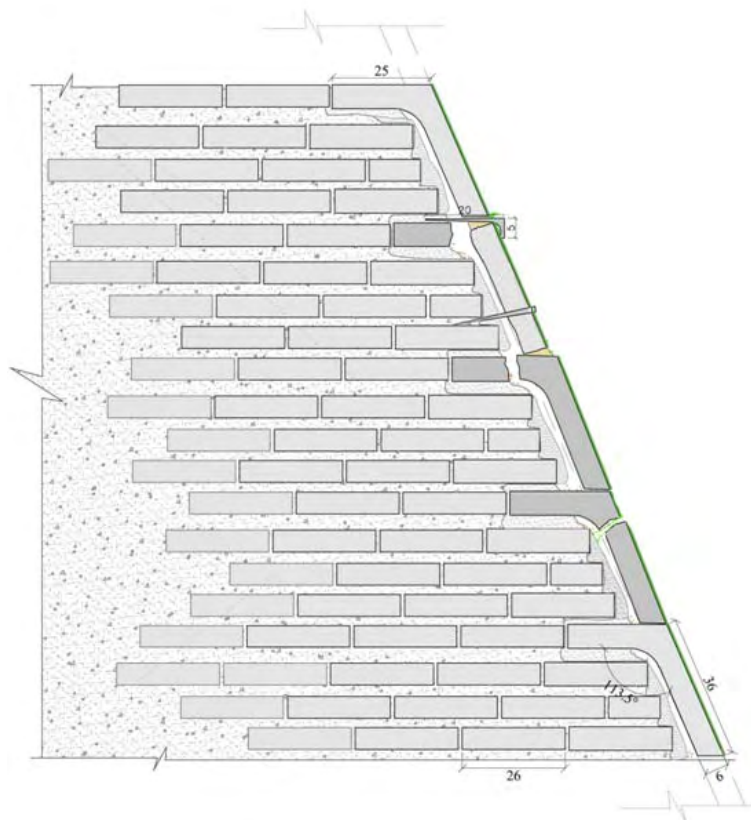


Figure 88 - Details of the brick works in the conical roof

⁵⁴ Report on the Restoration of Gonbad-e Qābus, ICHHTO of Golestan, 2006, p32

2. b. History and development

2. b. 1. *Qābus Ibn Voshmgir*

In 976 AD, as Qābus replaced his brother, *Roknoddowla* passed away, and the lands under his rule were divided among his three sons, *Azododdowla*, *Mo'ayedodowla*, and *Fakhrodowla*. Thus, *Azododdowla* came to rule Fars, Kerman, and the coasts of the Caspian, while Isfahan went to *Mo'ayedodola*, and Hamadan and some parts of Arak was ruled by *Fakhrodowla*.

In 979 AD, *Azododdowla* and *Mo'ayedodowla* joined forces to push *Fakhrodowla* out of Hamadan, and the latter had thus to take refuge in Gorgan and at the court of Qābus, who welcomed and hosted him properly, and also promised to support him to take his lands back.

The other two brothers send a message to Qābus, asking him to leave the third one with them, and to send him back in return for one year worth of the taxes from Ray, but Qābus refused, seeing such an act as inhumane, and even replied them in a harsh way. This provoked the two brothers, and they sent troops to Gorgan and Tabarestan. As Qābus was unable to resist them, he escaped to Khorassan after a quick combat near *Astar Abad* in 981 AD defeated, *Fakhrodowla* then left Gorgan and Tabarestan to them.

Khorassan was then ruled by the Samanids-appointed *Hesamodowla Abol Abbas Tash*, who was designated by *Amir Noah ibn Mansoor* to return Qābus and *Fakhrodowla* to their original lands. *Abol Abbas* sent one of his men named *Fayeq Khasse* to Qomes, and headed for Gorgan himself, where he besieged *Mo'eydodowla* and the town for two months, but could not conquer it even after *Fayeq* joined him. Finally, *Mo'ayedoldowla* bribed *Fayeq* and his soldiers, and asked them to flee at the battle time. In the Ramadan of 981 AD, *Mo'yedodowla* attacked the troops of *Tash* and *Qābus*, but since *Fayeq* and his men ran away, *Tash*, *Qābus*, and *Fakhrodowla* could not resist, and were defeated in Neishabur. Qābus' state of errantry continued due to the domestic conflicts of the Samanids and the vying of *Hesamodowla*, *Fayeq*, and the heads of Simjoori⁵⁵ family until 998 AD. After only four years of ruling, Qābus spent 18 years in exile in Khorassan.

After the other two brothers died in 990 and 991, *Sahib Ibn Ibad* asked *Fakhrodowla* to go to Ray and rule. When he rose to power, did not return the favors of Qābus, and instead of giving him back his authority, sent *Abol Abbas* to rule Gorgan, since the

⁵⁵ A famous family who ruled Qahestan and Neishabur; they were of great influence on the Samanids, and lost their power and authority with the fall of the Samanids. The founder was Simjoor Davati who was a commander under the rule of Ismail bin Ahmed Samani. He conquered Sistan for the Samanids, and was then appointed the ruler there.

latter had turned his back to the Samanids, and would then back *Fakhrodowla*. *Sahib Ibn Ibad* who had stopped *Fakhrodoqla* from sending Qābus back to Gorgan, was his minister, and did not like Qābus.

The Buyyids ruled Gorgan until 998 AD, while Qābus still waited in Khorassan for the help from the Samanids to arrive.

After the death of *Sahib Ibn Ibad* in 995 AD, and that of *Fakhrodowla* in 997, the Buyyids went to decline, and *Fakhrodowla*'s young son, *Majdodowla* inherited his crown. Disappointed from the support of the Samanids and having an eye on the weakness of the Buyyids, Qābus decided to take action in person, and seek the support of his allies to get Gorgan back.

The first man to join him was Commander *Shahriar Ibn Shervin* of Tabarestan, who easily defeated *Rustam Ibn Marzban*, *Fakhrodowla*'s brother in law and *Majdodowla*'s uncle, and announced the area of Tabarestan under his rule as ruled by *Shamsol Ma'Ali Qābus*. Two other allies of Qābus then conquered *Amol* and *Astar Abad*, where they faced the resistance of *Firoozan*, the son of *Hassan Firoozan*, who wanted to take the land back in favor of the Buyyids, and this resulted in Gorgan's being conquered. Qābus was called back to his throne in 998 AD.

Then again, *Majdodowla* took his troops to get Tabarestan and Gorgan back, but as he realized he could not defeat Qābus, he came to terms with him, especially as he knew that *Firoozan*'s brother, *Nasr Ibn Hassan* had rebelled and become the source of revolt, for *Majdodowla* wanted him defeated by Qābus.

Then, *Nasr* ran to *Qahestan* for the fear of *Majdodowla*, had *Abolqasem Simjoori* as an ally, and provoked and motivated him to take him and his men to the gates of *Ray*, but there, they were defeated by Qābus, and ran to take refuge with *Sultan Mahmood*.

Qābus expanded his kingdom westwards during his reign (998-1003 AD), and conquered *Rooyan*, Gorgan, and *Chaloos*, and appointed his son *Manuchehr* to rule them. As the power and authority of *Sultan Mahmood* was then at the climax, Qābus sent him some tokens of amity and unity.

The peace, however, did not last any longer than until 1001 AD, *Ismail Ibn Noah Samani* revolted against *Sultan Mahmood*, and then took refuge with Qābus. As Qābus hosted him amicably, the peace between him and *Sultan Mahmood* was breached, and was never fixed until he stopped backing Amir Ismail, and did not allow him in Gorgan anymore.

Qābus' being assassinated in 1005 AH

Qābus was no man of mercy, and would easily sentence people to death following the slightest mistrust. Thus, he provoked the animosity and revenge of many, leading to kill even more of those around him. He went so far that he killed his own chamberlain, who was a man of virtue. This triggered the revolt of his troops and commanders, and they came to besiege his residence, but as they could not find him there, they went to Gorgan, and called on *Manuchehr*, and told him that they would help him rise to power in place of his father if he helped them catch Qābus. The son thus helped them and went to Bastam after his father, where he came to meet with his father. Qābus accepted to leave the crown and stay in Janasha castle in abstinence. *Manuchehr* returned to Gorgan and Qābus left for *Janashak*, but still expecting and fearing the return of Qābus to take revenge, the commanders killed him in the castle in 1005 AD.

Qābus is the most renowned of the Ziyarids since he was also a generous man of tender tastes and a patron of poets and scholars, and always socialized with them and tried to help them.

He was among the best writers in Arabic verse and Persian and Arabic poetry. He would send gifts to the scholars and literary men at the time of *Nowrooz* and *Mehregan*. The most famous poets who have praised him are *Hakim Abu Bakr Muhammad Ibn Ali Khosravi Sarakhsi* and *Abolqasem Ziad Ibn Muhammad Qamari Gorgani*. He also had a lot of Arab poets as his companions. The great scholar, *Al Beruni* has dedicated his famous book “The Remaining Signs of Past Centuries” (Arabic الأثار الباقية عن القرون الخالية) to Qābus. Also, the great physician and scientist, Avicenna, *Ibn-e Sina*, had headed for Gorgan to meet him, but before he arrived there, he heard the news of his being killed, and went to Qazvin and Hamadan to serve the Buyyids.

Ziyarid dynasty ruled from 928 to 1043 AH (*Mardavij, Emir* 928 -934, *Voshmgir*, 934 – 967, *Bisotoon*, 967 – 976, Qābus, 976–1012, *Manuchehr*, 1012 – 1031, *Anushirvan*, 1031 – 1043, *Keykavoos* and *Gilanshah*).

2. b. 2. Legends of Gonbad-e Qābus

The tower was built in 928 AD and was named after this brutal ruler, who was at the same time famous for his knowledge and literary ability. He was killed by his commanders a year after the completion of the tower. According to *Jenabi*⁵⁶, his body was put in a crystal coffin and suspended inside the tower at the height of 50 meters, so that it was exposed to the sun light through a 2-meter window every morning.

During the pre-Islamic era, the coffins of the rulers or the elite were made in such a way as to save them from profane hands and enemies, as it is narrated about the coffin of *Anusheravan* for instance. But since Qābus was a Muslim, it cannot be accepted that his body was to remain in the crystal coffin forever. *Javid Imanian* says, “*in the early years of Islam, they would hang the coffins of the elite so people can see and farewell with them, and then, they would be interred in their eternal mausoleum, as is narrated, for example, about Sahib ibn Ibad, whose coffin was suspended prior to its being taken to Isfahan to be buried. But regarding Qābus’ coffin, there is not enough information to base a reliable judgment on. What is for sure is, since there are no steps to access the upper part of the tower, the coffin had been suspended, but had then been buried. However, neither the body nor the coffin was ever retrieved.*”



Figure 90 - View from inside of Gonbad-e Qābus



Figure 89 - View from inside of Gonbad-e Qābus

⁵⁶ Prominent scholar, scientist, historian and poet from *Genaveh*, “*Mollana Abu Mohammad Ibn Hassn Ibn Sannan Ibn Ahmad Hosseini Hashemi Jenabi*”, Died in 999 AH. He is the author of two books of “*Tarikh-e Jenabi*” or “*Al Alim Zakherfi ahval al-Avaiei val-Avakher*”. He has described, extensively, the history of 150 Islamic Dynasties until the year 999 AH.

The one story which can be assumed the closest to the truth could be that in 1886, when the Russians ruled the town of Gonbad-e Kāvus, they launched an excavation at the foot of the tower, probing 10 meters deep into the base of the tower. The findings were that first the mound was manmade with a substructure of bricks up to the pointed where the excavation had reached, and second, Qābus had not been buried there.

There were also other stories among people about this tower, one of which about the existence of a gold saddle on top of the apex of the cone. A man is even told to have tried to reach it in the early years of the present solar century, but found nothing.

Another story says that the architect of the tower had remained in hiding for 5 years after the completion of the tower lest Qābus would ask him to carry out further architectural work before the structure was fully fortified. There is no evidence or proof to verify or deny any of these stories.

The tower has been subject to many assaults and prone to various accidents in its life of 1000 years.

Natural elements such as wind, rain and sun have not caused damages to the tower, but the constant sunlight has changed the red of its bricks to bronze, and the rain has caused minor erosion in it. However, the greed of treasure hunters and the brutality of rulers have always been a threat. One of the rulers of Gilan, for instance, had once ordered a canal to be dug around the tower in search of treasures, stopping only after being told that this might kill all the workers.

Asadollah Mo'ini, one of the writers of the history of *Astar Abad* says, “Once, Nader Shah had gone a long way to reach the north of Iran, and seeing the tower, he was happy to think that there would be a large city, but being disappointed at the sight of small, rather unpopulated village, he ordered it to be ruined. The tower survived the action after all.”

The Russians and the British, too, were among those who tried to penetrate the tower to find some treasures. Also, establishment of some offices at the foot of the tower by the Russians devastated the conditions especially as parts of the dome were hit by their canons.

The reason why the tower was built is yet another riddle, of which the most possible one is its function as the mausoleum of its founder, Qābus, following the tradition of rulers and kings. Another proposition is its being only a show of arts, magnificence, and authority in a monumental and commemorative structure, which brings to mind the greatness of the reign of its founder.

Also, due to its height, it could have been made a landmark to show the passengers to *Jorjan*. There are several examples of such high structure in Iran. Even if this one had not been meant to thus function, it served so later. The techniques of the time dismiss the possibility of use of scaffoldings. Thus, there must have been condensed mounds of soil and steps to the top of the tower for the workers and the materials to reach there. *Javid Imanian* believes that this same system has been used instead of scaffolds in many structures of the Islamic era.

After the end of the construction work, they have removed the soils so as to show off the height and greatness of the tower to the fullest, leaving the soil up to the height of 15 meters from the ground, for the body is bare of decoration up to this height. After the soil was removed, this height was supposed to function as the foundation of the structure. That is why it now seems as if the tower is built on top of a mound.

The time when the construction of the tower was finished almost corresponds to the time when the composition of *Shahnameh* (Book of Kings) was concluded by *Ferdowsi* (941-1032 AD)⁵⁷.

⁵⁷ Naqmeq Aqili, Iran Daily, 3512

2. b. 3. *Jorjan* and Gonbad-e Kāvus

In historical texts, only the state of Gorgan is listed, and there is nothing about the town of Gorgan and the town of Gonbad-e Kāvus. Le Strange believes that the origin of Gorgan is the city with the same name built on both sides of the river.

After the fall of the Achaemenids, Gorgan was also conquered by the troops of Alexander, but about 250 BC, the Parthians took it back⁵⁸.

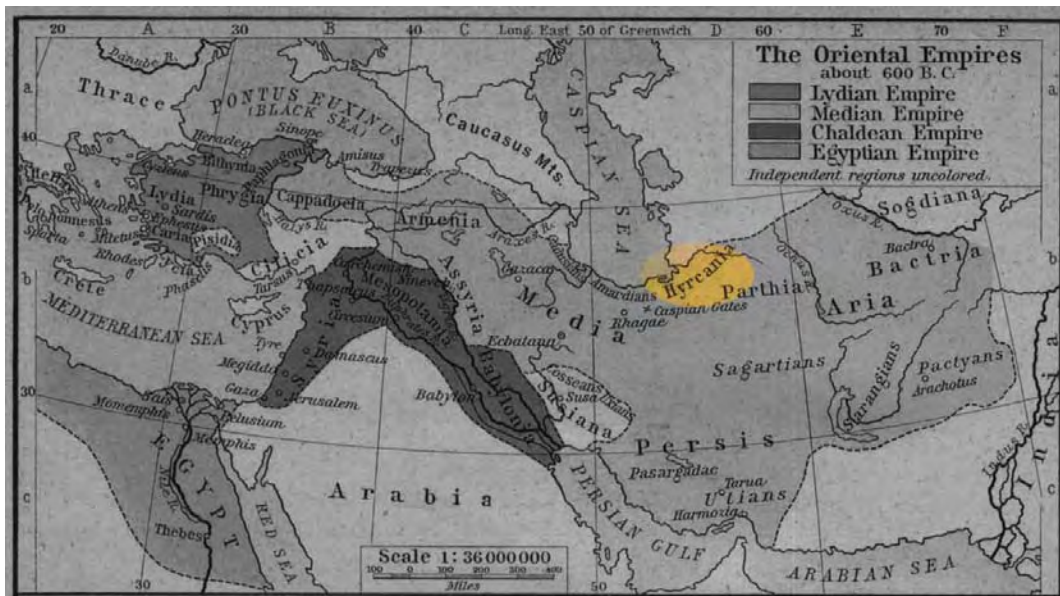


Figure 91- Hyrcanian in the map of Median period

In the early years of the rule of the Parthians, the people of Hyrcania were made into an independent race, as Mithridates I of the Parthians headed for the town after the civil wars⁵⁹. The Espahbod family lived in Gorgan, too⁶⁰, and some cities were built in this state⁶¹. In 58 AD Gorgan announced independence, and turned to an enemy of the Parthians, and even had an ambassador in Greece⁶².

⁵⁸ Le Strange, Guy, 1905 Publications, 2nd ed., 1985, pp. 401-404

⁵⁹ Ghirshman, Iran from the Beginning to Islam, tr. Muhammad Mo'in, Elmi Farhangi Publications, 1991 & Sultan zadeh, Hussein, the Formation of Cities and religious centers in Iran, Agah, Tehran, 1983

⁶⁰ Godard, 2008, p:1180

⁶¹ Sultan Zadeh, Hussein, the History of cities and Urban Life in Iran, Nashr-e Abi, Tehran, 1986

⁶² Mashadi Zadeh Dahaghani, 1995, 211-212

Some scholars believe that this town gained its importance under the rule of the Sassanids⁶³, when immigrants were sent to settle there. Fortifications were also built around the town to save it from the frequent attacks of the nomads of *Behestoon*. One of these fortifications is the wall of Gorgan, built by Firooz Sassani⁶⁴, now known as *Qezel Alan* (the red wall) or *Sadd-e Sekandar*⁶⁵.

According to *Yaqubi*, *Saiid ibn Othman* conquered the town after the rule of Islam began, and then it was re-conquered by *Yazid ibn Molhib* under the rule of *Soleyman ibn Abdol Malik*⁶⁶ in 717 AD.



نسخة أصلي قديمي عربي كتاب "مسالك الممالك" تأليف أبو الحسن اصطخري

Figure 92 - Image map's in the Masalek Al Mamalek Book

The flourishing times of *Jorjan* were under the rule of the Ziyarids. It was even their capital from 1005 to 1912⁶⁷.

⁶³ Ghirshman, 1991, 308/312

⁶⁴ Le Strange, 1998

⁶⁵ Godard, 2009, p1180

⁶⁶ Yaqubi, Ibn Vazeh Al-Boldan, tr. Muhammad Ayati, Bongah-e Tarjome va Nashr-e Ketab, Tehran, 2536, p53

⁶⁷ Travel to Iran, by Muhammad Golbon and Faramarz Talebi, Donyaye Ketab, Tehran, 1984, pp116-117

In 1006 AD, Qābus ordered the construction of the tower which turned to be the highest adobe structure of the world. In 1048 AD, the Seljuk *Toqrol* conquered the town⁶⁸. *Hamdollah Mostofī* attributed the reconstruction of the town to the grandson of *Malik Shah* Seljuk. Like other towns and cities of Iran, the town was ruined in the Moguls' invasion⁶⁹. It never saw its thriving again, until it was completely ruined in an earthquake which probably occurred in 1470 AD, and killed a lot of people⁷⁰. The historical town of Gorgan was empty of urban life ever since, until the new era of urban life began there after a 500 year lapse during which only some Turkmen Yurts were spotted in the area. The Turkmens, who had reached as far as Gorgan⁷¹ in the time of *Sultan Mahmood* and the Seljuks, used the ranches of the area for their animals⁷². At this time, the south bank of Gorgan River was covered with forests, which were later cut down in favor of grains, wheat, rice, and cotton farms. The name of *Jorjan* is still mentioned in the sources from the Safavids time, as *Farhad Khan*, the ruler of Mazandaran, had also been appointed the ruler of *Jorjan*. According to Russian historians, the first steps towards the loosing of Turkmenistan to the Russians were taken by the blunders of the Safavid kings⁷³.



Figure 93. Buildings belonging to the Russian authorities near the site, 1914

⁶⁸ Idem, p117

⁶⁹ Le strange, 1998, pp402-403

⁷⁰ Golestan consulting engineers, 1994, feasibility studies of the plan of Gunbad-e Qābus (V1, the natural environment), p120

⁷¹ Goli, Aminollah, 1987,p65

⁷² Stebnitzky: Colonel Stebnitzky s journey in central and southern Turkomania , Country of YURKOMANS ,Oguz press, P.69

⁷³Pigulevskaia, Nina Viktorovna et al, Ancient Persia, tr. Karim Keshavarz, Payam Publications, Tehran, 1975

During the rule of the Qajars, *Astar Abad* was one of the famous and commercially important towns of the district. Seemingly, it was when the state of *Astar Abad* replaced *Jorjan*.

In 1880, after the collapse of *Goog teppeh*, the Russians moved forth in Turkistan, after then completely conquered Turkmenistan, and Iran claimed those lands, it was decided that the borders were marked in direct negotiations between the two countries⁷⁴. Ultimately, they signed a contract known as *Akhal- Khorassan* on December 21, 1881, which marked the borders of both countries⁷⁵, but this caused a lot of difficulties both for the governments and for the Turkmens. Being divided into two groups of settled and nomadic, the Turkmens would constantly move from one side of the border to another⁷⁶.

In 1882, the Russian consulate established a base on top of Qābus hill known as the Commission⁷⁷, aiming at controlling the customs and at making the area secure.

In 1908, Russians developed their activities in Gonbad-e Kāvus, and constructed a very large building⁷⁸.

After the Commission was deployed, the area became more secure and the trade started to thrive. At this time, some merchants of *Qan Yuqmaz*, *Qowjaq*, and *Ja'far Bai* Turkmens were trading in the area⁷⁹. Some merchants from *Astar Abad* also worked there⁸⁰.

After the revolution of October 1917 in Russia, the Russians gradually left Gonbad-e Kāvus and the area became insecure again. In April 1918, some 1000 mounted warriors attacked Gonbad-e Kāvus, looted the belongings and the merchandise of the Commission, and besieged some 200 traders. After they were temporarily defeated, all the citizens were evacuated⁸¹.

1924 is of importance for this area in more than one way. It was the time when the Russian troops had stabilized their condition after the end of WWI, and were trying to gain control on their border areas and on their neighboring states. Thus, the trips of Turkmen nomads was limited or barred. Also, *Turkmen Sahra* was conquered by Reza Khan's troops who had headed for the area from *Rasht*, *Astar Abad*, and *Khorassan*, and finally met in Gonbad-e Kāvus⁸². After this event, which is known as the

⁷⁴ Bartol'd, tr. Hamze Sardavar, 1972

⁷⁵ Michell ., 1977, p.181-185

⁷⁶ Napier., 1971, p.67

⁷⁷ Ahangari, 2000, No2, p10

⁷⁸ Maqsoodloo, 1984, v2, 1917-1924, p495

⁷⁹ Ahangari, , 2000, No2, 2000, p10

⁸⁰ Maqsoodloo, Hussein Ali, 1984, p495

⁸¹ Ahangari, 2000, 0011-12

⁸² Mo'ini, 1965, pp75-76

Conquest of *Sahra*, a new town was established in the current location of Gonbad-e Kāvus which was then home to some Turkmens and fewer non- Turkmens. The new town was designed by the Germans, and was named Gonbad-e Kāvus because of the tower⁸³.

There are two points to be mentioned about the modern day town: the first one is the forced settlement of Turkmen nomads, and the forced movement of some Turkmens to Gonbad-e Kāvus from the areas around, which resulted in the expansion of the town, and the second one was establishment of agriculture in the town which brought about issues and difficulties, and deeply influenced the town⁸⁴.

⁸³ Yaquti, 2000, pp27-28

⁸⁴ Gorgani, 1970,

Special development phase in Gonbad-e Kāvus in the past 80 years

The original cores of the town before it was redesigned were as follows:

- a. Present-day *Manuchehri* Street, which was higher than the surrounding areas, and therefore would not be flooded.
- b. Another one was the neighborhood founded by the *Atabais* and the *Qowjaqs*, between the present-day *Shari'ti* and *Be'sat*, where there was also a mosque, who's Imam was a mullah named *Darya Akhund*. It has now become the *Jame'* mosque.
- c. *Tekkes* had made another neighborhood to the west of the tower, which corresponds to their neighborhood today.
- d. The *Khowjehs* and *Garis* were settled in *Chaii Booi*, and the *Bahlakehs* in *Babol Bahlakeh*⁸⁵.

The zoning was from the year 1925, and was kept the same way afterwards. After the conquest of *Sahra*, the redesign was carried out by the German. The grid designed is located between *Sa'di* Street to the west, *Manuchehri* to the north, *Golshan* to the south, and *Hafez* to the east.



Figure 94. Gonbad-e Qābus from a distance of 150 meters in 1316 (1937)

In the years after, immigrant Turks from the former USSR moved and started to live in *Daraii* and *Mihan* streets. A great number of *Azerbaijani* Turks and Kurds of *Sanandaj* also moved to present-day's *Valiasr* Street.

⁸⁵ Ahangari, 79, p10-12

The *Shahrudi's* who once worked in the bazaar of Gonbad-e Kāvus, moved to Gonbad-e Kāvus, too, and settled on *Arvand Rud* and *Shari'ari* streets⁸⁶. Some *Ja'far Bai* Turkmens also moved to the present *Akhund Abad* and made society rather distant from the town.

In 1951, the south part of *Golshan*, which was formerly a graveyard, was announced abandoned, and some construction works were done there in 1956. A college (today's *Tarbiat Mo'alleem* college), in 1951, Iran movie theatre in 1956, Sina high school in 1959, and *Chit-e Behshahr* outlet in 1961 were built there. Also, the Karmandan complex was built during the same years to the south of west *Shohada*⁸⁷. *Kazakhs* who had fled the USSR also settled in *Chaii Booii* during these years.

Some people from Khorassan, and from *Bojnoord* in particular moved to Gonbad-e Kāvus, and settled in *Bahar* and *Alavi* neighborhoods. Then, more people came to establish in *Turk Abad* and Azerbaijan Street. Industrial agriculture paved the way for the establishment of factories around the town, and lead to the expansion of the town eastwards and southwards.

A lot of *Sistanis* left their homes because of the draught, of whom 80% moved to Gonbad-e Kāvus in the '60s to establish Golestan neighborhood, which gravely influenced Gonbad-e Kāvus⁸⁸. They also formed the deprived neighborhood of *Seyyed Abad* in the northwest.

Other neighborhoods such as *Arash* Street and *Farhangian* and *Azadegan* residential complexes are the results of construction works of housing cooperatives. *Ta'min Ejtema'i* complex and *Kooye Andishe* Ave were formed in the past decade. Also, as the town has expanded, many old neighborhoods and villages have merged into it. *Farmandari* complex in the east, *Yusef Abad* and *Noor Khan Abad* in the north developed outside the town limits. Also, *Gadam Abad* village is influenced by the northwest of the town, and has developed a lot. The flow of Afghans migrants has also developed other neighborhoods in *Badalje*, *Chaii Booii*, and *Imamzadeh*, now known as *Afghan Abad*⁸⁹.

⁸⁶ Yaquti, 79, p10-12

⁸⁷ Design and Creation: 64, p107

⁸⁸ Kalteh, 70-71, pp 229-230

⁸⁹ Nazari, 76, pp 29-33



Figure 95 - View of Gonbad-e Qābus in the 50s

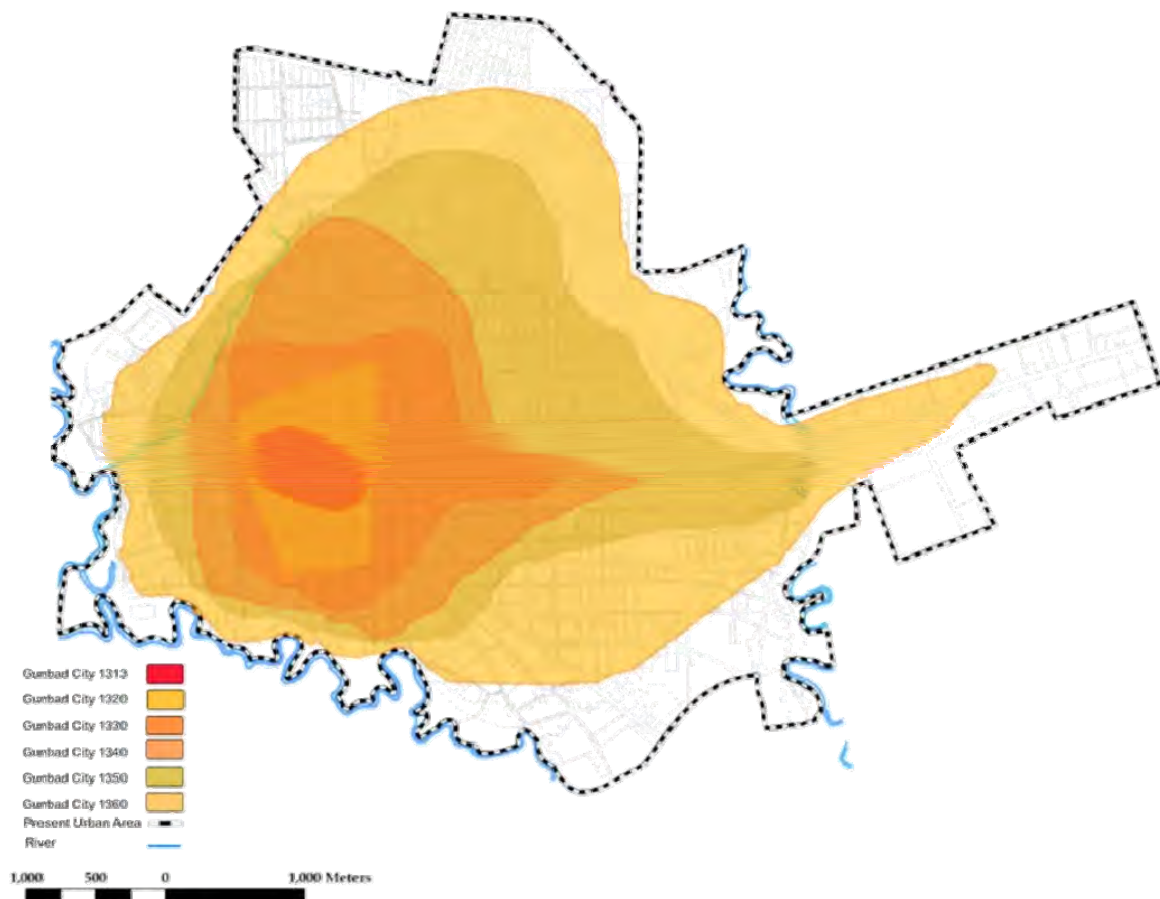


Figure 96 - Gonbad-e Kāvus City development

3

Justification for Inscription

3. Justification for Inscription

3. a. Criteria under which inscription is proposed (justification for inscription under these criteria.)

Criterion (i): represent a masterpiece of human creative genius;

Gonbad-e Qābus being one of the most significant structures of the early Islamic centuries and also the first example of monumental tomb structures that employs a double dome construction with an outer conical covering and inner hemispherical one, is a masterpiece and an outstanding achievement in the early Islamic architecture which extensively contributed to the development of Islamic architecture. It is also considered to be among the best proportioned and most representative brick-made tomb towers of the early Islamic centuries which with its specific geometry, particularly the change from circle to the 10 flanged form, not only contributed immensely to the knowledge of the structural stability of tomb towers but also aesthetically is exceptional. The inscriptions of the tomb with their *Kufic* calligraphy first spotted in the *Razi* style in the Ziyarids period, is another outstanding feature, which influenced greatly the following historic periods.

Criterion (ii): exhibit an important interchange of human values, over a span of time or within a cultural area of the world, on developments in architecture or technology, monumental arts, town planning or landscape design;

The creative architecture of Gonbad-e Qābus played a significant role in the development of the architecture, technology and monumental aspects of the tomb towers of the Iranian territory, Anatoly and Central Asia. Gonbad-e Qābus was a prototype for the development of the construction of tomb towers, becoming a significant reference in the history of Islamic architecture. Gonbad-e Qābus being the place of architectural cultural exchange between the Central Asian nomads and the ancient Iranian civilisation could be considered as a common heritage between the Turks and Iranians and a significant point in the beginning of the Islamic era.

Criterion (iii): bear a unique or at least exceptional testimony to a cultural tradition or to a civilization which is living or which has disappeared;

Gonbad-e Qābus represents exceptional evidence to the power and quality of the Ziyarids civilization which dominated a major part of the region during the 10th and 11th centuries. The tower also stands for the cultural tradition as well as funerary building technology of the time epitomizing the paradisaic quality of the ascension toward the heavens, a tradition which was then widely expanded throughout the region. The significance of Gonbad-e Qābus amongst the early Islamic tomb towers is not merely due to its relation with a Ziyarids Emir but also is owed to its attribution to one of the most renown literate writers of the so-called *Khorasan* school of writing in the 4th century AH and creation of *Qābusnameh* (a new method in story telling), considered to be among the most important sources of *Farsi-e dari* (*dari* Persian) in the world, as a valuable intangible heritage of mankind. Therefore Gonbad-e Qābus is in fact the starting point in a regional cultural tradition in which tombs are built for the writers and literates, a tradition which is continued to the present time.

Criterion (iv): be an outstanding example of a type of building, architectural or technological ensemble or landscape which illustrates (a) significant stage(s) in human history;

Gonbad-e Qābus is an outstanding example of Islamic architecture in the region which played a significant role, illustrating an exceptional case in further dissemination of the concept and architecture of the tomb towers in Iran, Anatoly, and Central Asia. Its innovative structural design supporting the stability of this over one thousand years old brick-made monument and initiating a specific building technology to erect a 52 meters height tower with 9 meters deep brick-made foundation for the first time in history, have made Gonbad-e Qābus an exception among the similar towers in the world.

3. b. Proposed Statement of Outstanding Universal Value

Gonbad-e Qābus, located 3 km north of the ancient city of *Jorjan*, the historic power base of the Ziyarids dynasty, and within the modern town of Gonbad-e Kavus, Golestan Province, Iran, is an outstanding example of Islamic architecture, designed and built on the order and during the reign of *Shams ul-Ma'ali, Amir Qābus Ibn voshmgir* in the year 397 the lunar Hegira , and the year 375 the solar Hegira, 1006 AD which turned to be the tallest pure brick made tower in the world.¹ The tower was built as the mausoleum of its founder, following the tradition of rulers and kings showing the arts, magnificence, and authority in a monumental and commemorative structure, which brings to mind the greatness of the reign of its founder. The construction of this commemorative tomb tower during the lifetime of its founder would not only remind us of the true concept and meaning of the monument at the time but also is an exception which occurs in this period.

As mentioned before the significance of Gonbad-e Qābus is not only because of its relation to the a Ziyarids ruler but more than that because of its association with one of the most renown literate and writers of the so-called *Khorasan* school of writing of the 4th century AH. As indicated in previous sections *Shams ul-Ma'ali, Amir Qabus Ibn Voshmgir* wrote the *Qābusnameh* for his son *Gilanshah* so that after taking the power he could benefit from its guidance and advices to be able to rule better. Of course this never materialized but the book remained as a valuable treasure adding to the wealth of Persian literatures which is, even today, among the most important references and sources of the *Dari* Persian language and also the peculiarities and advantages of the Iranian identity.

In fact Gorgan is the exchanging location of the tangible and intangible heritage of the Iranian culture and in this respect Gonbad-e Qābus, is an exceptional example of the Iranian as well as Central Asian architecture, illustrating the intangible culture of the people of the time. Furthermore Gonbad-e Qābus being the place of architectural cultural exchange between the Central Asian nomads and the ancient Iranian civilization could be considered as a common heritage between the Turks and Iranians and a significant point in the beginning of the Islamic era.

1 Arthur U. Pope and Ackerman Phyllis, 1964, p:1184 ; Hillenbrand, 1999, p:253

The tower considered to be a magnificent masterpiece of the Islamic architecture from the 4th Century AH, is an enormous decagon building with a conic roof, which forms the golden ratio that Phi equals 1.618. The decagon with its 3 meter-thick wall, divided into 10 sides, has a diameter of 17 m. The Tower was built on such a scientific and architectural design that at the front of the Tower, at an external circle, one can hear one's echo.

Gonbad-e Qābus bearing an age of over 1000 years is the oldest and first example of a monumental tomb structure surviving until today that employs a double-shelled dome construction with an outer conical roof covering an inner hemispherical one². Although it is the oldest but in terms of the height and other architectural characteristics and structure it is considered to be the tallest and most complete among its types. The tower is still an imposing figure in the Gorgan landscape and is visible from miles around.

One of the most outstanding features of this structure is its conical roof which is made with extreme mastery to further highlight the significance and magnificence of the tower in so much as one can claim that it is the conical dome that perfects the tower adding to its 37-meter height.

Another most notable and exceptional feature is its over 9 meters deep brick foundation built to erect a tower of more than 53 meters height, which has guaranteed the stability of the structure against extreme natural disasters such as destructive earthquakes. Throughout long centuries passed the tower has thus had very trivial declination southwards.

The builders have used an alteration of one row of complete bricks and one of quarters on top of each side, and continued the pattern to the body of the cone, which has resulted in the best type of brick arrangement of the sort both horizontally and vertically. Thus, extreme mastery is employed in the building of the tower as there are 5 to 6 bricks of 25×25 and 6×6 laid in the row right under the neck which are kept together by plaster mortar, and then fringed bricks are loaded over them.

Another exceptional feature influencing extensively the Islamic arts in the following periods are the prototypes of the inscriptions of Gonbad-e Qābus with their *Kufic* calligraphy first spotted in the Razi style of architecture under the Ziyarids. The calligraphy style is very simple and legible, which is used mainly in the inscriptions of

² Arthur U. Pope and Ackerman Phyllis, 1964, p:1184 ; Hillenbrand, 1999, p:407

buildings, and that is where the name *Banaii* [related to buildings] Kufic (*Mo'aqeli*)³ comes from.

Gonbad-e Qābus not only served as an exceptional prototype in expansion of tomb tower architecture in the region but also show the first stage in breaking from the continuous circle and the beginning of flanged bodies. Special kind of fringed bricks locally known as rooted-brick (*ajor-e rishedar*) were used for the finishing of the final parts of the conical roof. The same technique was later used in another tomb tower in Mazandaran (Radkan Tower). Undoubtedly this tower became a model for all the commemorative towers and *milles* built afterward along the east-west route, particularly in Elborz fringes and as it is explained in the section on the comparative studies although it is considered to be the starting point in the construction of the brick-made tomb towers with conical roof in the world but at the same time and still remains the most complete and attractive of them specially in terms of technological and architectural concepts and aspects.

³ *Mo'aqeli* is writing school that both its *savad* and *baiaz* are decipherable, that is to say its darkish is read whitish something else

3. c. Comparative analysis (including state of conservation of similar properties)

3.c.1 Tomb Tower inside IRAN

3.c.1 -1 Introduction

It is generally accepted that after the much celebrated Gonbad-e Qābus was constructed in northeast of Iran in 1006 AD, on the orders of the Ziyarid *Amir Shams ol-Ma'āli Qabus Ibn Voshmgir* 3 km north of the ancient city of *Jorjan*, from where the Ziyarid dynasty ruled, there appeared so many other tomb towers in other parts of Mazandaran province, other areas of Iran, and Central Asia to Anatolia, where Turks moved and ruled under the devotion of Islam. As mentioned before, construction of tomb towers within the Iranian territory began after the advent of Islam, although there are much speculation and theories relating these structures to the pre- Islamic times in Iran when the so-called *Char taqi*(four-domed) buildings were built. Clearly the early shrines during the Islamic era were also the four-sided domed structures but during the later parts of the 10th Century AD the recognition of the tomb towers prevailed over these structures. The preference of the tower to the four-cornered buildings went so far that we can witness different important types of tomb towers between the years 1000 to 1200 AD. A major part of these tombs were built for the emirs, army commanders, governors, and so like. In addition, a few family members of the Caspian coasts dynasties also built their own tomb towers.

Most of these buildings are made of high - quality baked bricks assembled in variety of decorative patterns usually in the shape of fixed spores and inscriptive bands placed either over the sole entrance door of the tower or below the dome where occasionally the niches and other decorative elements enhance their splendor. They are normally covered with polyhedral or conical domes.



Figure 1- General view of Gonbad-e Qābus

Simplicity in their external facades and emphasis on the alone slender *mille* (pole) is the feature that enhances their visual impact on the visitors and in fact the visual error intensifies their height influence. Although most of these early towers only bear heights of 15 to 20 meters but they seem to be taller. Among them Gonbad-e Qābus and *Toqrol* tower in *Ray* are actually very tall buildings. However even in these two towering monuments the architects have emphasized on their tallness by adding triangular parallel flanges or columns wrapping around the towers' circumferences and ascending from the plinth until the cornice below the domes which in their turns intensify the heights with their frontwards approach. During the Ilkhanids not much was added to the development and existing tradition although the tomb towers of this period reflect the current methods of the time. Similar to the its preceding period and as the distinguished flanged towers of Bastam, Varamin, and east Radkan show the general trend was still toward slender proportions while at later times this school of work was not the dominant approach and instead the more massive octagonal bodies with their sixteen sides bands covered by polygonal domes became more in use.

We can rarely find tomb towers during the Timurids era and in fact these kind of buildings were no longer popular then as they were previously.

Considering that Gonbad-e Qābus falls within the group of circular or transformed circular planned towers (based on the classification of the Iranian tomb towers in section 2.a.4.2), this particular feature was selected as the base for the comparative studies between Gonbad-e Qābus and a number of other Iranian, Anatolian and Central Asian tomb towers. What follows is the detailed explanations of the comparative analysis:

3.c.1-2 Gonbad-e Qābus

Variant Names	Gonbad-e Kavus, Tomb Tower of Qābus, Gonbad-e Qābus, Qābus Gunbad
Location	Gorgan, Iran
Date	1006
Style/Period	Ziyarids
Century	11 th century A.D
Building Type	Funerary
Building Usage	Tomb



A flanged, cylindrical, slightly tapering tower with a conical roof on a small hill, built as the tomb of *Shams al-Ma'ali Qābus*. Qābus was an astrologer, poet, calligrapher, and patron of numerous scholars and writers, including Ibn-e Sina. He reigned in Gorgan until his assassination in 1012, five years after initiation of the tomb's construction. There is no access to the roof, which has a small opening in the eastern side, and no underground chamber. Reports suggest that Qābus', in a glass coffin, was suspended within the dome, the morning sun striking his body through the eastern opening. The interior is undecorated and without fenestrated. On the exterior face, between the ten flanges, are two rows of inscriptions in brick-formed *Kufic*.⁴



Figure 2


location	Gonbad-e Qābus, Gorgan Province,, Iran
Map Name	Floor plan of tomb tower
Source	Golestan Cultural Heritage, Handicrafts and Tourism Organization

⁴ Pope, A. U. and Ackerman, P. eds. 'A Survey of Persian Art', (Tehran: Soroush Press, 1977) 967-974



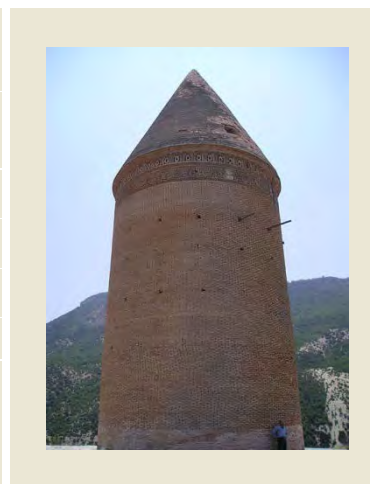
Figure 3

location	Gonbad-e Qābus, Gorgan Province,Iran
Photograph Date	2010
Photographer	Elham shojaei
Source	Golestan Cultural Heritage, Handicrafts and Tourism Organization
Caption	Exterior view from the north, with entrance

Tomb Tower	Floor plan	Height	Diameter	Material	Date
Gonbad-e Qābus		52.844m	17.48 m	Brick	4 th Century A.H 1006 A.D

3.c.1-3 Radkan- West Tomb Tower

Variant Names	Radkan - West
Location	On the summit of a small hill to the west of the village of Radkan, Radkan, Golestan Province, Iran
Date	1016-1020
Style/Period	Il-Khanid
Century	11 th Century A.D , 5 th Century A.H
Building Type	Funerary
Building Usage	Tomb



Built at the summit of a hill, this tomb tower has a tall cylindrical chamber crowned with a steep conical roof that covers an inner hemispherical dome. It was built in 1016 for *Abu Ja'far Mohammad Ibn Vandaryan Bavandi*, identified as a military leader of the Tabarestan clan. It is among the earliest buildings to use a double-dome to crown a chamber.

The exterior of the chamber is unadorned, except for terracotta bands below the dome. A band of tulips separated by miniature brackets sits above a *Kufic* epigraphic band that gives the name of the tomb's owner, and date of construction. *Ahmad Ibn Omar* is identified in the same inscription as the builder of the tomb. Between these two wide bands and below the epigraphic band, are two narrow bands composed of a chain pattern. An inscriptive plaque had originally marked the top of the arched entryway.⁵



Figure 4

location	Radkan- West Tomb Tower, Golestan Province, Iran
Map Name	Floor plan of tomb tower
Source	Golestan Cultural Heritage, Handicrafts and Tourism Organization

⁵ Pope, Arthur U. and Phyllis Ackerman (ed). 1964. *A Survey of Persian Art from Prehistoric Times to the Present*. London, New York: Oxford University Press, vol. 3.

Uqabi, Muhammad Mahdi (ed.) 1997 (1376 h. g.). *Dayirat al-ma arif-i binaha-yi tarikhi-i Iran dar dawrah-i Islami*. Tehran: Awzah i-i Hunari-i Sazmani-i Tablighat-i Islami, 320-322, 380.



Figure 5

location	Radkan- West Tomb Tower, Golestan Province, Iran
Photograph Date	Unknown
Photographer	Ernst Herzfeld
Source	Golestan Cultural Heritage, Handicrafts and Tourism Organization
Caption	Exterior view of tomb tower



Figure 6



location	Radkan- West Tomb Tower, Golestan Province, Iran
Photograph Date	2003
Photographer	Saeed Soleimani
Source	Golestan Cultural Heritage, Handicrafts and Tourism Organization
Caption	Exterior view looking up at the tomb, with stairs leading up to it



Figure 7

location	Radkan- West Tomb Tower, Golestan Province, Iran
Photograph Date	2003
Photographer	Saeed Soleimani
Source	Golestan Cultural Heritage, Handicrafts and Tourism Organization
Caption	Exterior view showing decorative bands below conical dome

- Comparison of Radkan- West Tomb Tower with Gonbad-e Qābus

Tomb Tower	Floor plan	Height	Diameter	Material	Dte
Gonbad-e Qābus		52.844m	17.415 m	Brick	4 th Century A.H 1006 A.D
Radkan- West		24.20 m	9.48 m	Brick	5 th Century A.H

3.c.1-4 Lajim Tomb Tower

Variant Names	Burj-I Lajim, Burj-e Lajim, Burj Lajim
Location	Lajim (Close to the city of Qa'em Shahr), Mazandaran Province, Iran
Date	1022-1023 A.D
Style/Period	Bawandid
Century	11 th Century A.D, 5 th Century A.H
Building Type	Funerary
Building Usage	Tomb



This tomb tower has a cylindrical chamber crowned by a double dome; the outer dome has not survived. It is highly probable that this dome was conical, like in most tomb towers of the region and of the same period. The entrance to the burial chamber faces east.

The decorative features of the exterior are concentrated below the dome at the entrance. Immediately below the dome is a row of shallow arched niches. Separated from it with a narrow band of geometric patterns are two inscriptive bands. The upper one is written in Pahlavi (language spoken by the Sassanids) and the lower is in Arabic, written in the *Kufic* style. The content of the Pahlavi inscription, which is largely damaged, has not yet been deciphered, whereas the Arabic inscription contains the name of the person buried in the chamber: *Abu'l Favaris Shahriyar Ibn Abbas Ibn Shahriyar*. It is made of brick on a stucco background.

The entryway is crowned by a pointed arch and set inside a shallow niche with a second pointed arch. Its tympanum is adorned with a brick honeycomb pattern. The tower has a simple cylindrical interior lit only by the entrance.⁶

⁶ Pope, Arthur U. and Phyllis Ackerman (ed). 1964. A Survey of Persian Art from Prehistoric Times to the Present. London, New York: Oxford University Press, vol. 3.

Uqabi, Muhammad Mahdi (ed). 1997 (1376 h. g.). Dayirat al-ma arif-i binaha-yi tarikhi-i Iran dar dawrah-i Islami. Tehran: Awzah i-i Hunari-i Sazmani-i Tablighat-i Islami, 392-393.



Figure 8

location	Lajim Tomb Tower, Mazandaran Province, Iran
Map Name	Floor plan of tomb tower
Source	Iranian Architecture of The Islamic Period, Ed:M.Y Kiyani



Figure 9

location	Lajim Tomb Tower, Mazandaran Province, Iran
Photograph Date	2003
Photographer	Saeed Soleimani
Source	Mazandaran Cultural Heritage, Handicrafts and Tourism Organization
Caption	Exterior view from dirt path



Figure 10

location	Lajim Tomb Tower, Mazandaran Province, Iran
Photograph Date	2003
Photographer	Saeed Soleimani
Source	Mazandaran Cultural Heritage, Handicrafts and Tourism Organization
Caption	Exterior view from west, with scaffolding set up for restoration

Figure 10



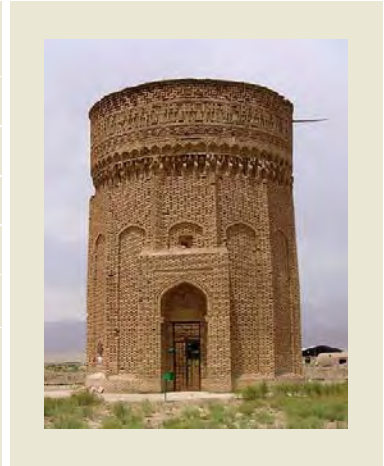
location	Lajim Tomb Tower, Mazandaran Province, Iran
Photograph Date	2003
Photographer	Saeed Soleimani
Source	Mazandaran Cultural Heritage, Handicrafts and Tourism Organization
Caption	Exterior view showing decorative bands and dome, with scaffolding set up for restoration

- Comparison of Lajim Tomb Tower with Gonbad-e Qābus Tomb Tower

Tomb Tower	Floor plan	Height	Diameter	Material	Date
Gonbad-e Qābus		52.844m	17.415 m	Brick	4 th Century A.H 1006 A.D
Lajim		18 m	7.279 m	Brick	5 th Century A.H 1022-1023 A.D

3.c.1 -5 Mehmandust Tomb Tower

Variant Names	Burj Mehmandust, Mehmandust Tomb Tower, Burj-e Mehmandust
Location	Damghan, Iran
Date	1097 A.D
Style/Period	Seljuk
Century	11 th Century A.D , 5 th Century A.H
Building Type	Funerary
Building Usage	Tomb



The date for the construction of the tower, as inscribed on the epigraphic band around the tower, is 1097. The tower has a cylindrical chamber with a slightly protruding entrance portal. The roof is now missing but is thought to have been conical in shape. The entrance is located on the northern side of the chamber.

The chamber, which is placed on a shallow base, has been divided into two distinct decorative sections on the exterior. The lower part of chamber consists of twelve equal panels that have been separated by triangular pier buttresses. Each panel incorporates a shallow niche with a pointed arch.

The upper part of the chamber has five different decorative bands, all made of brick. The lowest band consists of a series of projecting brackets with curvilinear profile. Above is a band of deep niches topped by a band of rectangles. A band of *Kufic* inscription above contains the name of the patron, *Amir Abu Ja'far Muhammad Ibn Ali Mehmandust*, and the date of construction. The elongated *Kufic* letters are stylized with knotted motifs arranged symmetrically around them. The uppermost band consists of a series of abstract Swastika and L patterns resembling *Kufic* writing.⁷

⁷ Hoag, John D. 1987. *Islamic Architecture*. New York: Rizzoli.

Hatim, Ghulam Ali. 2000. *Mimari-i Islami-i Iran dar dawrah-i Saljuqian*. Tehran: Muassasah-i Intisharat-i Jihad-i Danishgahi, 121-125.

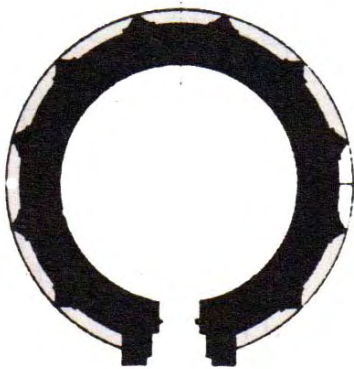


Figure 11

location	Mehmandust Tomb Tower, Damghan, Iran
Map Name	Floor plan of tomb tower
Source	Iranian Architecture of The Islamic Period, M.Y Kiyani



Figure 12

location	Mehmandust Tomb Tower, Damghan, Iran
Photograph Date	2003
Photographer	Unknown
Source	Semnan Cultural Heritage, Handicrafts and Tourism Organization
Caption	Exterior view from south, with the entrance



Figure 13

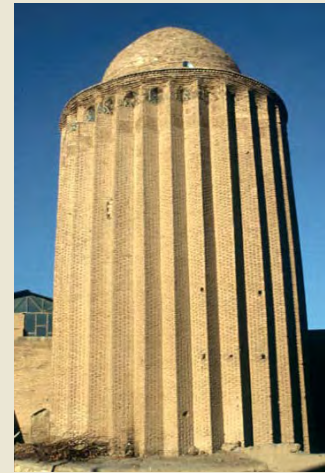
location	Mehmandust Tomb Tower, Damghan, Iran
Photograph Date	2003
Photographer	Unknown
Source	Semnan Cultural Heritage, Handicrafts and Tourism Organization
Caption	View of tomb from asphalt road

- Comparison of Mehmandust Tomb Tower with Gonbad-e Qābus

Tomb Tower	Floor plan	Height	Diameter	Material	Date
Gonbad-e Qābus		52.844m	17.30 m	Brick	4 th Century A.H 1006 A.D
Mehmandust		6.30 m (dome less)	9.30 m	Brick	5 th Century A.H 1097 A.D

3.c.1-6 Kashaneh Tomb Tower

Variant Names	Kashana, Kashanehh, Tomb Tower at Bastam, Tomb Tower adjoining Friday Mosque
Location	Bastam, Iran
Date	1313 A.D
Style/Period	Il-Khanid
Century	14 th Century A.D
Building Type	Funerary
Building Usage	Tomb



Located on the outskirts of the village are two clusters of structures that were perhaps originally joined as one group. The flanged tomb tower dedicated to the infant son of Oljaytu, and the congregational mosque to which it is attached, comprise the smaller grouping of structures in Bastam, just south of the larger shrine complex.

The exterior is articulated with 25 flanges and the interior is a decagon. A staircase runs between the walls of the outer flanges and the inner facets. The tomb is sited directly behind the *qibla* wall of the mosque, directly before all who prayed there. Blair and Bloom note that siting a tomb in this way was 'a new development that may also be seen in Mamluk architecture'. The tomb is entered from the interior of the mosque through an entrance passage that flanks the *mihrab*.

The flanges of the tomb tower bear comparison to the earlier flanged tower of 'Ala ad-din at Varamin (688/1289), which is in better condition, and which in turn is modeled after the tower of Rayy (534/1140). The flanges terminate with two encircling bands of blue faience *Kufic* inscription on a background of carved stucco. Remains of these inscriptions identify *Muhammad Ibn al-Husayn*, the engineer and stucco-worker responsible for much of the two groups of structures at Bastam.⁸

⁸ Blair, Sheila S. and Jonathan M. Bloom. 1994. *The Art and Architecture of Islam*. New Haven: Yale University Press.
 Pope, Arthur Upham. "The Fourteenth Century". In *A Survey of Persian Art* (Arthur Upham Pope and Phyllis Ackerman, eds.). Tehran: Soroush Press, 1052-1102.
 Wilber, Donald N. 1969. *The Architecture of Islamic Iran: The Il-Khanid Period*. New York: Greenwood Press.

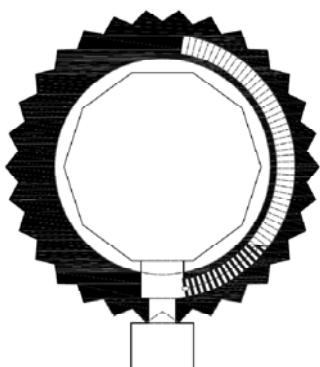


Figure 14

location	Kashaneh Tomb Tower, Bastam, Iran
Map Name	Floor plan of tomb tower
Source	Semnan Cultural Heritage, Handicrafts and Tourism Organization

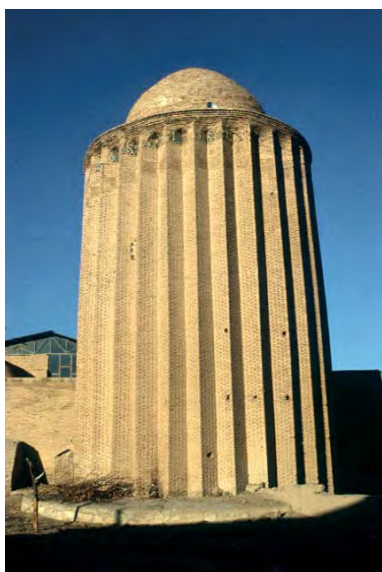


Figure 15

location	Kashaneh Tomb Tower, Bastam, Iran
Photograph Date	2001
Photographer	Unknown
Source	Semnan Cultural Heritage, Handicrafts and Tourism Organization
Caption	Exterior view, after restoration



Figure 16



location	Kashaneh Tomb Tower, Bastam, Iran
Photograph Date	ca. 1960
Photographer	Josephine Powell
Source	Semnan Cultural Heritage, Handicrafts and Tourism Organization
Caption	Upper shaft of tomb, with precinct wall in the foreground



location	Kashaneh Tomb Tower, Bastam, Iran
Photograph Date	1972
Photographer	Unknown
Source	Semnan Cultural Heritage, Handicrafts and Tourism Organization
Caption	View looking south at the alley connecting the Shahrokhi madrasah to the entrance of Friday Mosque of Bastam with the tomb tower seen in background, looking south

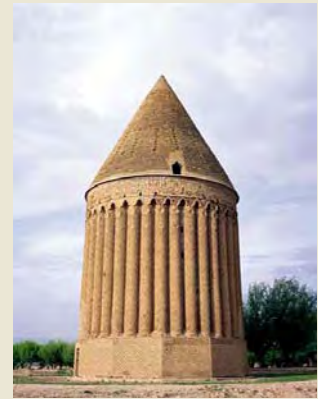
Figure 17

- Comparison of Kashaneh Tomb Tower with Gonbad-e Qābus

Tomb Tower	Floor plan	Height	Diameter	Material	Date
Gonbad-e Qābus		52.844m	17.30 m	Brick	4 th Century A.H 1006 A.D
Kashaneh		20 m	14.420 m	Brick	7th-8th Century A.D 1313 A.D

3.c.1-7 Radkan- East Tomb Tower

Variant Names	Mil-i Radkan East, Mil i Radkan, Mil-i-Radkan
Location	Radkan, Khorasan Province, Iran
Date	1205-6 or 1280-1300 A.D
Style/Period	Il-Khanid
Century	13 th Century A.D
Building Type	Funerary
Building Usage	Tomb



The eastern of two tombs near Radkan, the Mil-i Radkan is located eighty kilometers to the north of Mashhad. Based on epigraphic remnants, Ernst Herzfeld has argued that the tomb tower belongs to *Amir Arghun Khan*, a residence of Radkan who died in 1274. Due to damages to the exterior fabric of the structure and the loss of epigraphic evidence, an absolute dating of the tomb tower is impossible. Stylistic clues combined with evidence from existing parts of the inscriptive frieze date this monument between 1280 and 1300.

The tomb is cylindrical, with an octagonal burial chamber crowned by a conical dome. It is entered from two axial entrances facing southeast and northwest. The thirty-six engaged columns enveloping its exterior between the base and the dome give the tomb a wavy outline. A spiraling stair encased within the monument's walls gives access to the inner dome, of which only the base remains. The double dome construction of the roof has a long history in the tomb towers built in Iran during the Seljuks period (roughly 1050-1150) and before. Gonbad-e Qābus in Gorgan is the first example of a monumental tomb structure that employs a double dome construction with an outer conical roof covering an inner hemispherical one.

A variety of brick patterns are used with terracotta and glazed bricks to decorate the exterior. The base of the tomb is made of two horizontal courses of brick alternating with two shorter verticals. A herringbone brick weave mirrored about the centerline decorates the engaged columns. The individual columns are joined with miniature trefoil arches at the top, above which a frieze of *Kufic* is inscriptions that give the date of construction and the name of the tomb owner. The use of glazed terracotta in the inscriptive frieze as well as in areas within the trefoil arches, locates this monument in the later phases of Seljuk reign in Iran. The interior of the chamber is plain except for brick variations on the transition zone of the dome. The large holes in the chamber

Walls, the stripped base of the monument and the missing top of the conical roof that are seen in earlier photographs have all been restored.⁹



Figure 18

location	Radkan- East Tomb Tower, Khorasan Province, Iran
Map Name	Floor plan of tomb tower
Source	Semnan Cultural Heritage, Handicrafts and Tourism Organization

Figure 19



location	Radkan- East Tomb Tower
Photograph Date	Unknown
Photographer	Ernst Herzfeld
Source	A survey of Persian Art, from Prehistoric Times to the Present, Pope, Arthur
Caption	Exterior view, prior to restoration


Figure 20




location	Radkan- East Tomb Tower, Khorasan Province, Iran
Photograph Date	2003
Photographer	Manoochehr Arian
Source	www.jamejamshid.com
Caption	The first sunset in the first day of summer In the tower of Radkan (or the first day of TIR month). Sunset find summer solstice day

⁹ Uqabi, Muhammad Mahdi (ed.) 1997. Dayirat al-ma arif-i binaha-yi tarikh-i Iran dar dawrah-i Islami. Tehran: Awzah i-i Hunari-i Sazmani-i Tablighat-i Islami. 232-233.
Wilber, Donald Newton. 1969. The Architecture of Islamic Iran: The Il Khanid Period. New York: Greenwood Press. 116.

- Comparison of Radkan-East Tomb Tower with Gonbad-e Qābus

Tomb Tower	Floor plan	Height	Diameter	Material	Date
Gonbad-e Qābus		52.844m	17.30 m	Brick	4 th Century A.H 1006 A.D
Radkan- East		25 m	13.33 m	Brick	6 th Century A.H 1205-6 or 1280-1300 A.D

3.c.1 -8 Ala ad-Din Tomb Tower

Variant Names	Ala ad-Din Tomb Tower, Tomb Tower of Alaaddin, Allah ad Din Tomb, Mausoleum of 'Ala al-Din, Alaeddin Turbe in Varamin	
Location	Varamin, Iran	
Date	1276-1289 A.D	
Style/Period	Il-Khanid	
Century	13 th Century A.D , 7 th Century A.H	
Building Type	Funerary	
Building Usage	Tomb, mausoleum	

The tomb tower of 'Ala ad-din, completed in 1289 under the Il Khanids, is located to the north of Varamin, a small town forty-two kilometers south of Tehran. It continues a well-established Iranian tradition of funerary architecture in the form of a tomb tower, its earliest precedent being the Seljuk monument Gonbad-e Qābus (1006). This type of mausoleum began as a tall cylinder with a canonical roof, marking, through sheer verticality, the grave of its patron (often a minor dynast, emir, or army commander). The tomb tower puts more emphasis on the exterior, as opposed to the interior, of the sacred space, in contrast to the domed square mausoleum, the other predominant type of mausoleum in Iran.

Thirty-two right-angled triangular flanges or columns wrap around the tower's circumference. Made of high-quality baked bricks assembled in a *hazarbaf* (decorative brickwork, literally meaning "thousand weaving") decorative pattern, the flanges ascend from the plinth until they meet the cornice that supports the canonical roof with corbelled groin arches. Between the upper end of the flanges and the small groin arches above them runs an inscription band paralleling the zigzag shape of the flanges. The cornice displays fine tile work alternating between unglazed and glazed terracotta in light blue. As with most tomb towers, the tomb tower of 'Ala ad-Din has a double-shell dome, canonical on the exterior and spherical on the inside, above the circular interior plan.

Recent restoration of the tomb tower has preserved the interior brick dado and floor, as well as addressing the rebuilding of the lower flanges, the canonical roof, and the restoration of the northern and southwest entrances. The main northern entrance is a semicircular arched portal embedded in a pointed arch niche whose walls merge into the flanges. The southwest portal comprises

two pointed arches, one on top of the other; both are plastered and filled with stalactites.

With its decorative work comprising glazed tile mosaic and bricks juxtaposed to a substantial quantity of unglazed brickwork, the tomb tower of 'Ala ad-din is an exemplary manifestation of the more austere tile work of the period¹⁰

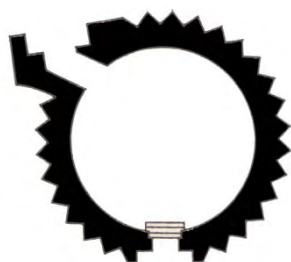


Figure 21

location	Ala ad-Din Tomb Tower, Varamin, Iran
Map Name	Floor plan of tomb tower
Source	Iranian Architecture of The Islamic Period, M.Y Kiyani



Figure 22

location	Ala ad-Din Tomb Tower, Varamin, Iran
Photograph Date	1933-34
Photographer	Robert Byron
Source	Golestan Cultural Heritage, Handicrafts and Tourism Organization
Caption	General view

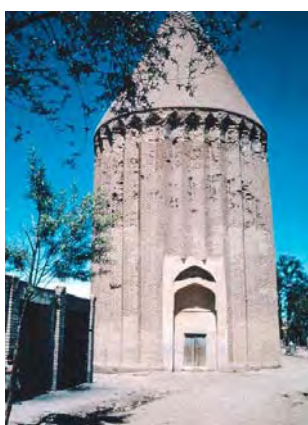


Figure 23

location	Ala ad-Din Tomb Tower, Varamin, Iran
Photograph Date	1951-1972
Photographer	Golestan Cultural Heritage, Handicrafts and Tourism Organization
Source	Golestan Cultural Heritage, Handicrafts and Tourism Organization
Caption	Exterior view, looking toward the entrance

¹⁰ Blair, Sheila S. and Jonathan M. Bloom. 1994. *The Art and Architecture of Islam*. New Haven: Yale University Press, 8.

Hillenbrand, Robert. 1999. *Islamic Architecture*. Edinburgh: Edinburgh University Press, 280-287.

Michell, George. 1978. *Architecture of the Islamic World: Its History and Social Meaning*. London: Thames and Hudson, 257.

Wilber, Donald N. 1969. *The Architecture of Islamic Iran: The Il-Khanid Period*. New York: Greenwood Press, 117-118.



location	Ala ad-Din Tomb Tower, Varamin, Iran
Photograph Date	2007
Photographer	Unknown
Source	Golestan Cultural Heritage, Handicrafts and Tourism Organization
Caption	Exterior view, after restoration

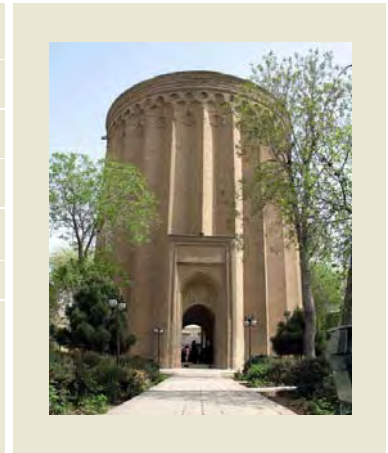
Figure 24

- Comparison of Ala al-din Tomb Tower with Gonbad-e Qābus

Tomb Tower	Floor plan	Height	Diameter	Material	Date
Gonbad-e Qābus		52.844m	17.415 m	Brick	4 th Century A.H 1006 A.D
Varamin(Ala ad-Din)		26m	12.66 m	Brick	7 th Century A.H 1276-1289 A.D

3.c.1 -9 Toqrol Tomb Tower

Variant Names	Tomb of ToqrolToqrol, Burj-i ToqrolToqroll, Burj ToqrolToqrol, Mausoleum of Toqrol,Tomb of Toqrol
Location	Rayy, 20 kilometers from the city of Tehran, Iran
Date	1139-1140 A.D
Style/Period	Seljuk
Century	12 th Century A.D, 6 th Century A.H
Building Type	Funerary
Building Usage	Mausoleum, tomb



The date of construction for this tomb tower is estimated as 1139-40. It has a cylindrical chamber that is composed of twenty-two triangular flanges on the exterior that gives it a zigzagged cross-section. There are two entrances, one on the north and one on the south side. The roof is now missing, but considering the shape of the chamber and evidence provided by other tombs, the tomb was possibly built with a conical roof. There is a spiraling staircase within the wall that gives access to the roof level and that is accessed from a doorway above the northern entrance.

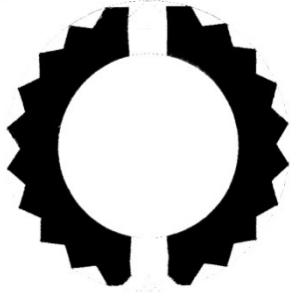
The outer surface of the tomb recalls Gonbad-e Qābus in Gorgan, whose exterior is also articulated with triangular flanges. The only difference between the two tombs, aside from their dimensions, is the placement of the flanges one after the other without any intermediary space in the Mausoleum of *Toqrol*, thus forming a zigzagged surface. The Mausoleum of *Toqrol* is also adorned with three bands of squinches at the top that enable the transition between the jagged surface of the tower walls and the circular cornice that once supported the dome. Above the squinches, the cornice is articulated with simple brick patterns, animating the structure by changing light conditions.

Both entrances to the tomb are set into arched niches with rectangular frames. The southern entrance, which is grander with a rectangular plaque that possibly contained an inscription, is identified as the main access.

The round interior of the chamber is unadorned in plain brick. There have been numerous attempts to renovate this structure; the most recent and extensive one was commissioned *Naser al-Din* (1848-1896), a Qajar ruler. Although the structure of the tomb has remained intact, some of the more delicate features, such as the inscription have been damaged or lost.¹¹

¹¹ Hoag, John D. 1987. *Islamic Architecture*. New York: Rizzoli.

Hatim, Ghulam Ali. 2000. *Mimari-i Islami-i Iran dar dawrah-i Saljuqian*. Tehran: Muassasah-i Intisharat-i Jihad-i Danishgahi, 126-131.



location	Toqrol Tomb Tower
Map Name	Floor plan of tomb tower
Source	The Islamic Atchitecture Of Iran The Salhuqs Period Dr.Gholam A. Hatam

Figure 25



location	Toqrol Tomb Tower
Photograph Date	Unknown
Photographer	Ernst Herzfeld
Source	Golestan Cultural Heritage, Handicrafts and Tourism Organization
Caption	View of tomb tower from a distance

Figure 26



location	Toqrol Tomb Tower
Photograph Date	Unknown
Photographer	Unknown
Source	A survey of Persian Art, from Prehistoric Times to the Present, Pope, Arthur
Caption	Exterior view of tomb tower from west, with the northern entrance seen on the left; the stairway, which begins above the entrance, was probably accessed with a wooden ladder

Figure 27



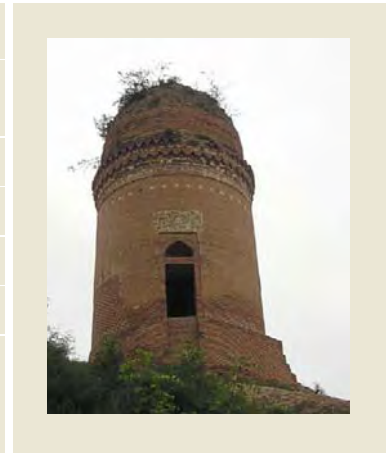
location	Toqrol Tomb Tower
Photograph Date	2003
Photographer	Unknown
Source	Golestan Cultural Heritage, Handicrafts and Tourism Organization
Caption	Exterior view, looking towards the entrance

- Comparison of Toqrol Tomb Tower with Gonbad-e Qābus

Tomb Tower	Floor plan	Height	Diameter	Material	Date
Gonbad-e Qābus		52.844m	17.415 m	Brick	4 th Century A.H 1006 A.D
Toqrol		20 m (dome less)	16 m	Brick	6 th Century A.H 1139-1140 A.D

3.c.1 -10 Resget Tomb Tower

Variant Names	Burj-I Resget, Burj Resget, Burj-e Resget, Tomb Tower at Rasget
Location	Resget, Iran -About 10 kilometers from Lajim, close to Qa'em Shahr, Mazandaran Province, Iran
Date	late 11th-early 12th c.
Style/Period	Bawandid
Century	11 th , 12 th
Building Type	Funerary
Building Usage	Tomb



Composed of a simple, unadorned cylindrical chamber and a double dome, this tomb tower belongs to the earlier part of the Seljuk period in Iran. The exterior dome of the tower, now missing, was most probably conical such as in other tombs of this period. The entrance to this tower is located on the southeast side of the chamber.

The decorative elements of the exterior, as had been customary in Seljuk Iranian tomb towers of the same period, are below the dome and above the entrance. Two superimposed rows of projecting V-shaped brackets, roughly articulated by stepping individual bricks, make up the base for the conical roof that once crowned the building. Inserted in the recesses of these brackets are finely carved stucco decorations whose floriated disposition contrasts with the linear language of the brick decoration. Below these two bands is a band of *Kufic* inscription, carved in stucco and also decorated with floral motifs.

Above the doorway is another decorative panel executed in stucco that stands out against the red brick. It contains inscriptions both in Arabic and Pahlavi (language spoken by the Sassanids). The co-existence of both Arabic and Pahlavi script connects this tower with two others from the region, Mil-i Radkah and the Tomb Tower at Lajim, and helped the locals identify with the tomb.

The interior is a simple cylindrical chamber with an elongated dome. This monument has been restored partially.¹²

¹² Pope, Arthur U. and Phyllis Ackerman (ed). 1964. *A Survey of Persian Art from Prehistoric Times to the Present*. London, New York: Oxford University Press, vol. 3.

Uqabi, Muhammad Mahdi (ed). 1997 (1376 h. g.). *Dayirat al-ma arif-i binaha-yi tarikhi-i Iran dar dawrah-i Islami*. Tehran: Awzahi-i Hunari-i Sazmani-i Tablighat-i Islami, 381.

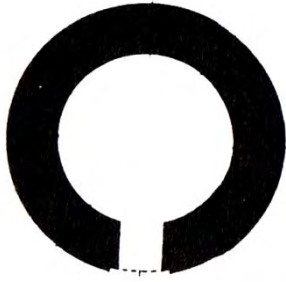


Figure 28

location	Resget Tomb Tower
Map Name	Floor plan of tomb tower
Source	Iranian Architecture of The Islamic Period, Ed:M.Y Kiyani



Figure 29

location	Resget Tomb Tower, Mazandaran, Iran
Photograph Date	Unknown
Photographer	Bernard O'Kane
Source	Mazandaran Cultural Heritage, Handicrafts and Tourism Organization
Caption	Upper half of tomb tower, with dome



Figure 30

location	Resget Tomb Tower, Mazandaran, Iran
Photograph Date	2003
Photographer	Saeed soleymani
Source	Mazandaran Cultural Heritage, Handicrafts and Tourism Organization
Caption	Exterior view from northwest, looking up at the tomb

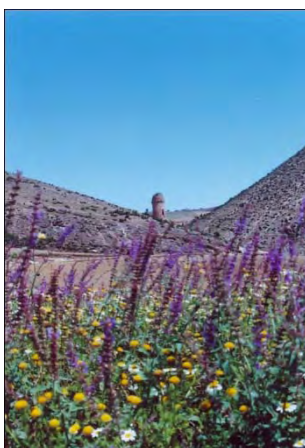



Figure 31

location	Resget Tomb Tower, Mazandaran, Iran
Photograph Date	2003
Photographer	Saeed soleymani
Source	Mazandaran Cultural Heritage, Handicrafts and Tourism Organization
Caption	View of tomb from a distance among hills, with fields in the foreground

- Comparison of Resget Tomb Tower with Gonbad-e Qābus

Tomb Tower	Floor plan	Height	Diameter	Material	Dte
Gonbad-e Qābus		52.844m	17.415 m	Brick	4 th Century A.H 1006 A.D
Resget		14 m	6.40 m	Brick	5 th Century A.H 11 th .12 th Century A.D

3.c.1 -11 Hafez Abdullah Tomb Tower (Qorban Tower)

Variant Names	Borj-e Qorban
Location	Hamedan, Iran
Date	-
Style/Period	Seljuk
Century	12 th Century A.D
Building Type	Funerary
Building Usage	Tomb



This tomb is located in the city of Hamedan near the Ibn-e Sina Junior School. This is the resting abode of '*Sheikh-ol-Islam Hassan Ebne Attar Hafez Abol Ala*' and a group of the commanders of the Seljuk period. It was built in the 7th and 8th centuries A.H., comprises of a brick tower with twelve sides and a brick pyramid shaped dome consisting of twelve (brick) panels.

The external part of the building is composed of arches of unique and spectacular design. In the center of the tower is a simple grave, the tomb-stone of which is related to the Safavid period. It is said, that a person by the name of 'Qorban' constructed a trench in this area to safe-guard the people of this locality against the Afqan invasion; thence the name of this tower..¹³

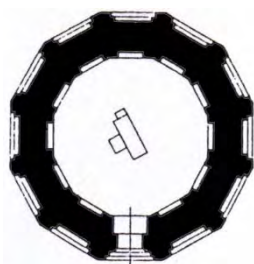


Figure 32

location	Hafez Abd ullah Tomb Tower, Hamedan, Iran
Map Name	Floor plan of tomb tower
Source	Iranian Architecture of The Islamic Period, Ed:M.Y Kiyani



Figure 33

location	Hafez Abd ullah Tomb Tower, Hamedan, Iran
Photograph Date	2006
Photographer	Hossein Alvandi
Source	Golestan Cultural Heritage, Handicrafts and Tourism Organization
Caption	Exterior view, after restoration



Figure 34



location	Hafez Abd ullah Tomb Tower, Hamedan, Iran
Photograph Date	2006
Photographer	Unknown
Source	Golestan Cultural Heritage, Handicrafts and Tourism Organization
Caption	Exterior view, looking towards the entrance



Figure 35

location	Hafez Abd ullah Tomb Tower, Hamedan, Iran
Photograph Date	2000
Photographer	Talinn Grigor
Source	Golestan Cultural Heritage, Handicrafts and Tourism Organization
Caption	Exterior view

- Comparison of Hafez Abd ullah Tomb Tower with Gonbad-e Qābus

Tomb Tower	Floor plan	Height	Diameter	Material	Date
Gonbad-e Qābus		52.844m	17.415 m	Brick	4 th Century A.H 1006 A.D
Hafez Abd ullah		16.70	7.6	Brick	7 th , 8 th Century A.H 1006 A.D

3.c.1-12 Pir-e Alamdar Tomb Tower

Variant Names	Tomb Tower of Pir-i 'Alamdar, Tomb Tower of Pir Alamdar, Pir-Alam-Dar Mausoleum
Location	Damghan, Iran
Date	1021-6 A.D
Style/Period	Ziyarid
Century	11 th Century A.D
Building Type	Funerary
Building Usage	Tomb, mausoleum



The Tomb of Pir-e Alamdar is located in Damghan close to the Masjid-i Jami, or the great mosque. Similar in appearance to other early Seljuk tombs such as Mil-i Radkan and tomb towers at Lajim and Resget, this simple tomb consists of a cylindrical chamber crowned by a dome. Its low hemispherical dome sets it aside among contemporary tombs that are mostly crowned with conical domes. Also absent in this tomb is the crypt, which is seen commonly in later tombs, and especially in those located at Maragha. The entrance faces southwest.

The upper section of the chamber is adorned with nine decorative bands on the exterior. Most prominent are two wide bands with labyrinthine geometric patterns that frame a band of *Kufic* inscriptions in Arabic. The inscription contains the name of the builder, Abu Harab Bakhtiar, and the name of the person buried inside, Hajib al-Said ibn Ja'far Mohammad Ibn Ibrahim. Narrow bands with variegated brick patterns separate the three wide bands, and three more narrow bands mark the bottom of the decorative section. A thinner saw tooth band precedes the three-tier corbelled cornice. The dome, set in from the edge of the cornice, is visible only at a distance.

The entrance to the burial chamber is set inside a niche with a rectangular frame. The rectangular doorway is crowned by a semi-vault and pointed arch, and flanked by two columns. The semi-vault is inscribed with *Kufic* writing, topped by checkered and chain brick patterns. The archivolt and spandrels of the arch are decorated with diamond patterns. The decoration is executed in stucco and brick.

Inside, the tomb tower is covered with plaster. A wide band of inscription in highly stylized *Kufic* style wraps the interior below the dome; it contains Quranic verses from Sura Az-zamar.¹⁴



Figure 36

location	Pir-e Alamdar Tomb Tower, Damghan, Iran
Map Name	Floor plan of tomb tower
Source	Semnan Cultural Heritage, Handicrafts and Tourism Organization



Figure 37

location	Pir-e Alamdar Tomb Tower, Damghan, Iran
Photograph Date	Unknown
Photographer	Josephine Powell
Source	Semnan Cultural Heritage, Handicrafts and Tourism Organization
Caption	Exterior view during restoration



Figure 38

location	Pir-e Alamdar Tomb Tower
Photograph Date	Unknown
Photographer	Josephine Powell
Source	Semnan Cultural Heritage, Handicrafts and Tourism Organization
Caption	Exterior view, prior to restoration



¹⁴ Pope, Arthur U. and Phyllis Ackerman (ed). 1964. A Survey of Persian Art from Prehistoric Times to the Present. London, New York: Oxford University Press, vol. 3.
Uqabi, Muhammad Mahdi (ed). 1997 (1376 h.g.). Dayirat al-ma arif-i binaha-yi tarikhi-i Iran dar dawrah-i Islami. Tehran: Awzahi-i Hunari-i Sazmani-i Tablighat-i Islami, 377-378.



Figure 39

location	Pir-e Alamdar Tomb Tower, Damghan, Iran
Photograph Date	2002
Photographer	Nasrollah Kasrain
Source	Semnan Cultural Heritage, Handicrafts and Tourism Organization
Caption	Exterior view with the entrance

- Comparison of Pir-e Alamdar Tomb Tower with Gonbad-e Qābus

Tomb Tower	Floor plan	Height	Diameter	Material	Date
Gonbad-e Qābus		52.844m	17.415 m	Brick	4 th Century A.H 1006 A.D
Pir-I Alamdar		13 m	6.40 m	Brick	5 th Century A.H 1021-6 A.D

3.c.1 -13 Imamzadeh Azhar Tomb Tower

Variant Names	Emamzadeh Azhar, Azhar Tomb, Imamzadah Azhar, Emamzade Azhar
Location	Darjazin District, Hamedan, Iran
Date	-
Style/Period	Il-Khanid
Century	7 th Century H.D.
Building Type	Funerary
Building Usage	Tomb



This structure is in the village of Darjezin, in Razan district, Province of Hamedan in Iran. The said is a cylindrically shaped tower 20 m. in height and with 19 panels. It has a dome made of flat brick. Within the structure which is spherical, is the tomb. On this tomb is a wooden chest with inscriptions from versus of the Holy Qoran. The chest was constructed in the year 1056 AH. Under the orders of Shah Abbas Safavid II. The actual tomb however, is in the basement. The said structure dates back to the Mongol period (7th Century AH.). During the reign of Shah Abbas II (1056 AH.) it was repaired.¹⁵

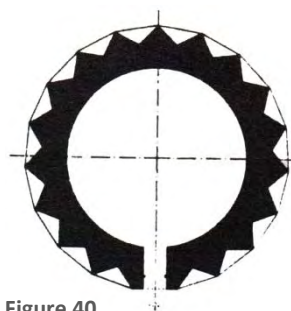


Figure 40

location	Emamzade Azhar Tomb Tower, Hamedan, Iran
Map Name	Floor plan of tomb tower
Source	Iranian Architecture of The Islamic Period, Ed:M.Y Kiyani



Figure 41

location	Imamzadeh Azhar Tomb Tower, Hamedan, Iran
Photograph Date	1984
Photographer	Unknown
Source	Golestan Cultural Heritage, Handicrafts and Tourism Organization
Caption	Exterior view

¹⁵ <http://www.cgie.org.ir>



Wilber, Donald N. 1955. The Architecture of Islamic Iran: The Il-Khanid Period. New York: Greenwood Press, 189.



location	Imamzadeh Azhar Tomb Tower
Photograph Date	1984
Photographer	Unknown
Source	Golestan Cultural Heritage, Handicrafts and Tourism Organization
Caption	Exterior view with entrance

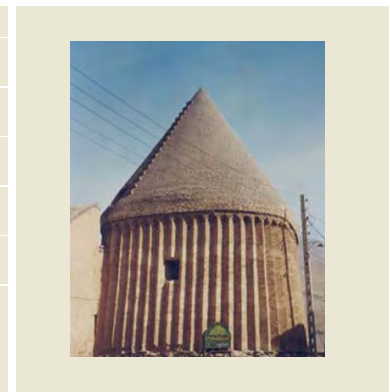
Figure 42

- Comparison of Emamzadeh Azhar Tomb Tower with Gonbad-e Qābus

Tomb Tower	Floor plan	Height	Diameter	Material	Date
Gonbad-e Qābus		52.844m	17.415 m	Brick	4 th Century A.H 1006 A.D
Imamzadeh Azhar		20 m	9.30 (Inner circle)	Brick	7 th Century A.H

3.c.1 -14 Imamzadeh Abdullah Tomb Tower

Variant Names	Emamzadeh Abd ullah, Imamzada Abdullah
Location	Damavand, Iran
Date	c. 1300
Style/Period	Il-Khanid
Century	14 th Century A.D, 8 th Century A.H
Building Type	Funerary, religious,
Building Usage	Tomb, shrine, mosque



Adjoining a later-period prayer hall to the north, the Imamzadeh Abdullah is a flanged tomb tower of uncertain date. The 33 right angle flanges extend from the ground without a socle and connect at the top to form a continuous arcade. Above the arcade, a zone of tile revetment pierced by nine windows leads to the thirty-sided conical roof, recently clad with glazed brick. The tiled section with windows postdates the original construction, which is thought to be from the Mongol period.

The decoration of the octagonal interior is largely recent work, with the exception of a stucco inscription below the dome, and the painted stucco star pattern on the dome itself.

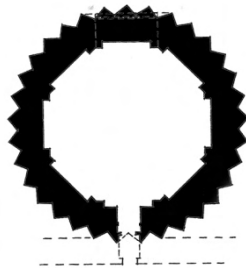


Figure 43

location	Imamzadeh Abdullah Tomb Tower, Damavand, Iran
Map Name	Floor plan of tomb tower
Source	The Islamic Architecture Of Iran the Il- Khanid Period D.N Vilber

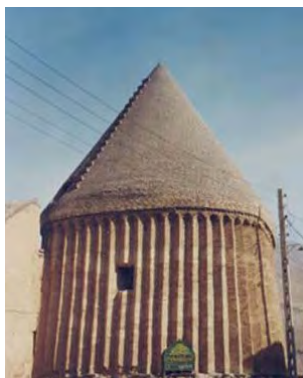


Figure 44

location	Imamzadeh Abdullah Tomb Tower, Damavand, Iran
Photograph Date	2008
Photographer	Unknown
Source	Persia Older Than History CD
Caption	Exterior view

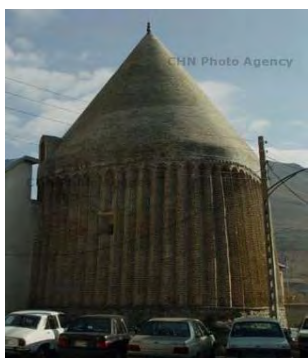


Figure 45

location	Imamzadeh Abdullah Tomb Tower, Damavand, Iran
Photograph Date	2006
Photographer	Hasan Ghafari
Source	Golestan Cultural Heritage, Handicrafts and Tourism Organization
Caption	Exterior view

- Comparison of Imamzadeh Abdullah Tomb Tower with Gonbad-e Qābus

Name of Tomb Tower	Floor plan	Height	Diameter	Material	Century (Antiquity)
Gonbad-e Qābus		52.844m	17.415 m	Brick	4 th Century A.H 1006 A.D
Imamzadeh Abd ullah		16 m	9.16 m	Brick	8 th Century A.H 14 th Century A.D

3.c.1 -15 Mille Akhangan Tomb Tower

Variant Names	Mille Ahangan, mille Akhangan, mille Ahanjan
Location	Tous, Iran
Date	-
Style/Period	Azari
Century	15 th Century A.D, 9 th Century A.H.
Building Type	Funerary
Building Usage	Tomb



The date of this tomb tower with its tall double shelled dome is not accurately known since it has no inscription showing the date of its construction. However based on the historical and architectural evidences some scholars have stated their opinions in this regard. Andre Godard attribute it to the Timurids because of its squared and designed tiles while Lisa Golombek and Donald Wilber although would not pronounce any exact date for it but they propose the first of the 9th Century as a probable period. Robert Hillenbrand believes that the building is closer to the Ilkhanids.

It can therefore be presumed that the tower was built during the Timurids (9th Century AH) and since the builder's intention was to construct a distinctive monument he benefitted from the architectural models and traditions of the past periods ((Ilkhanids).

The tower rests on a short octagonal platform with a 7.13 meter cylindrical stem capped with a 2.04 meter conical dome.

The stem from inside is octagonal and from outside cylindrical with eight decorative supplementary semi-columns. Although the main body of the structure is built with bricks but another cover is added to it for decorative purposes. Here molded rectangular, square, star and cross like pieces of tiles are set among a diverse beautiful and embossed tiles of ultramarine and turquoise colors.

The main entrance is from the south. However there also exist two doors in both eastern and western sides¹⁶.

¹⁶ <http://palapalhome.com/iran>

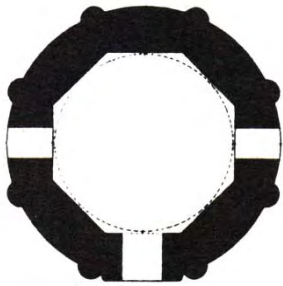


Figure 46

location	Mille Akhangan Tomb Tower, Tous, Iran
Map Name	Floor plan of tomb tower
Source	Iranian Architecture of The Islamic Period, Ed:M.Y Kiyani



Figure 47

location	Mille Akhangan Tomb Tower, Tous, Iran
Photograph Date	Unknown
Photographer	Unknown
Source	Golestan Cultural Heritage, Handicrafts and Tourism Organization
Caption	Top view



Figure 48

location	Mille Akhangan Tomb Tower, Tous, Iran
Photograph Date	Unknown
Photographer	Unknown
Source	Golestan Cultural Heritage, Handicrafts and Tourism Organization
Caption	Exterior view

- Comparison of Mill-I Akhangan Tomb Tower with Gonbad-e Qābus

Tomb Tower	Floor plan	Height	Diameter	Material	Date
Gonbad-e Qābus		52.844m	17.415 m	Brick	4 th Century A.H 1006 A.D
Mille Akhangan		9.17 m	7m	Brick	9 th Century A.H 15 th Century A.D

3.c.1 -16 Chihil Dukhtaran Tomb Tower

Variant Names	Gonbad-e Chihil Dukhtaran, Forty Maids Tomb Tower, Chihil Dukhteran, Chehel Doghtar, Chehel Dukhtaran, Chehel Dokhtaran
Location	Damghan, Iran
Date	1056 A.D
Style/Period	Seljuk
Century	11 th Century A.D, 5 th Century A.H.
Building Type	Funerary
Building Usage	Tomb



Built in the year 1054-55, this monument is the second oldest remaining tomb structure from the time of *Toqrol Beg* (1040-1063), the first Seljuk monarch. It is located in the center of the city behind the *Imamzadeh Ja'far* mausoleum complex.

The tomb has a cylindrical chamber entered from the north. An elongated dome covers the structure. The chamber walls taper inward towards the top. Unlike the tombs in Maragheh, this structure does not have a crypt. This is consistent with earlier tombs that also did not have crypts.

The exterior decoration for the tomb is concentrated just below the dome and at the entrance. While the lower section of the tomb is laid in plain brickwork, six decorative bands adorn the top. These include two identical bands with swastika and triangle motifs that frame a wider band of *Kufic* inscriptions. Within the writing can be found the name of the patron of the monument, *Amir Abu Shuja Asfar*. Above, there is a saw tooth cornice and a band of diamonds that provide the base for the dome.

The entryway is set in a small niche that is flanked by two thick columns and crowned by a semi-vault and a pointed arch. The boundaries of the niche form a tall rectangular frame. The inner lining of the pointed arch has an Arabic inscription written in *Kufic* style that gives the name of the patron for the second time. The tympanum of the arch is filled with brickwork in zigzag pattern.

The round interior of the burial chamber is covered with plaster¹⁷

¹⁷ Hatim, Ghulam Ali. 2000. *Mimari-i Islami-i Iran dar dawrah-i Saljuqian*. Tehran: Muassasah-i Intisharat-i Jihad-i Danishgahi, 107.

Daneshvari, Abbas. 1977. *A Stylistic and Iconographic Study of the Persian Tomb Towers of the Seljuk Period*. (Unpublished thesis completed at the University of California.)



Figure 49

location	Chihil Dukhtaran Tomb Tower, Damghan, Iran
Map Name	Floor plan of tomb tower
Source	Semnan Cultural Heritage, Handicrafts and Tourism Organization



Figure 50

location	Chihil Dukhtaran Tomb Tower, Damghan, Iran
Photograph Date	Unknown
Photographer	Ernst Herzfeld
Source	Semnan Cultural Heritage, Handicrafts and Tourism Organization
Caption	Exterior view, seen prior to restoration, with the wall of Khanaqah of Shah Rukh seen behind



Figure 51

location	Chihil Dukhtaran Tomb Tower, Damghan, Iran
Photograph Date	2003
Photographer	Unknown
Source	Semnan Cultural Heritage, Handicrafts and Tourism Organization
Caption	Exterior view



Figure 52

location	Chihil Dukhtaran Tomb Tower, Damghan, Iran
Photograph Date	2003
Photographer	Unknown
Source	Semnan Cultural Heritage, Handicrafts and Tourism Organization
Caption	Exterior view from adjacent street

- Comparison of Chihil Dukhtaran Tomb Tower with Gonbad-e Qābus

Tomb Tower	Floor plan	Height	Diameter	Material	Date
Gonbad-e Qābus		52.844m	17.415 m	Brick	4 th Century A.H 1006 A.D
Chihil Dukhtaran		15 m	7.32 m	Brick	5 th Century A.H 1056 A.D

3.c.1 -17 Sultan Haidar

Variant Names	Shaykh Haydar Tomb
Location	Meshgin Shahr, Iran
Date	c. 1330
Style/Period	Il-Khanid
Century	14 th Century A.D, 8 th Century A.H
Building Type	Funerary
Building Usage	Tomb



This building is related to Sheikh Haidar father of *shah Ismaeil(I)*. This tomb from the outer side is like a round tower and from inside is like 12 costal and it is in two stages lower part is crypt and upper part like round tower with 18/5m height and 10/5 m diameter .This building is decorated with turquoise colored tile etching to 27, 28, 29 sign of *Surah Fath* and also blessed name of God in different forms and with *kufi* handwriting. There are so many suggestions about oldness and date of its construction. Donald Wilber believed that this building related to 7th and 8th A.H. During the Safavids efforts were made for for its completion and tile-workings. A date of 731 AH, the period of Abosaeid Bahadorkhan's days, has been suggested by Mr. Ghoochani from the Iranian Cultural Heritage, Handicrafts and Tourism Organization who according read a related epigraph.¹⁸



Figure 53

location	Sultan Haidar Tomb Tower, Meshgin Shahr, Iran
Map Name	Floor plan of tomb tower
Source	Ardabil Cultural Heritage, Handicrafts and Tourism Organization

¹⁸ Donald N. Wilber, *The Architecture of Islamic Iran*, (New York: Greenwood Press, 1969) 175



Figure 54

location	Sultan Haidar Tomb Tower, Meshgin Shahr, Iran
Photograph Date	1984
Photographer	Sheila Blair and Jonathan Bloom
Source	Ardabil Cultural Heritage, Handicrafts and Tourism Organization
Caption	Exterior view with portal



Figure 55

location	Sultan Haidar Tomb Tower, Meshgin Shahr, Iran
Photograph Date	2001
Photographer	Unknown
Source	Ardabil Cultural Heritage, Handicrafts and Tourism Organization
Caption	Exterior view



Figure 56

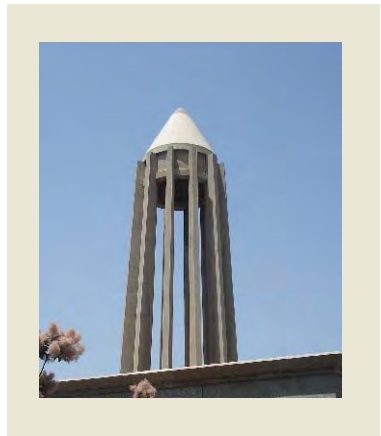
location	Sultan Haidar Tomb Tower, Meshgin Shahr, Iran
Photograph Date	2009
Photographer	Unknown
Source	Ardabil Cultural Heritage, Handicrafts and Tourism Organization
Caption	Exterior view, with scaffolding set up for restoration

- Comparison of Sultan Haidar Tomb Tower with Gonbad-e Qābus

Tomb Tower	Floor plan	Height	Diameter	Material	Date
Gonbad-e Qābus		52.844m	17.415 m	Brick	4 th Century A.H 1006 A.D
Sultan Haidar		18.5 m	10.5 m	Brick	7-8 th Century A.H c. 1330

3.c.1 -18 Tomb of Ibn-e Sina

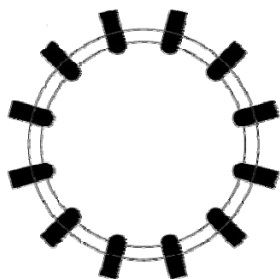
Variant Names	Tomb of Avicenna, Abu Ibn-e Sina Memorial, Aramgah-e Ibn Sina, Tomb of Ibn Sina
Location	Hamadan, Iran
Date	1952
Style/Period	Pahlavi
Century	20 th Century A.D
Building Type	Funerary, public monuments, public/cultural
Building Usage	Mausoleum, symbolic structure, museum



Designing and construction of the Tomb of Ibn-e Sina in Hamadan, Iran, was among the first projects planned and implemented by the Society of National Monuments during its second phase of the activities and on the occasion of Ibn-e Sina’s millennia of his birth (1951 AD).

In 1955 the Board of Founders of the Society of National Monuments based on the condition that the combination of the old and modern architectures was a priority, organized an architectural competition in which the project proposed by *Hushang Seihoon* was selected as the winner by both *Andre Godard* and *Mohsen Forooghi*.

Mohammad Taghi Mostafavi writes about the main idea behind the project: “*The main two differences between Ibn-e Sina tomb tower and Gonbad-e Qābus are, firstly, the dimensions of Ibn-e Sina tomb tower are half of the ones for Gonbad-e Qābus due to high costs we were anticipating and the second, contrary to Qābus tower that except the entrance door and a small opening just below its dome, as was the tradition of the period to build a dark chamber or catacomb, do not have any other openings to outside, the spaces between the flanges in Ibn-e Sina are being left open. This innovation, that is to leave open the spaces between the flanges, not only is in conformity with Hamadan climate with its severe winds but also has made the building much more attractive and beautiful that it was originally expected.*”¹⁹ ”



location	Ibn-e Sina Memorial, Hamedan, Iran
Map Name	Floor plan of mausoleum
Source	Golestan Cultural Heritage, Handicrafts and Tourism Organization

Figure 57

¹⁹ Memar Magazine, No.26



Figure 58


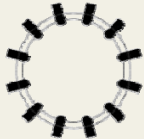
location	Ibn-e Sina Memorial, Hamedan, Iran
Photograph Date	2009
Photographer	Unknown
Source	Golestan Cultural Heritage, Handicrafts and Tourism Organization
Caption	Exterior view













Figure 59








location	Ibn-e Sina Memorial, Hamedan, Iran
Photograph Date	2009
Photographer	Unknown
Source	Golestan Cultural Heritage, Handicrafts and Tourism Organization
Caption	Exterior view

- Comparison of Tomb of Ibn-e Sina with Gonbad-e Qābus

Tomb Tower	Floor plan	Height	Diameter	Material	Date
Gonbad-e Qābus		52.844m	17.415 m	Brick	4 th Century A.H 1006 A.D
Ibn-e Sina		25m	8m	Concrete	20 th Century A.D

3.c.1-19 Conclusion

	Tomb Tower	Floor plan	Height	Diameter	Material	Date
1	Gonbad-e Qābus		52.844m	17.415 m	Brick	4 th Century A.H 1006 A.D
2	Radkan- West		24.20 m	9.48 m	Brick	5 th Century A.H
3	Lajim		18 m	7.279 m	Brick	5 th Century A.H 1022-1023 A.D
4	Mehmandust		6.30 m (dome less)	9.30 m	Brick	5 th Century A.H 1097 A.D
5	Kashaneh		20 m	14.420 m	Brick	7 th -8 th Century A.D 1313 A.D
6	Radkan- East		25 m	13.33 m	Brick	6 th Century A.H 1205-6 or 1280-1300 A.D
7	Varamin(Ala al-Din)		26	12.66 m	Brick	7 th Century A.H 1276-1289 A.D
8	Toqrol		20 m (dome less)	16 m	Brick	6 th Century A.H 1139-1140 A.D
9	Resget		14	6.40 m	Brick	5 th Century A.H 11 th , 12 th Century A.D
10	Imamzadeh Azhar		20 m	9.30	Brick	7 th Century A.H

11	Hafez Abol Ala`		16.70	7.6	Brick	7 th , 8 th Century A.H 1300 A.D
12	Pir-i Alamdar		13 m	6.40 m	Brick	5 th Century A.H 1021-6 A.D
13	Mille Akhangan		9.17 m	7m	Brick	9 th Century A.H 15 th Century A.D
14	Imamzadeh Abd ullah		16 m	9.16 m	Brick	8 th Century A.H 14 th Century A.D
15	Chihil Dukhtaran		15 m	7.32 m	Brick	5 th Century A.H 1056 A.D
16	Sultan Haidar		18.5 m	10.5 m	Brick	7-8 th Century A.H c. 1330
17	Ibn-e Sina		25m	8m	Concrete	20 th Century A.D

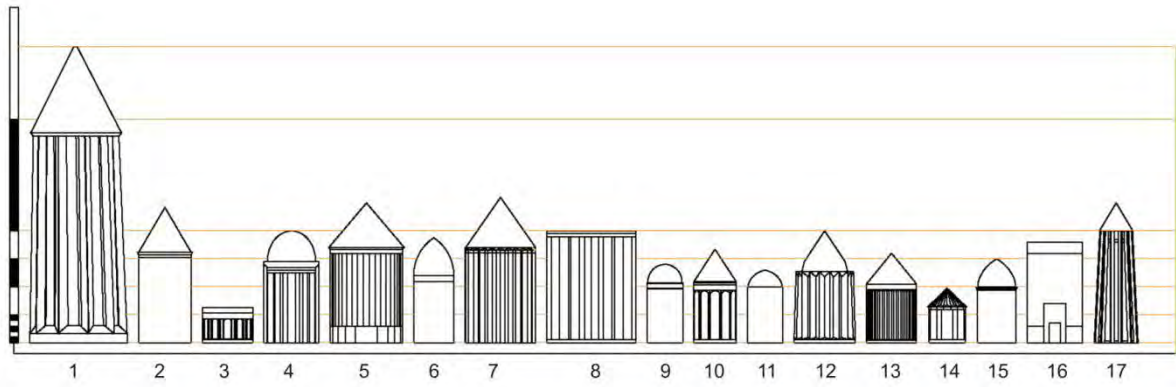


Figure 60. Height Comparison Cart between Gonbad-e Qābus and the above-mentioned tomb towers in Iran

Height comparison between Gonbad-e Qābus and the above-mentioned tomb towers in Iran

Since choosing a design and form for the tomb towers were rather limited (either square, polygonal, round or transformed circle) and this was particularly so during the Medieval times in Iran, and consequently any lateral extensions was not possible, thus the only significant issue differentiating one from the other was the height. The architects used various methods such as long and linear cylindrical bodies and double shelled domes in order to reach this objective.

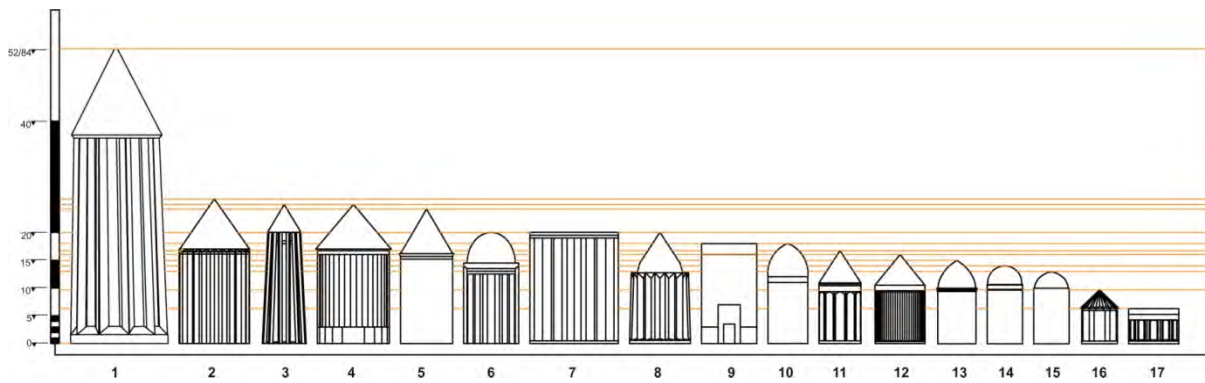
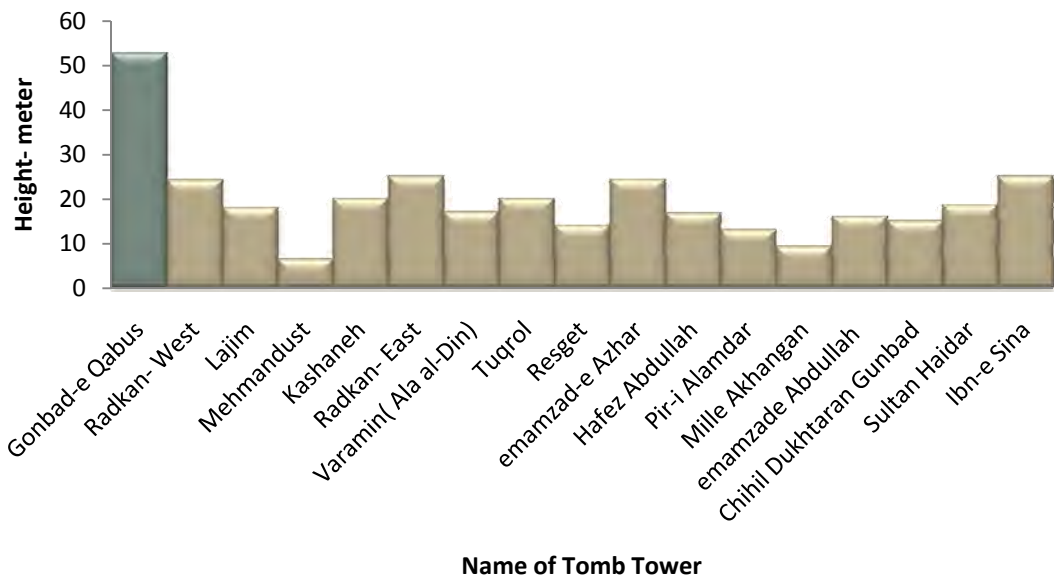
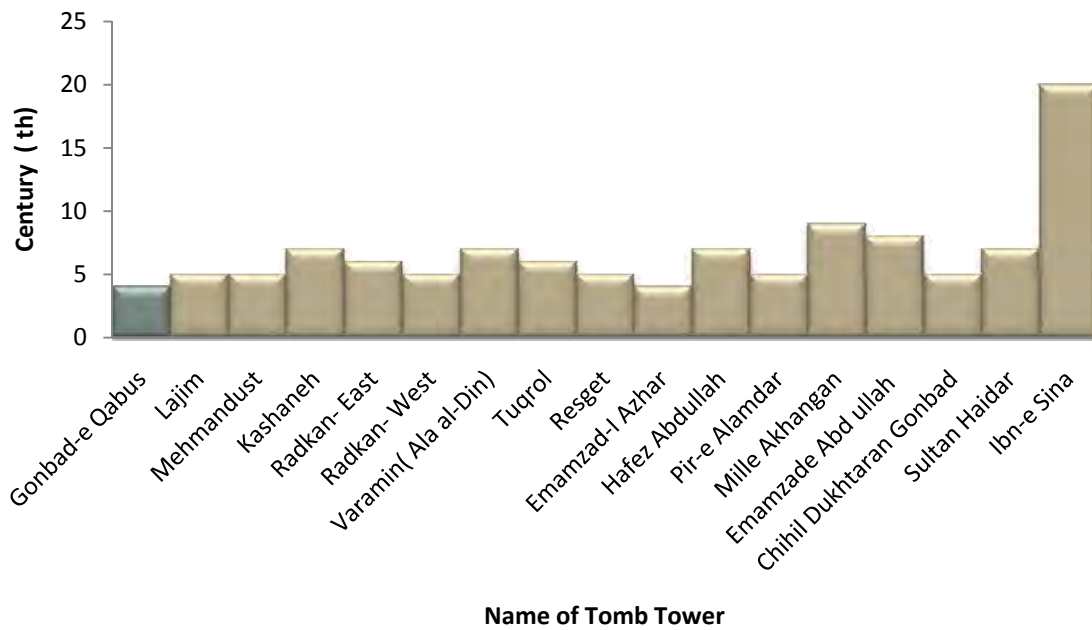


Figure 61

- | | |
|--------------------|-----------------------|
| 1- Gonbad-e Qābus | 10- Lajim |
| 2- Varamin | 11- Hafez Abdullah |
| 3- Ibn-e Sina | 12- Emamzade Abdullah |
| 4- Radkan-East | 13- Chihil Dukhtaran |
| 5- Radkan- West | 14- Resget |
| 6- Kashaneh | 15- Pir-e Alamdar |
| 7- Tuqrol | 16- Akhangan |
| 8- Imamzadeh Azhar | 17- Mehmandust |
| 9- Sultan Haidar | |

Comparison between the cross sections of Gonbad-e Qābus with the above-mentioned tomb towers



As it is clearly shown Gonbad-e Qābus is the oldest model of tomb in the form of flank dome in Iran which has survived until today and although it is the oldest but in terms of the height and other architectural characteristics and structure it is considered to be the tallest and most complete among its types.

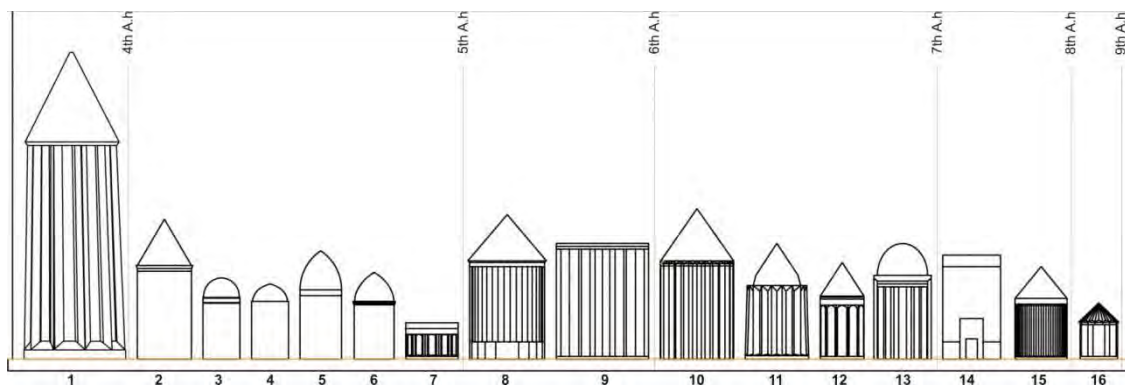


Figure 62

- | | |
|---------------------|------------------------|
| 1- Gonbad-e Qābus | 9-Toqrol |
| 2- Radkan- West | 10-Varamin |
| 3- Resget | 11- Imamzadeh Azhar |
| 4- Pir-e Alamdar | 12- Hafez Abdullah |
| 5-Lajim | 13- Kashaneh |
| 6- Chehel Dokhtaran | 14- Sultan Hidar |
| 7- Mehmandust | 15- Imamzadeh Abdullah |
| 8- Radkan-East | 16-Akhangan |

3.c.1 Tomb Tower outside IRAN

3.c.1 -1 Introduction

The tomb towers of Anatolia have had the closest correlation with the Iranian ones, particularly in the 9th Century AH. In fact the construction of tombs in Anatolia developed in a richer tradition than the Seljuks' Caravanssari and madrassa (school), following the Seljuks' tradition of funerary architecture in Iran. As Dr. Hillenbrand states, "*Most of the Anatolian mausoleum of the per- Ottoman period are tomb towers on the Iranian model, in that they have a cylindrical or polygonal body with a pyramidal or conical roof*"²⁰. With the exception of a few *turbas* in Sivas, Divrigi, use of different building materials based on diverse climatic conditions in these two regions can be considered the sole difference between the two. Apparently the Anatolian architects were happy and satisfied in creating the Iranian brick-made shapes with stones with some minor alterations and even were pleased to modify the Iranian brick and gypsum stucco decorations with stone.

The Tomb Towers of *Mu'mine Khatun, Halime Hatun Tomb, Zeynel Bey Tomb, Döner Tomb, Emir Bayindir Tomb, Hüseyin Timur and Eser Tekin Tomb, Gudi Khatun Mausoleum, Tomb Tower at Barda, and Mama Hatun Tomb* are among the most representative of these monuments.

The height difference between the Anatolian and Iranian tomb towers is quite obvious. While the tallness of the most tomb towers in Anatolia is between 10 to 15 meters the height in a large number of the Iranian ones is 2 to 3 times more (Gonbad-e Qābus has a height of almost 53 meters).

²⁰ R.H brand, *Islamic Architecture: form, function. Meaning*, p: 307

3. c.2.2 Mu'mine Khatun

Variant Names	Mömina Xatun Türbasi, Möminexatun Türbesi, Mümine Xatun Maqbarasi, Momine Xatun Meqberesi, Atabek Gumbezi, Atabey Gunbad, Atabei Cupola, Momina Hatun (Momine Khatun, Momine Hatun, Mumine Khatun) Tomb Tower
Location	Nakhichevan, Azerbaijan
Date	1186
Style/Period	Ildegizid
Century	12 th
Building Type	Funerary
Building Usage	Mausoleum, tomb



The Mausoleum of the *Mu'mine Khatun* is located in Nakhichevan, the capital of the Nakhichevan Autonomous Republic in Azerbaijan. It was commissioned by Ildegizid Atabek Jahan Pahlawan (1175-1186) in honor of his first wife, *Mu'mine Khatun*, and completed in 1186-1187, as indicated on the *Kufic* style inscriptive plaque above the entrance. Its architect, *Adjemi ibn Abubekr* (or, *Adjemi Nakchivani*) also built the nearby mausoleum of Yusuf ibn Kuseyir. Scholars mention that the mausoleum was originally built with a madrasa, and drawings and photographs of the site from the nineteenth Century confirm that it existed as part of a religious and educational complex, which is no longer extant.

The mausoleum is a decagonal brick tomb tower, rising to a height of approximately twenty-five meters. It is built above a crypt and sits on a shallow base made of large blocks of red diorite. A flat roof raised on a tapering, decagonal drum covers the slightly pointed inner dome. The main entrance to the edifice faces east, while a secondary one leads to the crypt, whose vault is supported by a massive central pier.

The solid brick walls of the mausoleum are pierced by two small windows facing west, with an additional window above the main entrance. A band of inscription in *Kufic* characters composed of turquoise tiles runs below the *moqarnass* cornice. The recessed surface of its twelve exterior facets are covered with carved geometric motifs on brick, which are highlighted by turquoise tiles, and set in a rectangular frame that includes a small *moqarnass* crown. Inside, the burial chamber is circular in plan, with bare walls.

The Mausoleum of *Mu'mine Khatun* is representative of the Nakhichevan architectural tradition of the medieval era, which was heavily influenced by the works of the Azerbaijani architect *Adjemi ibn Kuseyir*. The Nakhichevani style differed from the

Shirvani styles prevailing in Absheron in its use of brick as the basic construction material and the use of colored, especially turquoise enameled tiles, for decoration.

The mausoleum was most recently restored in 1999-2003, as part of the Azerbaijan Cultural Heritage Support Project of the World Bank.²¹

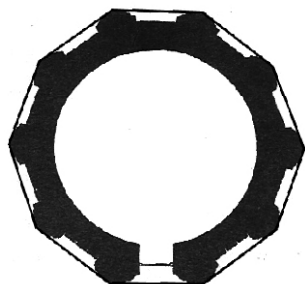


Figure 63

location	Mu'mine Khatun Tomb Tower, Azerbaijan
Map Name	Floor plan of tomb tower
Source	The Islamic Architecture of Iranian The Seljuqs Period, Dr. Gholam A. Hatam

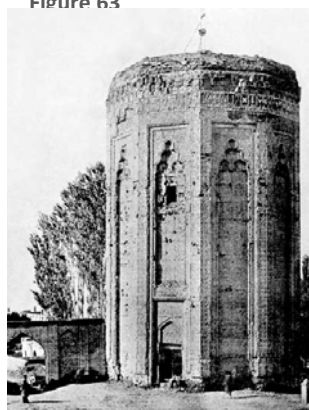


Figure 64

location	Mu'mine Khatun Tomb Tower, Azerbaijan
Photograph Date	Unknown
Photographer	Ernst Herzfeld
Source	www.Arc net.org
Caption	Exterior view of tomb tower



Figure 65

location	Mu'mine Khatun Tomb Tower, Azerbaijan
Photograph Date	2003
Photographer	Arash Boostani
Source	www.Arc net.org
Caption	Exterior view from northeast

21 Aslanapa, Oktay. 1979. *Kirim ve Kuzey Azerbaycan'da Türk Eserleri*. Istanbul: Baha Matbaasi, 19, 67-77.
 Ayvazian, Argam. 1988. *The Historical Monuments of Nakhichevan*. Detroit: Wayne State University Press, 90-92.

Fatullayev, S.S. and R.S. Babasov. 2005. "Memarliq". *Maison d'Azerbaijan Website*.

http://www.azmaison.fr/az/index_az.shtml?language=2;section=4;section2=4. [Accessed November 2, 2005]

Gink, Kalory and Ilona Turanszky. 1979. *Azerbaijan: Mosques, Turrets, Palaces*. Budapest: Corvina Kiado, 29-30.

Michell, George (ed.). 1995. *Architecture of the Islamic World: Its History and Social Meaning*. London: Thames and Hudson, 259.

"Azerbaijan Cultural Heritage Support Project." *World Bank Website*.



Figure 66

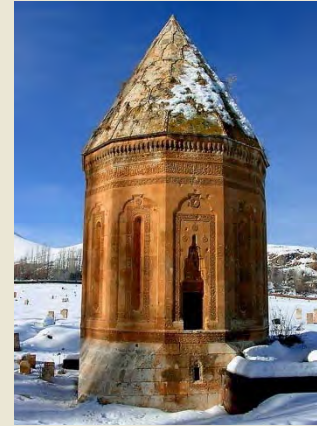
location	Mu'mine Khatun Tomb Tower , Azerbaijan
Photograph Date	2003
Photographer	Arash Boostani
Source	www.Arc net.org
Caption	Exterior view from southeast

- Comparison of Mu'mine Khatun Tomb Tower with Gonbad-e -Qābus Tomb Tower

Name	Floor plan	Height	Diameter	Material	Date
Gonbad-e Qābus		52.844m	17.415 m	Brick	4 th Century A.H 1006 A.D
Mu'mine Khatun		25 m	13.83 m	Brick	12 th Century D.H

3. c.2.3 Halime Hatun

Variant Names	Halime Hatun Kumbedi, Halime Hatun Mausoleum
Location	Gevass, Turkey
Date	1358
Style/Period	Seljuk
Century	14 th
Building Type	Funerary
Building Usage	Tomb



About 2 km to the north of the Gevaş district on the shore of Lake Van there is an old graveyard that has been in use ever since the Seljuk period. One of the most impressive pre-Ottoman grave monuments is the Kumbet of Halime Hatun, which is in the same graveyard.

The dodecahedral body of the tomb rests on a cubic base, the beveled corners of which act as a transition to the dodecahedral profile of the main body. The smooth, dodecahedral profile of the main body is the same on the inside. There is rich ornamentation on the body, which also boasts windows and niches triangular in profile. The horizontal line linking the base with the body of the monument is ornamented with two decorative bands and ovolo²² molding between the bands.

The part of the monument near the eaves is ornamented with bands of different widths. An inscription containing a verse from the Koran lies between two bands of floral ornamentation and runs right round the body of the structure. Immediately above these three bands, which are separated by narrow moldings, is a band containing two rows of *moqarnass*. The dodecahedral, pyramidal spire is faced with cut stone and it protrudes slightly over the body of the structure. A series of arcades of three lobed blind arches adorn the spire.

The door on the north side of the body of the monument is plain. The corners of the main niche of the portal are adorned with helical grooved engaged colonettes. The row of *moqarnass* overhanging the main niche of the portal resembles those on the windows. There are no small niches on either side of the portal. The rectangular band

²² Ovolo (or ovolo) in architecture, is a convex molding known also as the echinus, which in Classical architecture was invariably carved with the egg-and-dart ornament. The molding is called a quarter-round by woodworkers. Not to be confounded with the "echinus" of the Dorian capital, as this was of a more varied form and of much larger dimensions than the ovolo, which was only a subordinate molding

of ornamentation surrounding the portal is narrower than that around the windows. The rosettes in the spandrels of the windows are repeated on the portal as well. An inscription plaque has been placed on top of the lintel over the doorway. The Masjid floor of the monument is dodecahedral on the inside as well. A transition to the hemispherical dome covering the Masjid is achieved by small squinches shaped like oyster shells placed in the corners. The interior walls, as opposed to those on the outside, are completely plain.

It can be seen that the Kumbet of Halime Hatun possesses a number of local features as far as form is concerned. The first feature to attract one's attention is the dodecahedral prismatic form of the main body and the dodecahedral pyramidal roof covering it. This is the first of its type which can be dated. Generally, another feature of monuments of this type in the Van area is the triangular profiled niches on their facades.²³

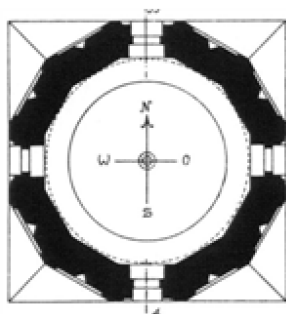


Figure 67

location	Halime Hatun Tomb Tower, Gevas, Turkey
Map Name	Floor plan of tomb tower
Source	Robert Hillenbrand ,Islamic Architecture , p:540



Figure 68

location	Halime Hatun Tomb Tower, Gevas, Turkey
Photograph Date	1913
Photographer	Walter Bachmann
Source	www.Arc net.org
Caption	Exterior view


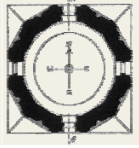
²³ <http://www.trekearth.com>



Figure 69

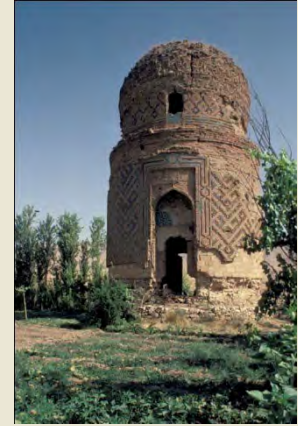
location	Halime Hatun Tomb Tower, Gevas, Turkey
Photograph Date	2007
Photographer	Unknown
Source	www.Arc net.org
Caption	Exterior view, with entrance

- Comparison of Halime Hatun Tomb with Gonbad-e Qābus

Name	Floor plan	Height	Diameter	Material	Date
Gonbad-e Qābus		52.844m	17.415 m	Brick	4 th Century A.H 1006 A.D
Halime Hatun Tomb tower		10 m	6.80 m	Brick	14 th Century D.H

3.c.2.4 Zeynel Bey Tomb Tower

Variant Names	Zeynel Bey Kümbedi
Location	Hasankeyf, Turkey
Date	1473
Style/Period	Aq Qoyunlu
Century	15 th
Building Type	Funerary
Building Usage	Tomb



During the brief reign of the *Ak Koyunlu Turkomen* in *Hasankeyf* in the late fifteenth Century, the city was chosen for the kümbet (tomb) of *Zeynel Bey*, the eldest son of *Uzun Hasan*. The tomb is on the north bank of the Tigris across from the city.

Zeynel Bey died in battle in 1473, and was buried in a circular brick kümbet glazed with navy blue and turquoise tiles built by architect *Pir Hasan*. The building is a cylinder of diagonal patterns made using brick and tile, with a pointed arch portal doorway on the north and a window in the south wall. Above the main shaft is a slightly smaller diameter shaft, which has small windows in each of the cardinal directions and carries a hemispherical dome.

Inside the plan is octagonal, with *moqarnass* niches supporting the transition to the round base of the dome. Each of the eight walls has a rectangular arched niche, and the burial chamber is recessed into the floor.²⁴

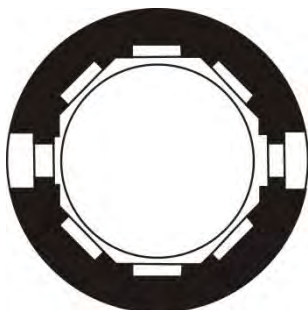


Figure 70

location	Zeynel Bey Tomb Tower, Hasankeyf, Turkey
Map Name	Floor plan of tomb tower
Source	Robert Hillenbrand, Islamic Architecture, p:541

²⁴ Aslanapa, Oktay. 1971. Turkish Art and Architecture. New York: Praeger.

Sinclair, T. A. 1989. Eastern Turkey: an architectural and archaeological survey. London: The Pindar Press.



Figure 71

location	Zeynel Bey Tomb Tower, Hasankeyf, Turkey
Photograph Date	1984
Photographer	Richard Brotherton
Source	GCHHTO
Caption	Overall site on banks of Tigris River



Figure 72

location	Zeynel Bey Tomb Tower, Hasankeyf, Turkey
Photograph Date	1984
Photographer	Richard Brotherton
Source	www.Arc net.org
Caption	Exterior view, with entrance



Figure 73

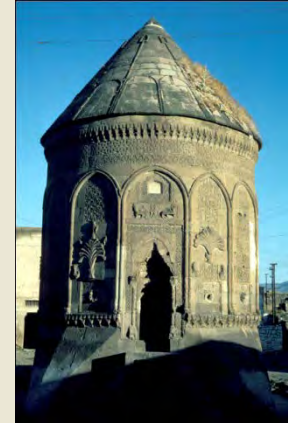
location	Zeynel Bey Tomb Tower, Hasankeyf, Turkey
Photograph Date	unknown
Photographer	unknown
Source	www.Arc net.org
Caption	Exterior view, with entrance

- Comparison of Zeynel Bey Tomb with Gonbad-e Qābus

Name	Floor plan	Height	Diameter	Material	Date
Gonbad-e Qābus		52.844m	17.415 m	Brick	4 th Century A.H 1006 A.D
Zeynel Bey Tomb		16.5 m	5.68 m	Brick	15 th Century D.H

3.c.2.5 Döner Tomb

Variant Names	Döner Kümbet, Döner Kümbed
Location	Kayseri, Turkey
Date	1276
Style/Period	Seljuk
Century	13 th
Building Type	Funerary
Building Usage	Tomb



The Döner Kümbet, literally the rotating tomb, was built in the last quarter of the thirteenth century for Princess *Sah Cihan Hatun*. A short marble inscription gives her name, but omits the date. Stylistic similarities to tombs in Ahlat suggest that the tomb was built around 1276. It is one of the more striking and decorated tombs of Kayseri, where some of the most remarkable tombs of the Seljuk Empire are located.

The tomb is twelve-sided on the exterior and cylindrical on the interior. The square foundation slopes in toward the base of the twelve-sided structure, which is accessed by twin stairways that meet at a small landing in front of the doorway, facing north-northwest. Each of the twelve façades is carved in high relief with floral and geometric motifs, with additional panels containing flora and animal figures, including two sphinxes and a double-headed eagle.

The faces are accentuated by small columns at each corner that are joined to shallow pointed arches over each face. The transition from the dodecahedron of the main shaft to the conical roof is achieved with the arches. Two geometric decorative bands encircle the tomb below the *moqarnass* cornice.²⁵ The tomb aesthetically follows the same traditions that were used in the identical Iranian tomb towers such as the ones in Kashmar and Radkan.²⁶

²⁵ Akurgal, Ekrem. 1980. *The Art and Architecture of Turkey*. New York: Rizzoli, 88.

Aslanapa, Oktay. 1971. *Turkish Art and Architecture*. New York: Praeger, 144.

Gabriel, Albert. 1931-34. *Monuments Turcs d'Anatolie*. Paris: Editions de Boccard, II, 77-79.

²⁶ Akurgal, Ekrem. 1980. *The Art and Architecture of Turkey*. New York: Rizzoli, 88.

Aslanapa, Oktay. 1971. *Turkish Art and Architecture*. New York: Praeger, 144.

Gabriel, Albert. 1931-34. *Monuments Turcs d'Anatolie*. Paris: Editions de Boccard, II, 77-79.

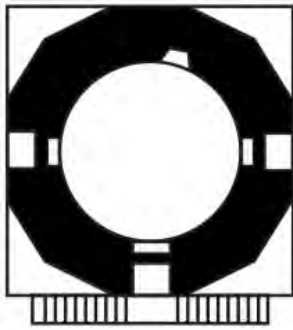


Figure 74

location	Döner Tomb, Kayseri, Turkey
Map Name	Floor plan of tomb tower
Source	Robert Hillenbrand ,Islamic Architecture , p:540



Figure 75

location	Döner Tomb, Kayseri, Turkey
Photograph Date	1989
Photographer	Murat Germen
Source	www.Arc net.org
Caption	Exterior view from west, showing tomb in public park



Figure 76

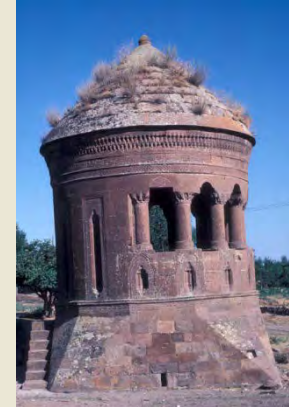
location	Döner Tomb, Kayseri, Turkey
Photograph Date	ca. 1960
Photographer	Walter B. Denny
Source	www.Arc net.org
Caption	Exterior view from southeast, the rear façade

- Comparison of Döner Tomb with Gonbad-e Qābus

Name	Floor plan	Height	Diameter	Material	Date
Gonbad-e Qābus		52.844m	17.415 m	Brick	4 th Century A.H 1006 A.D
Döner Tomb		16.5 m	8.25 m	stone	13 th Century D.H

3.c.2.6 Emir Bayindir Tomb

Variant Names	Emir Bayindir Kümbeti, Parmaklikli Kümbet, Parmaklikli Kümbed, Amir Bayindir Gunbad, Emir Bayindir Künbedi
Location	Ahlat, Turkey
Date	1491
Style/Period	Aq Qoyunlu
Century	15 th
Building Type	Funerary
Building Usage	Tomb



An inscriptive band below the cornice of the tomb announces that the building was built for *Bayindir ibn Rüstem*, who died in 1481 (886 A.H.). It was commissioned by his wife Shah Selime Hatun and completed in 1491 (897 A.H.). The architect is unknown but Baba Can Bey is mentioned as the builder on an inscriptive plaque found on the small mosque of Emir Bayindir to the north of the tomb. It was restored in 1967 by General Directorate of Religious Endowments in Turkey

The tomb was built as a part of a complex including a small mosque and zawiya (zaviye), which is now completely lost now. The spherical tomb is raised about two and a half meters above the ground on a crypt and covered with a dome topped with a shallow conical crown on the exterior.

The narrow door of the crypt, which is placed off center on the east façade, has sunken below the ground level and is reached by seven steps. It is about six and a half meters square on the interior and lit by narrow slits on the east, west and south walls. A barrel vault aligned east-west supports the chamber above.

The cylindrical body of the tomb sits on the square crypt whose corners are chamfered on the exterior to create a dodecagon base for the tomb chamber. The entryway faces the *qibla* wall of the mosque and is accessed with a double staircase. The door is framed by three decorative bands and crowned by an unusual *moqarnass* vault with floral carvings. Elongated niches on each side of the door are framed with a band of diamond motifs carved into the stone. The southern half of the cylinder facing the lake is opened with ten short columns defining nine windows. The columns are about one meter high and have heavy *moqarnass* capitals are connected with small arches. The parapet below is carved with ornate niches aligned vertically with the columns. The niche facing the *qibla* is left shallow to accommodate a *mihrab* niche inside the tomb.

The inscriptive band, bordered by decorative bands is placed below the moqarnass cornice. The tomb is made of red sand stone.²⁷

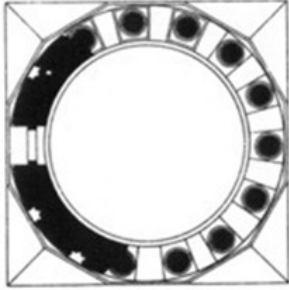


Figure 77

location	Emir Bayindir Tomb, Ahlat, Turkey
Map Name	Floor plan of tomb tower
Source	Robert Hillenbrand ,Islamic Architecture , p:540

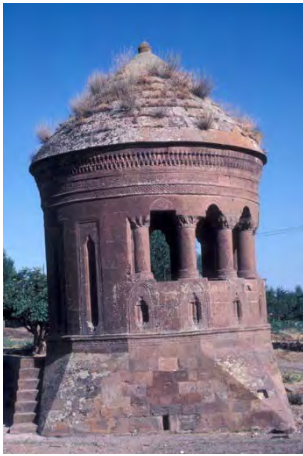


Figure 78

location	Emir Bayindir Tomb, Ahlat, Turkey
Photograph Date	1984
Photographer	Tülay Artan
Source	www.Arc net.org
Caption	West elevation



Figure 79

location	Emir Bayindir Tomb, Ahlat, Turkey
Photograph Date	1913
Photographer	Walter Bachmann
Source	www.Arc net.org
Caption	Exterior view from southeast

²⁷ Erken, Sabih. 1977. Türkiye'de Vakıf Abideler ve Eski Eserler. Ankara: Vakıflar Genel Müdürlüğü Yayınları, II, 262-267.

Sözen, Metin. 1981. Anadolu'da Akkoyunlu Mimarisi. İstanbul: Türkiye Turing ve Otomobil Kurumu, 155-157.

Uluçam, Abdüsselam. 2002. Ortaçağ Sonrasında Van Gölü ve Çevresi Mimarlığı II: Bitlis. Ankara: Türkiye Cumhuriyeti Kültür Bakanlığı Yayınları, 202-205.



location	Emir Bayindir Tomb, Ahlat, Turkey
Photograph Date	Unknown
Photographer	Unknown
Source	http://www.galenfrysinger.com
Caption	General view from southeast showing the tomb and the small mosque

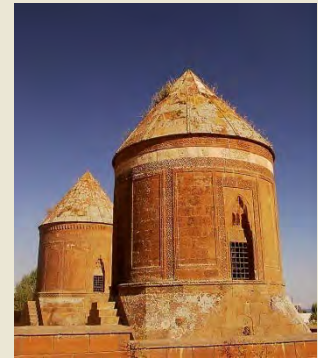
Figure 80

- Comparison of Emir Bayindir Tomb with Gonbad-e Qābus

Name	Floor plan	Height	Diameter	Material	Date
Gonbad-e Qābus		52.844m	17.415 m	Brick	4 th Century A.H 1006 A.D
Emir Bayindir Tomb		8.80 m	5.2 m	stone	15 th Century D.H

3.c.2.7 Hüseyin Timur and Eser Tekin Tomb

Variant Names	Hüseyin Timur and Eser Tekin Kümbeti, smaller one of the "Twin Tombs" (Çifte Kümbet, Çifte Kümbetler)
Location	Ahlat, İki Kubbe neighborhood, Turkey
Date	113 th c.
Style/Period	Seljuk
Century	13 th
Building Type	Funerary
Building Usage	Tomb



On the eastern edge of the most ancient of Ahlat's rural settlements, north of the track leading into the Old Town, two more tombs stand close together by the roadside. One, 14m/46ft high, originally built in 1279 for *Hasan Takin*, was used for a second time in 1729 by *Hasan Timur*. The other, 12m/39ft high, was constructed in 1281 for the Emir *Bugatay Aga*, whose wife *Sirin Hatun* was also interred there²⁸

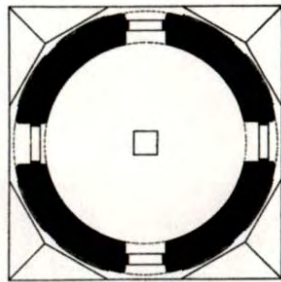


Figure 81

location	Hüseyin Timur and Eser Tekin Tomb, Ahlat, İki Kubbe neighborhood, Turkey
Map Name	Floor plan of Mausoleum
Source	Robert Hillenbrand, Islamic Architecture, p:540

²⁸ <http://www.planetware.com>



Figure 82

location	Hüseyin Timur and Eser Tekin Tomb, Ahlat, Iki Kubbe neighborhood, Turkey
Photograph Date	1913
Photographer	Walter Bachmann
Source	www.Arcnet.org
Caption	General view



Figure 83



location	Hüseyin Timur and Eser Tekin Tomb, Ahlat, Iki Kubbe neighborhood, Turkey
Photograph Date	1913
Photographer	Walter Bachmann
Source	www.Arcnet.org
Caption	General view of the "Twin Tombs" (Çifte Kümbet), with Tomb of Hüseyin Timur and Eser Tekin in the foreground and Tomb of Sirin Hatun and Bugatay Aka in the background



Figure 84

location	Hüseyin Timur and Eser Tekin Tomb, Ahlat, Iki Kubbe neighborhood, Turkey
Photograph Date	2008
Photographer	O.Seref Halicioglu
Source	http://www.panoramio.com/photo
Caption	General view of the "Twin Tombs" (Çifte Kümbet), with Tomb of Hüseyin Timur and Eser Tekin in the foreground and Tomb of Sirin Hatun and Bugatay Aka in the background

- Comparison of Amir Sulayman Mausoleum with Gonbad-e Qābus

Name	Floor plan	Height	Diameter	Material	Date
Gonbad-e Qābus		52.844m	17.415 m	Brick	4 th Century A.H 1006 A.D
Hüseyin Timur and Eser Tekin Tomb		10 m (almost)	8 (almost)	Stone	13 th A.D

3.c.2.8 Gudi Khatun Tomb Tower

Variant Names	Qarabaglar Türbasi, Qarabaglar Türbesi, Qudi Xatun Türbasi, Qudixatun Türbesi, Jehan Kudi Khatun Tomb, Mausoleum at Karabaghlar, Karabaghlar Gunbad, Karabaglar Kümbedi
Location	Karabaghlar, Azerbaijan
Date	1335-1338
Style/Period	Il-Khanid
Century	14 th
Building Type	Funerary
Building Usage	Tomb, mausoleum



The mausoleum overlooks *Karabaghlar* village in the Nakhichevan Autonomous Republic of Azerbaijan. It was commissioned by Il-Khanid ruler Abu Said Bahadur Khan (1316-1335) for *Jehan Gudi Khatun* and built between 1335 and 1338. A monumental gateway with twin minarets was added at a later time. Only the truncated minarets of the gateway and the unroofed mausoleum were remaining on the site until 1999, when an extensive restoration project was initiated through the Azerbaijan Cultural Heritage Support Program of the World Bank. Completed in 2003, the restoration work stabilized the existing structures, while also rebuilding critical components, such as the mausoleum's dome.

The mausoleum is a cylindrical tower made of twelve semi-cylindrical flanges on the exterior. It is raised on a dodecagonal base made of cut stone, which encloses a vaulted crypt. It was originally roofed with a conical crown covering an inner dome. Both domes collapsed at an unknown date, leaving the interior exposed to the elements until the addition of the domical cap in 2002.

Four doorways placed on the cardinal axes give access to the twelve-sided dome chamber. The doorways are identically set in tall rectangular frames and crowned with shallow *moqarnass* hoods, all covered in tile mosaic with floral arabesques. The northern entrance is differentiated with a deeper portal recess and bears an inscriptive plaque.

The exterior surface of the mausoleum is covered entirely with a red brick and turquoise tile pattern composed of the names of God, the Prophet, and Caliph Ali, written in *Kufic* style. A wide inscriptive band of *Kufic* characters runs below the *moqarnass* cornice, bordered with narrow bands of chain motifs.

The interior is now devoid of decoration except for the twelve tall niches on its walls, separated by pilasters.

The remaining foundation walls of the mausoleum's gateway show that it was a rectangular structure measuring fifteen meters by nineteen meters on the exterior, divided into multiple rooms. Its portal recess was flanked by two minarets, whose base and lower shafts are the only parts remaining from the original structure. Three rooms surrounding the portal were rebuilt sometime in the second half of the twentieth century. The twin minarets were strengthened with steel cables and capped with glass during the restoration.²⁹



Location	Gudi Khatun Mausoleum, Karabaghlar, Azerbaijan
Map Name	Floor plan of Mausoleum
Source	Robert Hillenbrand, Islamic Architecture, p:532

Figure 86



Location	Gudi Khatun Mausoleum, Karabaghlar, Azerbaijan
Photograph Date	Unknown
Photographer	Unknown
Source	http://www.Kufic.info.org
Caption	General view

²⁹ Aslanapa, Oktay. 1979. *Kirim ve Azerbaycan'da Türk Eserleri*. Istanbul: Baha Matbaasi, 84-92.

Ayvazian, Argam. 1988. *The Historical Monuments of Nakhichevan*. Detroit: Wayne State University Press, 90-92.

Fatullayev, S.S. and R.S. Babasov. 2005. "Memarlıq". *Maison d'Azerbaidjan Website*.

http://www.azmaison.fr/az/index_az.shtml?language=2;section=4;section2=4. [Accessed November 2, 2005]

Gink, Kalory and Ilona Turanszky. 1979. *Azerbaijan: Mosques, Turrets, Palaces*. Budapest: Corvina Kiado, 41-43.

Michel, George (ed.). 1995. *Architecture of the Islamic World: Its History and Social Meaning*. London: Thames and Hudson, 259.

"Azerbaijan Cultural Heritage Support Project." *World Bank Website*. <http://web.worldbank.org>

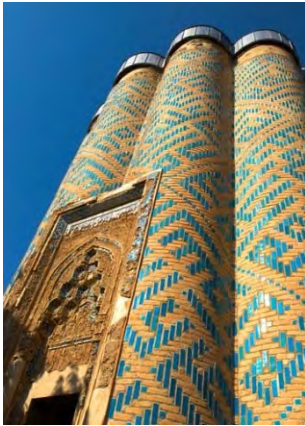


Figure 87

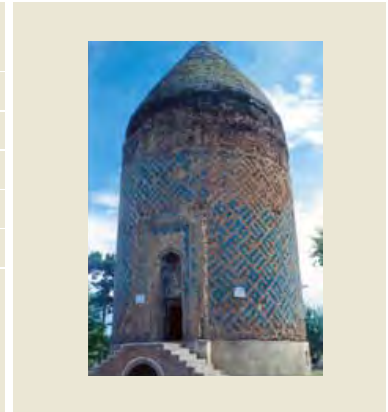
location	Gudi Khatun Mausoleum, Karabaghlar, Azerbaijan
Photograph Date	Unknown
Photographer	Unknown
Source	http://www.Kufic.info.org
Caption	General view

- Comparison of Gudi Khatun Mausoleum with Gonbad-e Qābus

Name	Floor plan	Height	Diameter	Material	Date
Gonbad-e Qābus		52.844m	17.415 m	Brick	4 th Century A.H 1006 A.D
Gudi Khatun Mausoleum		16 m (almost)	5m (almost)	Brick	13 th Century D.H

3.c.2.9 Tomb Tower at Barda

Variant Names	Barda Turbasi, Barda Gunbad, Berdaa Tomb Tower, Berde Kümbedi, Mausoleum at Barda'a
Location	Barda, Azerbaijan
Date	1323 (722 AH)
Style/Period	Il-Khanid
Century	14 th
Building Type	Funerary
Building Usage	Tomb



The tomb tower is located in the village of Barda, which was a town of importance in the tenth century and that later became a favored resort of the Il-Khanid rulers, who held their provincial capital at *Maragha*. Arabic inscriptions above its two portals announce that the tomb was erected in 1323 (722 A.H.) by builder Ahmad bin Ayyub al-Hafiz of Nakhichevan. Locally, it is also known as the Mausoleum of *Ahmad Zocheybana*.

The tomb tower is a cylindrical brick structure that stands fourteen meters tall. It has a shallow octagonal base made of four rows of cut-stone and a vaulted crypt. Its inner dome was originally covered with a conical crown decorated with tiles; the current conical roof was added in the second half of the twentieth century. The octagonal dome chamber is entered from two portals facing north and south. *Moqarnass* hoods crown the arched portal recesses, which are set in frames decorated with bands of geometric motifs and inscriptions made of tile mosaic. Both portals are largely stripped of their decoration.

Inside, the walls are animated with shallow rectangular niches crowned with slightly pointed arches. Pilasters set between the niches reinforce the decagonal shape of the interior. The transition to the inner dome is achieved with three rows of *moqarnass* squinches.

The exterior of the tomb is covered with a pattern of glazed bricks, composed of the name of God written in *Kufic* script. Remains of an inscriptive tile band with raised letters envelop the rim, bordered with narrow tile bands with chain motif. The *moqarnass* cornice above it is also largely damaged³⁰.

³⁰ Aslanapa, Oktay. 1979. *Kirim ve Azerbaycan'da Türk Eserleri*. Istanbul: Baha Matbaasi, 93-97.

Fatullayev, S.S. and R.S. Babasov. 2005. "Memarliq". *Maison d'Azerbaïdjan Website*.

http://www.azmaison.fr/az/index_az.shtml?language=2;section=4;section2=4. [Accessed November 2, 2005]

Wilder, Donald N. 1969. *The Architecture of Islamic Iran: The Il-Khanid Period*. New York: Greenwood Press, 159.

Bosworth, C. E. 1983. "Barda'a". *The Encyclopedia of Islam*. Leiden: E. J. Brill, I, 779-780.

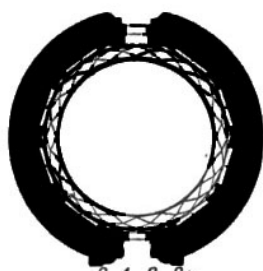


Figure 88

location	Tomb Tower at Barda, Barda, Azerbaijan
Map Name	Floor plan of Mausoleum
Source	Iranian Architecture of The Islamic Period, Ed: M.Y Kiyani



Figure 89

location	Tomb Tower at Barda, Barda, Azerbaijan
Photograph Date	Unknown
Photographer	Unknown
Source	http://www.Azernaijan24.com
Caption	General view



Figure 90

location	Tomb Tower at Barda, Barda, Azerbaijan
Photograph Date	Unknown
Photographer	Unknown
Source	http://www.Azerbaijan.az
Caption	General view

-
- Comparison of Tomb Tower at Barda with Gonbad-e Qābus

Name	Floor plan	Height	Diameter	Material	Date
Gonbad-e Qābus		52.844m	17.415 m	Brick	4 th Century A.H 1006 A.D
Tomb Tower at Barda		14 m	9 m	Brick	14 th Century D.H

3. c.2.10 Mama Hatun Tomb tower

Variant Names	Mama Hatun Kümbedi, Mama Hatun Kümbedi, Melike Mama Hatun Türbesi, Mama Khatun Gunbad
Location	Tercan, Turkey
Date	mid or late 13th c
Style/Period	Saltukid
Century	13 th
Building Type	Funerary
Building Usage	Tomb



The tomb is located at the city center of Tercan, across from the caravanserai of *Mama Hatun*. It is thought to belong to *Mama Hatun*, a daughter of *Izz al-din Saltuk II* who headed the Erzurum-based Saltukid Emirate between 1191 and 1201. There are no inscriptive plaques to confirm this attribution, and the tomb has been otherwise dated to the mid or late thirteenth century. The architect's name, *Ebu'n-Nema bin Mufaadalü'l-Ahvel* of Ahlat, is inscribed on either side of the portal recess. It has been thoroughly restored by the General Directorate of Religious Endowments (Vakıflar Genel Müdürlüğü).

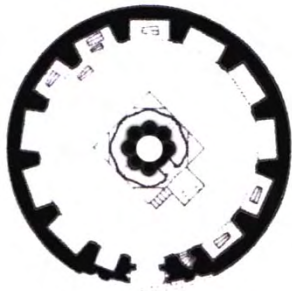
The tomb consists of a cylindrical tower enveloped by a circular fortification that is 4.60 meters tall and 17.35 meters in diameter. Its west-facing portal rises 2.40 meters above the fortifications. The shallow doorway of the portal is crowned by a tall *moqarnass* hood and flanked by embedded columns. Its arched frame is inscribed in *Kufic* style with a verse from the *Ihlas* sura. A second Quranic plaque is set above the doorway, while the names of the prophet and four caliphs adorn the capitals of the flanking columns. The elaborate geometric carvings of the portal frame have only survived in sections.

A series of steps lead down from the portal into the stone-paved tomb courtyard. The courtyard walls are carved with eleven deep niches, one of which holds a carved stone sarcophagus from 1247. Two narrower niches flank the portal; the one to the right has a fountain while the other contains the staircase leading to the top of the four-and-a-half-meter-thick fortifications.

The cylindrical tomb tower is centered inside the courtyard and raised on an octagonal base enclosing a square crypt. Seven steps lead up to the southwest-facing tomb portal while a second staircase under the portal landing leads down into the crypt. Its exterior

is braced by eight semi-circular buttresses, giving it an undulating profile emphasized with a thick cornice. The interior, which is dimly lit with three windows, is carved with eight semi-circular

niches that correspond to the projecting buttresses. It is covered with an umbrella vault with eight ribs, capped by conical crown on the exterior at ten and a half meters. The surface of the lead-covered crown undulates with the tower's walls. The crypt is covered with a cross-vault.³¹



location	Mama Hatun Tomb, Tercan, Turkey
Map Name	Floor plan of Mausoleum
Source	Robert Hillenbrand, Islamic Architecture, p:390

Figure 91



Figure 92

location	Mama Hatun Tomb, Tercan, Turkey
Photograph Date	1970
Photographer	Walter B. Denny
Source	www.Arcnet.org
Caption	General view from southwest, showing circular fortifications, with portal



Figure 93

location	Mama Hatun Tomb, Tercan, Turkey
Photograph Date	1970
Photographer	Walter B. Denny
Source	www.Arcnet.org
Caption	View of tomb tower from ramparts, looking east-northeast

³¹ Bayrak, M. Orhan. 1994. Türkiye Tarihi Yerler Kılavuzu. İstanbul: İnkilap Kitabevi, 211-212.
Önkal Hakki. 1996. Anadolu Selçuklu Türbeleri. Ankara: Atatürk Kültür, Dil ve Tarih Yüksek Kurumu, 437-442.

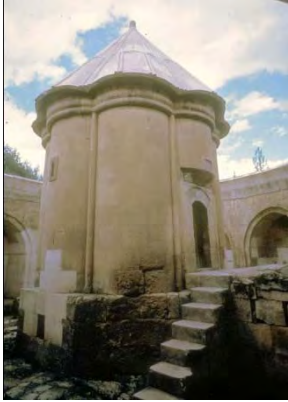




Figure 94

location	Mama Hatun Tomb, Tercan, Turkey
Photograph Date	1970
Photographer	Walter B. Denny
Source	Aga Khan Visual Archive, MIT
Caption	View of tomb tower in courtyard, looking northeast at doorway and staircase

- Comparison of Mama Hatun Tomb with Gonbad-e Qābus

Name	Floor plan	Height	Diameter	Material	Date
Gonbad-e Qābus		52.844m	17.415 m	Brick	4 th Century A.H 1006 A.D
Mama Hatun Tomb		6.40 m	3 m	Stone	13 th Century D.H

3. c.2.11 Conclusion

	Name	Floor plan	Height	Diameter	Material	Date
1	Gonbad-e Qābus		52.844m	17.415 m	Brick	4 th Century A.H 1006 A.D
2	Mu'mine Khatun		25 m	13.83 m	Brick	12 th Century D.H
3	Halime Hatun Tomb		10 m	6.80 m	Brick	14 th Century D.H
4	Zeynel Bey Tomb		16.5 m	5.68 m	Brick	15 th Century D.H
5	Döner Tomb		16.5 m	8.25 m	stone	13 th Century D.H
6	Emir Bayindir Tomb		8.80 m	5.2 m	stone	15 th Century D.H
7	Hüseyin Timur and Eser Tekin Tomb		10 m (almost)	8 (almost)	Stone	13 th A.D
8	Gudi Khatun Mausoleum		16 m (almost)	5m (almost)	Brick	13 th Century D.H
9	Tomb Tower at Barda		14 m	9.30 m	Brick	14 th Century D.H
10	Mama Hatun Tomb		6.40 m	3 m	Stone	13 th Century D.H

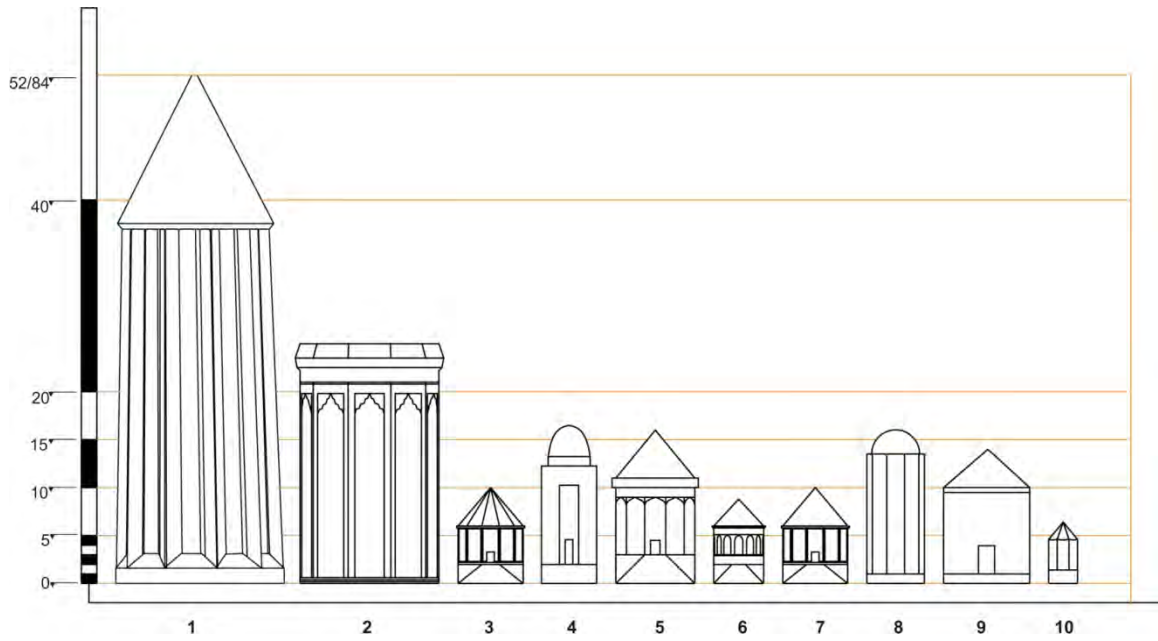
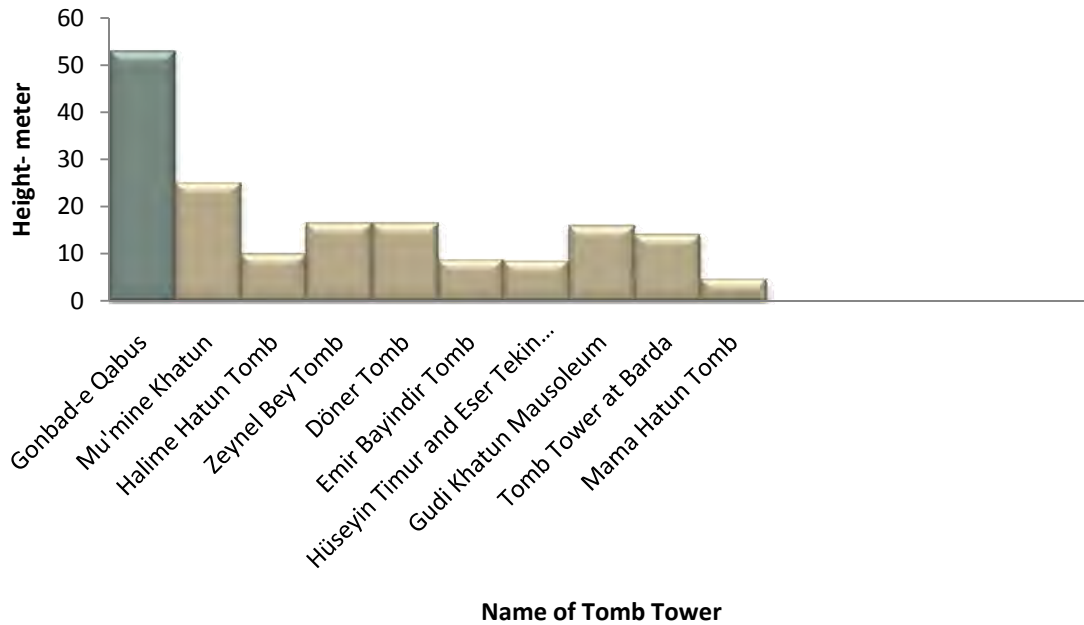


Figure 95

- | | |
|-------------------|---------------------------------|
| 1- Gonbad-e Qābus | 6- Emir Bayindir |
| 2- Mu`mine Hatun | 7- Hüseyin Timur and Eser Tekin |
| 3- Halime Hatun | 8- Güdi Khatun |
| 4- Zaynel bey | 9- Barda |
| 5- Döner | 10- Mama Hatun |



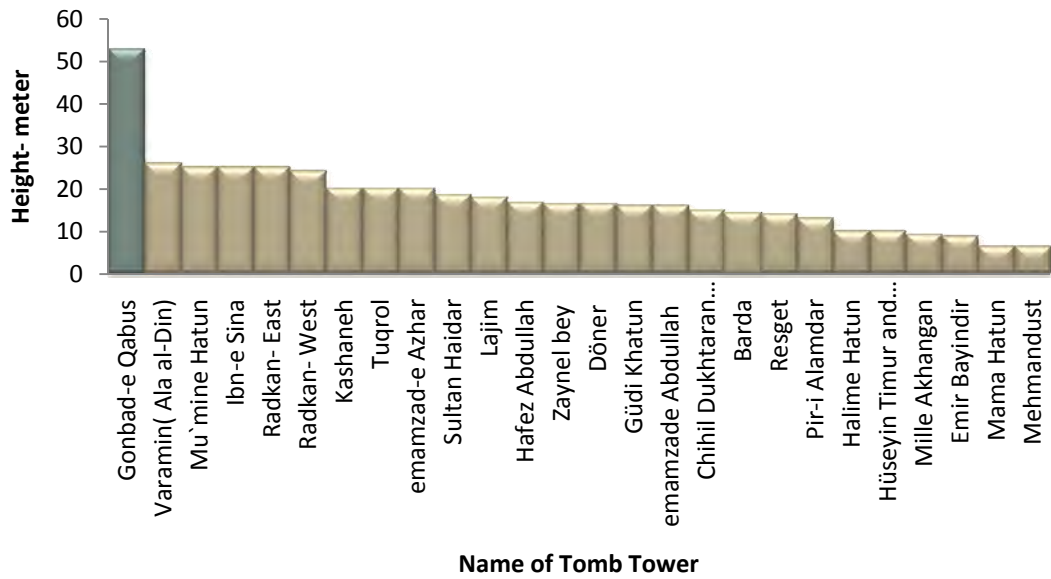
The same conclusion as the one drawn for the comparison between Gonbad-e Qābus and other tomb towers within Iran is reached here. Gonbad-e Qābus is the oldest model for the frank tomb tower in the world and at the same time in terms of height, and architectural and structural features, the most complete of the type.



Figure 96

- | | |
|-------------------|---------------------------------|
| 1. Gonbad-e Qābus | 6. Barda |
| 2. Mu`mine Hatun | 7. Halime Hatun |
| 3. Zaynel bey | 8. Hüseyin Timur and Eser Tekin |
| 4. Döner | 9. Emir Bayindir |
| 5. Güdi Khatun | 10. Mama Hatun |

Height comparison between Gonbad-e Qābus and the above-mentioned tomb towers in World



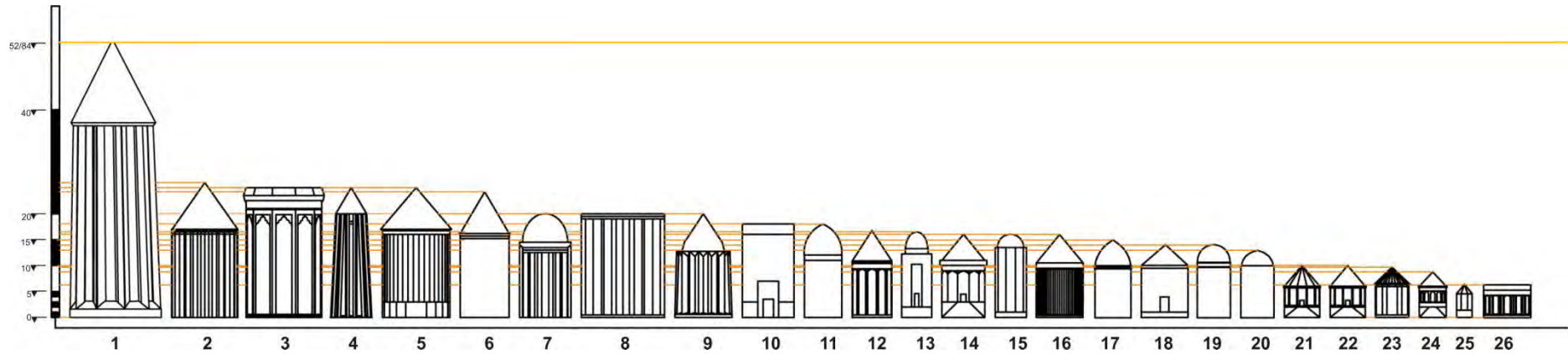


Figure 97

- | | | |
|-------------------|-----------------------|---------------------------|
| 1. Gonbad-I Qabus | 11 Lajim | 21 Halime Hatun |
| 2. Varamin | 12 Hafez Abdullah | 22 Hüseyin Timur and Eser |
| 3. Mu`mine Hatun | 13 Zaynel bey | Tekin |
| 4. Ibn-e Sina | 14 öner | 23 Akhangan |
| 5. Radkan-East | 15 Khatun | 24 Emir Bayindir |
| 6. Radkan- West | 16 Emamzade Abd ullah | 25 Mama Hatun |
| 7. Kashaneh | 17 Chihil Dukhtaran | 26 Mehmandust |
| 8. Tuqrol | 18 GüdiBarda | |
| 9. Emamzade Azhar | 19 Resget | |
| 10.Sultan Hidar | 20 Pir-e Alamdar | |

3. d. Integrity and/or Authenticity

Gonbad-e Qābus which can be considered as the prototype of the tomb towers with conical roof is in effect the heir of all the knowledge and genius of its time in the fields of mathematics, geometry, architecture, construction and building materials and has an unquestionable level of authenticity. It has therefore succeeded in transferring of these valuable heritages to the contemporary generation through its massive and towering body. For over one thousand years, it has withstood all the deteriorating and damaging factors such as storms, rains, earthquakes, weathering, wars and other man-made or natural elements of destructions. Now after all those long decades Gonbad-e Qābus still stands unaffected and proud as a monument of human art and science. Its solid and deep foundation, masterly planned and executed, has effectively protected its massive and tall body throughout ages.

The authenticity and integrity of this masterpiece of human talent, genius and intellect can be described based on the following issues:

3. d.1 Integrity

The issue of integrity can be discussed based on the following points:

3. d.1-1 Visual Integrity

Gonbad-e Qābus with its cylindrical stem, conical roof, brick work decorations in so-called *Gereh kari* (fretwork) style, and stucco works on some parts and prevalent pea color stands atop a conic shaped hill near the ancient town of *Jorjan*. All the elements related to the visual integrity of the building have remained unchanged beside each other in their original forms complete and without defects. In recent years controlled illumination of the building itself and landscaping design of its surroundings were conducted for better presentation of the monument. It is now planned that within a short-time management of the site the illumination and landscaping are reorganized respecting fully the visual integrity of the monument.

3. d.1-2 Structural Integrity

Gonbad-e Qābus which occasionally is referred to as a masterpiece of structural works in architecture has preserved its structural integrity during its over one thousand year's history. The engineering intelligence inherent within its design, its high technology of construction and excellent location on top of a hill with a high resistance together have led to the preservation of its integrity with all its relevant elements despite the existence of various man-made and natural harmful factors.

3. d.1-3 Functional Integrity

The function of the structure is regarded as one of unsolved enigmas of its historical life. Generally, it is believed that it was built as a tomb tower but no archaeological finding as yet has proved that it is the case. In addition the absence of any other historical structures of the same age near the monument, its significant distance from the historical town of *Jorjan*, the exceptional engineering precision used in its design and construction, lack of any inscription supporting the religious or burial function of the building and finally its doubtlessly unique and matchless form are some of the points which necessitate further historical and scientific investigations so that the exact function/functions of the building is known. However as the inscription on top of its entrance testifies the tower was constructed with the aim of creating an exceptional monument illustrating the exceptional knowledge and art of its founders and builders. Should this be the case, then it is to be admitted that after the passage of approximately one thousand years since its construction, it still continues to illustrate this function fully and in the best fashion, because *Gonbad-e Qābus* can still be easily regarded as a prominent symbol of human genius.

3. d.2 Authenticity

3. d.2-1 Design

The circular and dome-shaped plan of Gonbad-e Qābus as a monument to the skills and knowledge of the architects as well as the craftsmanship of the master builders of the northern part of Iran with its humid climate has been able to keep its general design intact for more than millennia. The tower lacks any blemishes concerning the authenticity of its design and shape (Design details of this masterpiece of architecture has carefully been presented in the annexed plans and drawing in which the design authenticity of the monument can clearly be observed).

3. d.2-2 Materials

Bricks, gypsum (*gatch*) and *Sarooj* mortars are the main building materials used in the construction of the monument. All of these materials have been preserved within the building body without any significant changes. In addition, during restorations works conducted in the course of time no sign of any incompatible interventions or use of unoriginal materials can be found. Thus the structure has remained perfect in terms of authenticity of the materials.

3. d.2-3 Setting

The setting or the location of the monument is on the top of a hill at the center of the modern town of Gonbad-e Kāvus. It stands within a pre - determined and meaningful distance from the historical town of *Jorjan* in the low lands of Gorgan plain. It can definitely be stated that the location, where it was designed and built is certainly original and has continued for more than a thousand years without any alteration atop the same historical hill. Therefore, it enjoys the authenticity of setting.

3. d.2-4 Workmanship

As mentioned earlier, this architectural masterpiece can be regarded as one of the first prototypes of construction techniques as well as architectural decorations in the world architectural history (This issue has been extensively discussed in detail in sections on the description and outstanding universal value or OUV). Moreover, not only the authenticity of its workmanship has not been changed in its life time but also it has served as a scientific and practical model for modern master builders, architects, researchers and developers. The entire restorations works conducted on the structure have fully respected the workmanship authenticity finalized after sufficient discussions with several experienced craftsmen and academic master builders with due consideration of the original methods of construction within joint projects.

Generally, it can be said that Gonbad-e Qābus is one of the oldest and most authentic Iranian tomb tower with its main architectural features fully preserved for more than one thousand years, conveying, powerfully, all of its values to the following generations. Actually, only a few historical buildings as old as Gonbad-e Qābus still remain fully intact without suffering major structural damages, a fact that once again show, evidently, the ingenuity and high intelligence of its designers and builders.

4

State of Conservation and Factors Affecting the Property

4.State of conservation and factors Affecting the Property

4. a Present state of conservation

A brief history of restorations conducted in Gonbad-e Qābus

The structure of Gonbad-e Qābus may have suffered damages in different periods of its history. But finding the exact dates and contributing factors need more research and study. For example, Robino, the well known traveler who visited Mazandaran area in the years 1287-1288 A.H writes this in his travelogue: " *Once a ruler of Gilan ordered to dig all around the tower because he thought a treasure was buried there. But when he was told that this might lead to the death of all the diggers he changed his mind.*"

Also Asadollah Moieni, one of the authors of the history of *Astar abad* states that: " *When Nader Shah, the famous Afsharid king came to northern Iran and saw Gonbad-e Qabus from far away he was relieved because after traveling a long distance he was exhausted and imagined that there should be a major town there but getting closer when he found out that it was only a small and almost abandoned village, he became very disappointed and ordered the destruction of the tower but fortunately his command was not followed.*"

As mentioned before that the Russians and the British had excavated the area of the tower several times in the past hoping to find the possible tomb and its treasures but to no avail. Additionally, during the First World War (between the years 1914-18 coincided with 1293-97 SAH) because Russian forces decided to station in the town Gonbad and beside Gonbad-e Qābus hill, the structure suffered some damages.

Investigations made in 1304 SAH showed that about 1500 bricks were broken or dislocated because of the bullets fired at the site. Moreover, the upper and lower surfaces around its eastern opening as well as the lines of its inscriptions (الامير بن الامير) and (قابوس ابن وشمگیر) attributing it to *Qābus Ibn Voshmgir* . In 1308 SAH, Andre Godard was commissioned to carry out the restoration works on Gonbad-e Qābus. He made several repairs with the help of a few experienced Iranian master builders.

During the second world war (between 1938-43 coincided with 1318-21 SAH) despite the fact that the area was not a scene of battle but military troops advanced as far as *Shahrud* and due to the presence of the Russian forces as well as the customs house in the town, the tower suffered additional damages.

The first viable restoration report available is written by Mr. *Nasrollah Meshkati* who was assigned the job of repairing and restoring the tower in 1317-18 SAH. He writes the following about the project he undertook: " *The structure of Gonbad-e Qābus has suffered major damages due to negligence and incursion so that in some parts of the foundation, holes were made with a depth of 2-2.5m. Some of the bricks had been removed to be used elsewhere. Apart from damages to the foundation and the foot of the structure, its conic roof was also damaged, especially on its east and west sides so that about 1500 of the bricks were broken and dislocated due to direct bullet hits. All around the east opening there were damages and part of the lines of the inscriptions (الامير ابن المير و قابوس ابن وشمگیر) had collapsed. The building interior also needed some repairs. At last, in 1304 SAH, repairs of the foot and the platform (Suffa) was carried out and in 1310 SAH Gonbad-e Qābus was inscribed as a national monument under reference number 86. In 1316 SAH, Russians excavated the mid section of the tower to a depth of 11 meters in order to find the corpse of Qābus but it was useless and they mentioned that the tower root still continued beyond this range.*"

In 1317 SAH scaffoldings were erected at the middle of the western part in order to repair the dome. Repairs lasted for about one year and a ladder with 33 steps was installed before the end of the operation. In *Shahrivar* (August) of 1318 SAH a crane and other necessary equipments were brought in for restoration purposes and special roof bricks were made and used for restoration. Within a period of three months, (i.e. until *Azar* 1318 SAH coincided with around December 1939) restoration of the dome, inscriptions and the base as well as inside of the tower were finished.

As said before, concurrent to the Second World War and during the years 1318-21 SAH, the Russian custom house was built at the foot of the tower. According to the documents available, the foot of the tower was again restored in 1340 SAH although no reliable data on the subject is at hand. Additionally, Mr. *Meshkati* as well as Mr. *Seyyed Ali Karimian* who is the author of a book titled: " *The Historical, Ancient City of Jorjan and Gonbad-e Qābus*" have mentioned that in 1348-49 SAH brick decorations of the tower were restored but the location and type of the operation are as yet unknown. In 1355-58 SAH coincided with the Islamic Revolution uprising, the the bricks of the conic roof as well as parts of the body were damaged.

In 1372 SAH the ICHHTO Base in Mazandaran Province began to implement a reorganizing and landscaping plan on the hill and also on the green area of Gonbad-e Qābus. of the work consisted of: constructing ascending ramps and walkways on the hill, flooring, flower beds, water basins, etc...It was actually the last restoring and landscaping activity in recent years.

In 1376 SAH (1998) an international conference and ceremonies were held at the site on the occasion of the millennial of the construction of c Gonbad-e Qābus.

On the 5th Esfand 1383 SAH (2005) the ICHHTO Base in *Jorjan* and Gonbad-e Qābus was established and in Winter of 1384 SAH (2006) some minor restoration and cleaning activities were conducted as emergency conservation work. In the following years some further conservation activities, detailed below, were implemented:

- 1- Preparing a management and restoration plan by the Gonbad-e Qābus Base
- 2- Sampling of tower construction materials (bricks and mortars) for analytical examinations
- 3- Erecting scaffoldings at the site in 1384 SAH (2006).

In 1385 SAH (2007) :

- 1- Completion of the scaffolding, construction of the stairway, improving security and safety measures, preparing the site for the restoration of the roof;
- 2- Equipping the restoration workshop and eliminating immediate dangers affecting the site;
- 3- Holding a number of technical sessions of ICHHTO in summer and autumn of 1385 (2007) SAH for the purpose of regular monitoring of the restoration operations;
- 4- Conducting conservation and restorations measures as well as emergency risk elimination during the second half of 1385 SAH i.e.: removing of grass and lichens, removing of grass seeds, fixing the bricks plaster and Primal solution, bricks pointing, injection of Primal solution behind the loosened bricks, spraying insecticides, sprinkling Silicate on the conic surface of the building, cleaning of the inscriptions from droppings and grime, washing with water, cleaning with a solution of water and alcohol.
- 5- Dismantling the scaffoldings and clearing up the surrounding area from any trace of building materials or weeds;

1386 SAH (2008):

- 1- Clearing of the area and removing weeds from the site
- 2- Implementation of flooring and landscaping project in a 1000 square meters area of the hill surface;
- 3- Illumination of the tower and hill area;
- 4- Pursuing, successfully, a legal case concerning Qābus Commercial Complex in the Gonbad City court. Was reduced to As a result the height of the commercial building was reduced. Attempts were also made to improve interactions with Gonbad-e Kāvus Municipality as well as holding regular meetings for this major aim with the participation of the city authorities and ICHHTO representatives;
- 5- Surveying the area of the tower by the laser scanning method.

1387 SAH (2009):

- 1- Performing soundings phase of the soil mechanical studies on the hill of Gonbad-e Qābus during summer time;
- 2- Conducting supplementary lightings;
- 3- Some restoration works inside the tower to stabilize the bricks in the floor and wall;
- 4- Performing the surveying, photogrammetry and documentation of the tower and its surroundings area;
- 5- Flooring of all the walkways around the complex;

1388 SAH (2010)

Digging archaeological trenches in 2m by 2m dimensions to a depth of 15m within the hill area and the foot of the building for the purpose of identifying the historical bed of the structure, its craftsmanship, construction style of the foundation as well as forthcoming challenges in order to take the most efficient methods of conservation;

- 1- Analysis, photography, documenting, drawing cross sections of the trenches, working on the ceramics and other cultural materials unearthed and finally submitting a report on the archeological activities;
- 2- Updating the information of the web page about Gonbad-e Qābus in [www.paygaha. Ir](http://www.paygaha.ir)
- 3- Continued cooperation with the university students, visitors, interested people and NGOs concerning the improvement of the culture of conservation among the experts and ordinary people in Gonbad-e Qābus at local and regional levels;
- 4- Cooperation in organizing the Archaeology and Restoration Seminar on behalf of Golestan Higher Education Institute concerning Gonbad-e Qābus with particular attention to the conservation and preservation of the site;

1389 SAH (2011):

- 1- Clearing up and reorganizing the hill area removing of the grass;
- 2- Conducting minor restoration works
- 3- Reviewing the core zone and buffer zone maps and regulations;
- 4- Regular supervision and maintenance activities;
- 5- Establishing the Handicraft Museum ;
- 6- Reorganization of the surroundings, improvement of the illumination, putting wooden doors instead of metallic ones..

4. b. Factors affecting the property

Factors affecting the site of Gonbad-e Qābus can be classified as the followings:

4.b.1 Physical damages and factors:

4.b.1-1 Moisture

4.b.1-2 Wind

4.b.1-3 Temperature

4.b.1-4 Earthquake

4.b.2 Chemical structural damages:

4.b.2-1 Bricks

4.b.2-2 Mortar

4.b.3 External chemical damages

4.b.3-1 Air pollutants

4.b.4 Biological and human damages

4.b.4-1 Biological damages

4.b.4-2 Human damages

4.b.5 Urban development

4.b.6 Landscape damages

4.b.1. Physical damages:

4.b.1.1. Moisture

There are two types of moisture in the historical site of Gonbad-e Qābus: ascending and descending:

- a.** Ascending moisture: it moves from the grounds up toward walls. Here, it moves toward the walls of Gonbad-e Qābus due its penetration into the foundation. These types of moisture are usually caused by the followings:

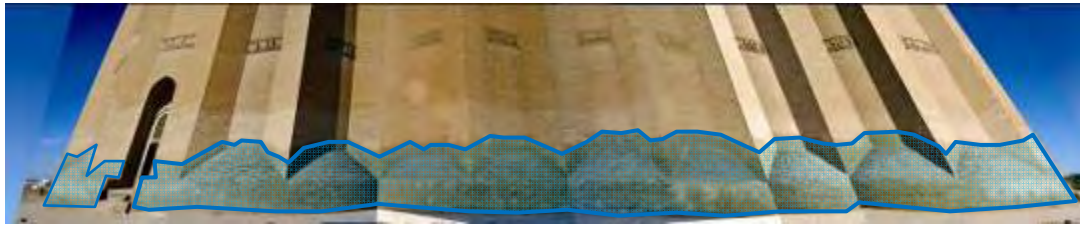


Figure.1- The ascending and descending moisture

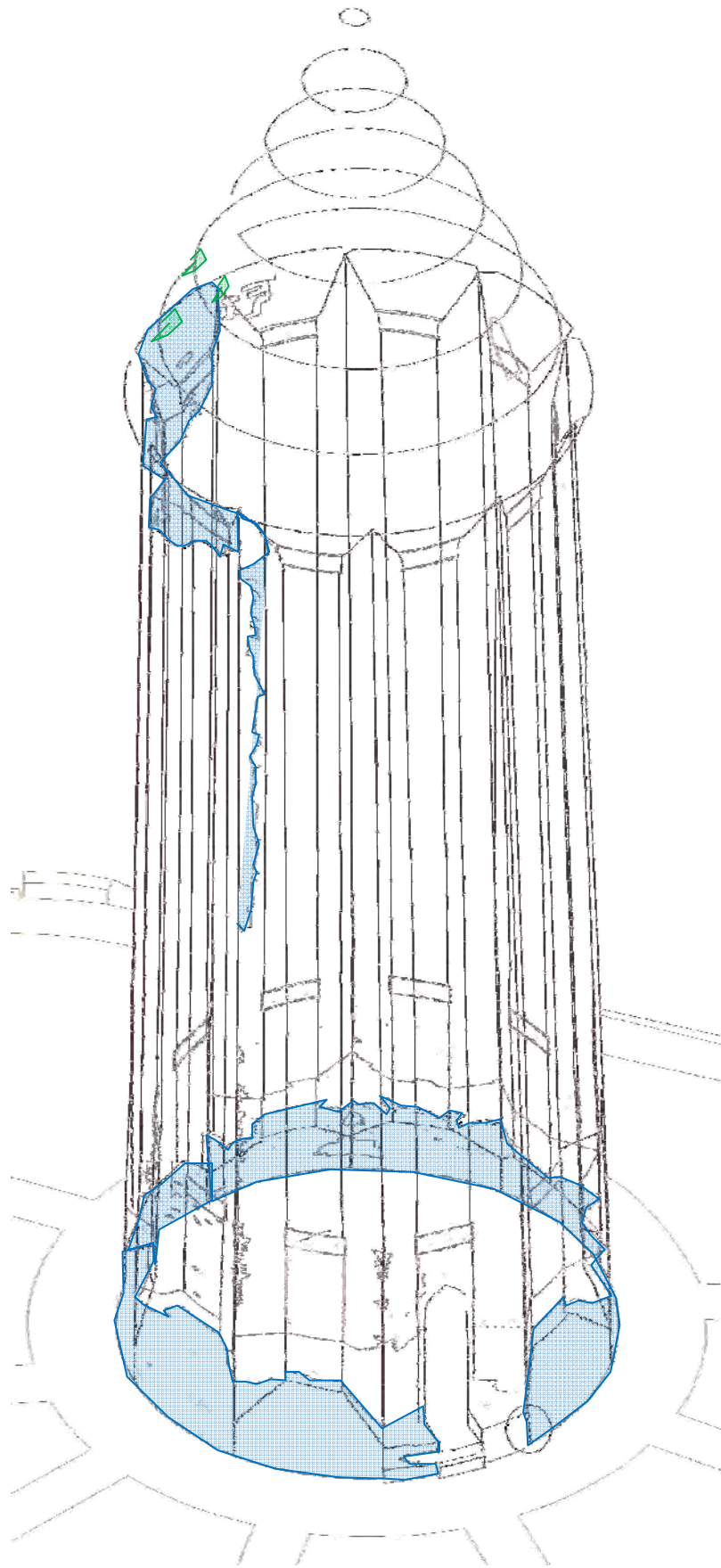


Figure .2- Ascending and descending moistures

- Lack of proper landscaping around the tower
- Improper controlling and drainage of the surface waters
- Making flowerbeds and planting trees near the foundations of the building
- Rise in the level of groundwaters
- Water absorbency of the materials used in the structure such as the bricks
- Use of materials such as cement, bitumen sack, and oil paints, which keeps the moisture inside the walls and foundations, and lets it penetrate into the upper parts

In order to remove and stop the ascending moisture, a canal was dug around the building measuring 50cm wide and 100cm deep. Nevertheless, as this is not enough for moisture of the structure, plan for revising and improving the condition is underway. The issue has carefully been studied by the experts of the base. Accordingly, the following results are gained which are to be implemented within the short- and mid-term preservation objectives of Gonbad-e Qābus:

- 1- Making the canals larger in size
- 2- Cutting the connection between the foundation and the surrounding damp lands
- 3- Providing ventilation in the canal and allowing circulation of the air in order to control and balance the moisture level;
- 4- Controlling and proper drainage of the surface waters around the structure
- 5- Replacing the cement mortar from the earlier restoration works with suitable mortar;

b. Descending moisture: the origin of this type of moisture is respiration. The following are the factors, which may cause the formation of this type of damp:

- 1- High humidity content of the area
- 2- Respiration, wind blow, the direction of sunshine, and the considerable height of the tower
- 3- The inclination of the roof
- 4- Not repairing and replacing the time-worn bricks and mortars when needed
- 5- Not removing the weeds and grass at the right times and seasons

What follows is a list of physical damages that may result in these circumstances:

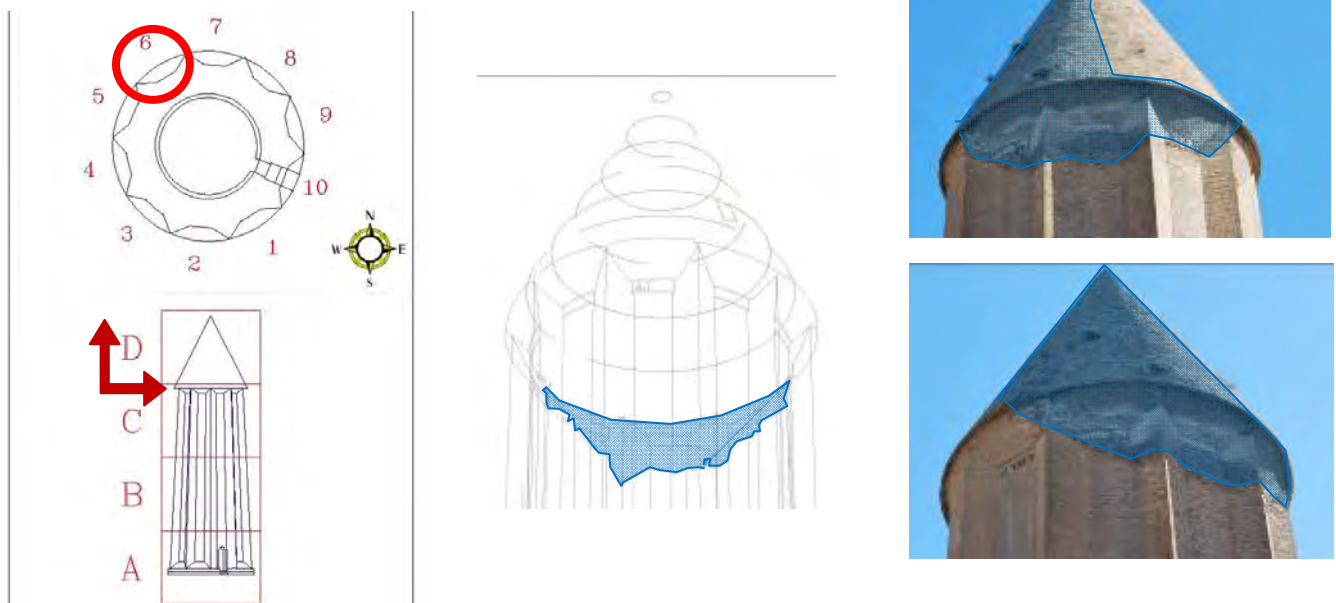


Figure .3- Descending moisture

Flow of water from seasonal rains on the surface can cause damages by washing away the mortar and eroding the material. Also, due to the humidity, direction of the wind (southwest), and this side of the structure normally not being exposed to the sunlight, the moisture remains inside the body of the building, providing environments in which plants and lichens can grow.

Proposed short-term plans:

- 1- Air current through the window to the east of the dome should be made in order to eliminate the moisture.
- 2- A scaffolding measuring 2×2meters wide and long, and as high as the tower should be erected every two years in order to check the conditions of the roof and to remove plants and lichens, as well as to control and examine the level of moisture in this part of the structure.
- 3- Smoothing the surface of the roof.
- 4- Checking the covering of the roof and the outer walls every two years.



Figure .4. -Ascending moisture on the top of the roof

4.b1.2. Wind

In different seasons, wind can cause damages and surface erosion in bricks. Even the direction of winds can be traced, and its effects can be observed on the trees around the tower. The erosion would be further intensified when strong winds are accompanied by rain or hail. Examples of such damages can be spotted in the north and northwest sides of the building. The surface of bricks in this part is all blistered, and there are numerous cracks and micro-cracks on bricks caused by rains, which are yet another cause of damage. Also, the wind current enters the distance between bricks and takes away the worn-out mortar, which gives way to other destructive material such as moisture. The considerable height of the tower, too, intensifies the effects of winds.

4.b1.3. Temperature:

What makes the temperature into a damaging element is temperature fluctuations during the day and night, and in different seasons. The sun warms the surface of bricks during the day, causing them to expand; but then, when the temperature decreases at night, bricks recover their original status. In the course of time, this can cause micro-cracks, and can weaken the material and separate the mortar from the bricks. Thus, the outer rows of bricks, which are already eroded by climatic elements, are also more prone to this kind of damage. Also, the high summer temperature warms the parts exposed to the sunlight and causes them to expand in volume. On the other hand, the part of roof which is not much exposed to the sunlight would not experience the expansion either; this would result in incoherence of temperature, which is in turn presumed to be one of causes of weakness of some bricks of the roof.

Proposed plans:

- Regular visitations and controlling of the structure
- Timely restoration measures aimed at stabilizing of the structure and protecting it from erosion

4.b1.4.. Earthquake

Earthquakes have hit Gonbad-e Qābus, whose records are presented in the earthquake monitoring table. The latest quake occurred 6 years ago. Studies show that the inactive crack above the entrance façade is caused by earthquakes of earlier periods. Examinations and use of indexes showed that this crack is stabilized, and is not expanding any further, and is thus of no threat to Gonbad-e Qābus.

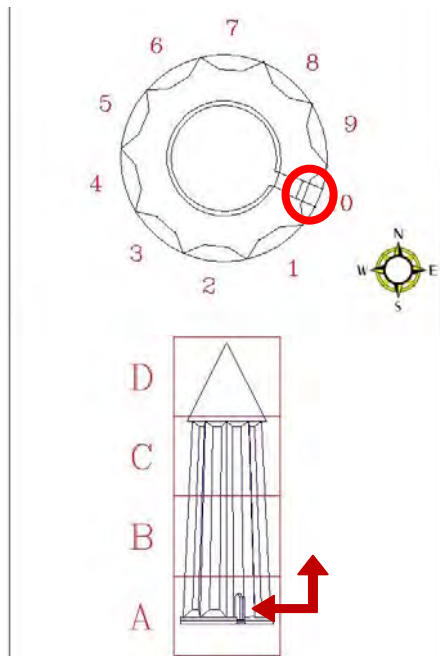


Figure .5.- The view of the cracks in different parts of the tower

4.b.2 Chemical structural damages:

Studies carried out on the materials used in Gonbad-e Qābus show the following results concerning the bricks and mortar:

4.b.2.1 Bricks

Examinations show that bricks of the tower are in rather good conditions. The bricks are mainly made of silica and calcium (calcium silicate). The abundance of calcium accelerates the growth of lichen on the roof. This calcium-loving type of lichen can decompose the surface of bricks and destroy them. Fortunately, however, the effect of this damaging factor is considerably reduced due to regular visitations and cleanings.

4.b.2.2 Mortar

The mortar used in the whole structure and the plaster used inside is all made of gypsum. Two samples of lime identified in the lab come from the mortar used in the restoration of the roof.

Most lime mortars used in restoration works are either detached or cracked, while the original plaster mortar is still in place. Growth of plants has worked to further weaken and separate the mortar. In addition, presence of chlorides can quicken the decomposition process as they can crystallize on the surface. Excessive amounts of clay added to the mortar can also ease the powdering process of the mortar due to lack of adhesion. However, studies showed that there is not even very little of this substance in the mortar, and the high purity of samples proved that any inconsistency in the mortar is caused merely by its plaster structure as well as how it was processed. Also, both constant exposure to the moisture and growth of plants have contributed to the weakness and porosity of the mortar. Anyway, one of the damages inflicted to the roof of the tower is the porosity and weakness of the mortar behind the surface bricks, which should be taken into consideration in restoration plans.

4.b.3 External chemical damages

4.b.3.1. Air pollutants

North of Iran usually enjoys clean weather due to high precipitation and to the winds that constantly blow in the area. However, the street adjacent to the site can cause damages due to the gas and the carbon black pollutants emitted from cars.

Proposed plan:

It is included in the short-term plans that the roadway adjacent to the tower would be first closed to the transit vehicles, and would ultimately be blocked for all the motorists and ultimately turned to a pedestrian walkway.

4.b.4 Biological and human damages

4.b.4.1. Biological damages:

These types of damages are caused by the biological processes of plants and animals on the roof, which intensify the effects of destructive elements.

The biological agents are constantly trying to improve their environment. Major types of them are as follows:

Various types of plants:

Different kinds of weeds have grown on the roof of Gonbad-e Qābus, mainly along the west and northwest sides. Also, plants such as wild fig, London rockets, etc., whose seeds are carried by the wind or in the droppings of birds, would sprout and grow in the cracks of the roof. Most of these plants are annual, and would dry after their biological period elapses; then, their dried residues would lie on the roof. The seeds that grow the following year would feed on these residues. Also, the roots of plants would penetrate into the bricks, and not only weaken the mortar, but also give way to the plants of the upcoming years to grow and to extend their roots.

As the observations show, the west and northwest sides of the structure have more plants as compared to the southeast. This side gets more moisture and more sunlight. Each year, the stems of plants become thicker and thicker, which would in turn widen the cracks across the bricks of the west and northwest sides. As the foliage thickens, older leaves and branches get entangled, making a large herbal mass in which more seeds remain and grow, and various types of animals live. Comprehensive studies are being carried out, but until they are completed, the plan is to put up scaffoldings of

2×2m, and with the height of the tower in order to regularly check and clean up the surface of the roof.

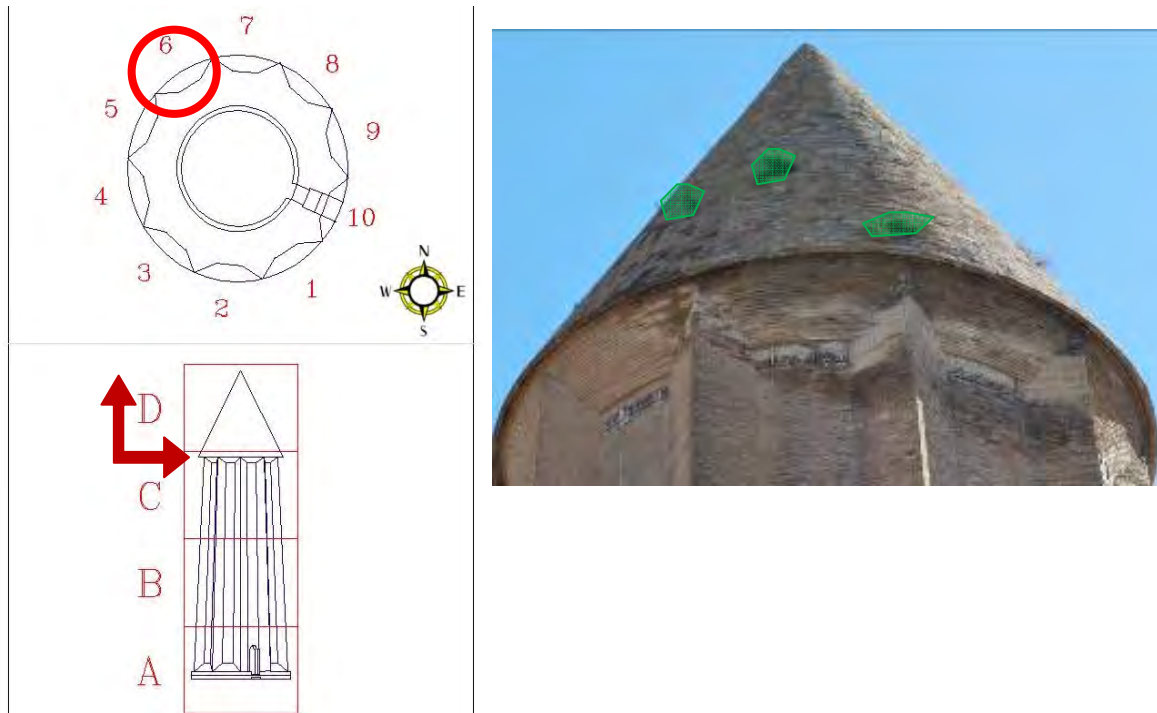


Figure .6 The view of the biological factors on the roof

- Animals:

1. Birds:

As mentioned earlier, the masses of plants on top of the tower can nestle gallinaceans such as doves and sparrows. As they land to pick the seeds, they scratch the roof and they also disturb surfaces of the structure with their droppings, which can be seen on the inscriptions underneath the roof. This can not only disturb the look of the inscriptions, but also cause chemical damages. On the other hand, the droppings can provide manure for the plants. Again, this can be prevented by regular visitations and cleanings.

2. Insects:

Hornets and ants found their nests in the cracks of Gonbad-e Qābus, and try to find a proper place to live. Now, with the removal of plants and cleaning of the roof, the place is no more proper for them to live, and there are thus much fewer of them in the tower, which can do no harm to it.

3. Lichens and mosses

These damaging factors are spotted on the roof of Gonbad-e Qābus. Lichens are the result of a symbiotic association of a fungus with a photosynthetic partner. It is called symbiosis since the rhizomes of the alga cannot absorb the minerals, and fungi are incapable of photosynthesis as they do not have chlorophyll. Simply put, the fungal partner provides minerals obtained from the rocks or bricks, while, being photosynthetic, the algal one provides organic elements to feed both symbionts, and thus they coexist. The significant point here is the decomposition of minerals by the fungi. They reduce atmospheric carbon dioxide into organic carbon sugars, and gradually decompose the calcite components of the roof bricks (which contain a considerable amount of calcium), and absorb them. There are more of lichens in the side of the roof which is not exposed to the sunlight; this could be attributed to the preventive effect of the UV from the sun on the growth of lichens in the sunlit part.

This, too, can be controlled and neutralized as a threat by regular visitations and cleanings.

4.b.4.2 Human damages:

This is about the damage and destruction caused by the visitors, including the graffiti on the body of the tower, scratching, and carvings on the surface of bricks. Positioning of the mosses and lichens on the map and on the dome of the tower.

Propose plan: training of the individuals, especially those at younger ages; further monitoring and controlling.

4.b.5 Urban development:

Seeing the aerial images of the years 1966, 1974, 1995, and 2010, and analyzing the development and expansion of the town between the two rivers, the followings results can be inferred:

- 1- The town has begun its gradual development and expansion around;
- 2- This development and expansion renders no threat against the historical site of Gonbad-e Qābus.
- 3- Positioning of the street adjacent to Gonbad-e Qābus



1335

Figure.7-Aerial image 1957



1343

Figure.8-Aerial image 1965



1374

Figure.9- Aerial image 2000



Figure.10-Aerial image 2010

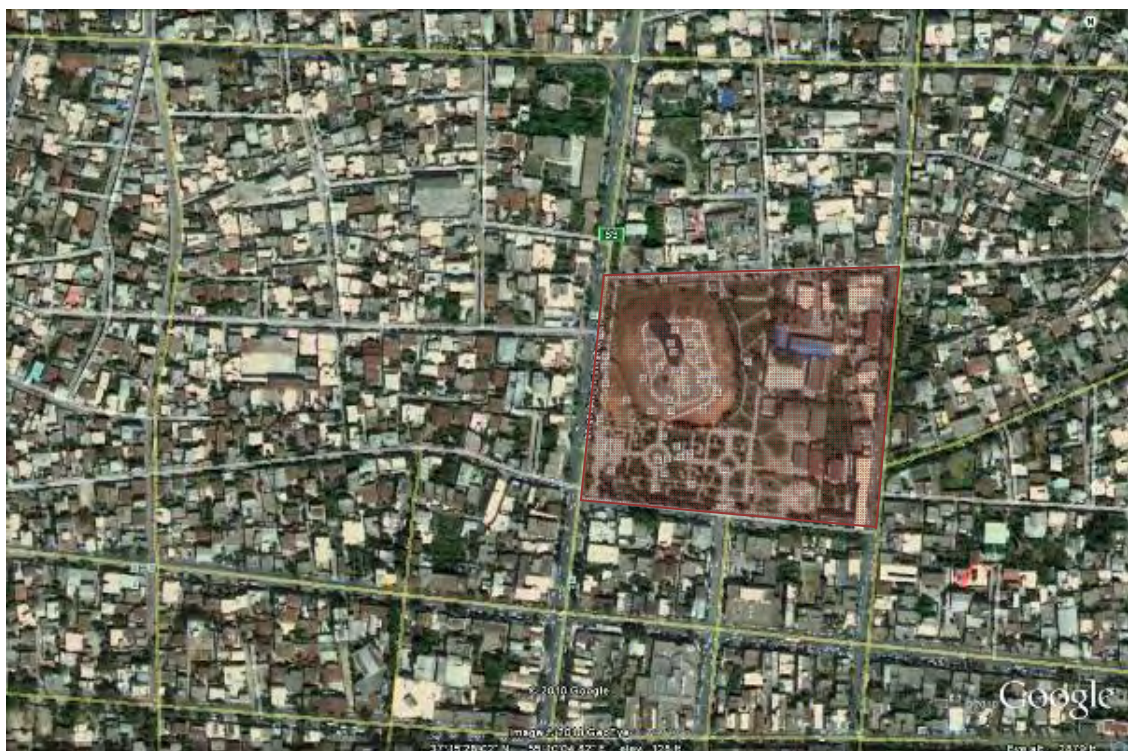


Figure.11-Aerial image 2010

4.b.6 Landscape damages:

The followings have disturbed the landscape of the site:

- 1- Electricity posts
- 2- Lighting system around the tower
- 3- Fencings around the site
- 4- Transit street to the west of Gonbad-e Qābus

The proposed plan includes the replacement of the above mentioned disturbances as follows:

1. Electricity cables would be moved to underground canals.
2. The lighting around the tower would be altered in conformity with the proposed plan.
3. Fencing would be done using materials to match those of the structure, which would not distractingly stand out; proper furniture would be included.
4. The roadway adjacent to the tower would be first closed to the transit vehicles, and would ultimately be blocked for all motorists and ultimately turned into a pedestrian's walkway.

- Pressure caused by tourism development

Considering the open area surrounding the Gonbad-e Qābus, which can be used for cultural events, no such pressure exists.

- **Number of inhabitants within the properties and the buffer zones**

Gonbad –e Qābus	Population	Remarks
Core zone	11	Statistics in 2010
Buffer Zones:	700	Statistics in 2010

5

Protection and Management of the Property

5. Protection Management of the Property

5. a Ownership

Governmental and nongovernmental organizations and actually public and private groups are the owners of the Buffer zone which are marked on the below map. The percentages of each of these kinds of ownership are listed below:

- Public ownership:
- Private ownership:
- State ownership:
- Municipal ownership:

Gonbad-e Qābus	Area & Perimeter
Private ownership	Area = 609000.0868M ² , Perimeter = 9009.6733M
Public ownership	Area = 139749.7398 M ² , Perimeter =14360.205 M
Municipal ownership	Area =106074.5002M ² , Perimeter = 2033.431M
State ownership	Area = 90197.4071M ² , Perimeter = 2406.4177M

- Public ownership: (including public passages and yards of the series of shops and arcades for the traffic of the pedestrians and the public use): %15
- Private ownership: %64
- State ownership: (including banks, and the shops which belong to governmental organizations): %10
- Municipal ownership: %11

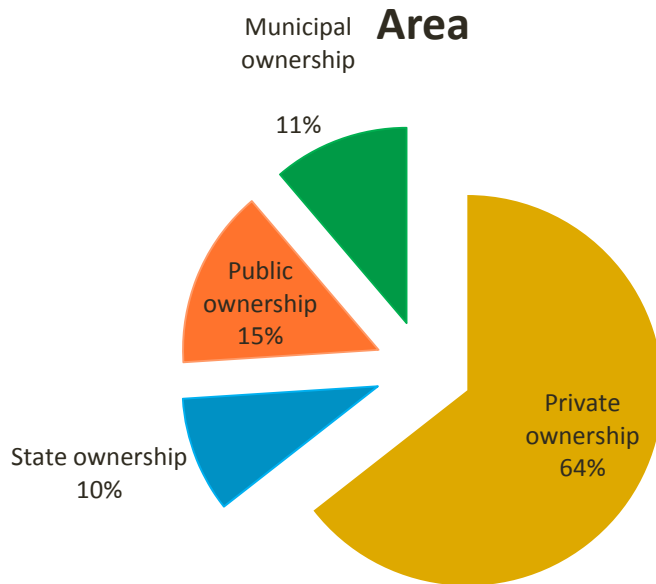
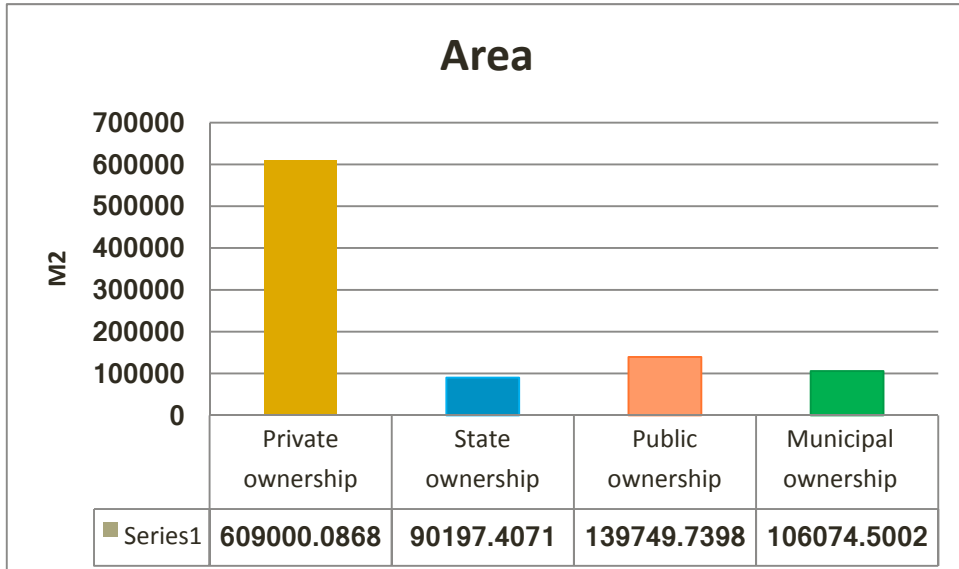
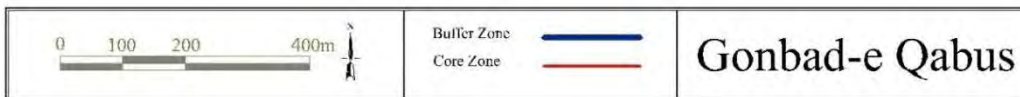


Figure 1- owners of the Buffer zone



Ownership	Private ownership	State ownership	Public ownership	Municipal ownership
	Area = 609000.0868m2 Perimeter = 9009.6733m 64%	Area = 90197.4071 m2, Perimeter = 2406.4177m 10%	Area = 139749.7398 m2 , Perimeter = 14360.205 m 15%	Area = 106074.5002 m2 , Perimeter = 2033.431m 11%

Figure 2- map of owners of the Buffer zone

5.b. Protective designation

The national and universal laws, regulations and constitutions to preserve and support the complex:

Gonbad-e Qābus has been inscribed in the list of Iran's national monuments with the number of 1097 in 1354 A.H (1975 A.D), it is under the below mentioned legal support:

By registering Gonbad-e Qābus on the National Heritage List of Iran, this property enjoys special protection and conservation legislation.

5.b.1 Approved regulations for core zone, buffer zone and its landscape

5.b.1.1 Measures concerning the core zone:

- 1- Any activities leading to the destruction of the historical core zone of the monument is forbidden
- 2- Any operations resulting in damage to the foundation of the monument is strictly prohibited.
- 3- Any intervention or development activity such as: restoration and reorganization of the site shall be valid and effective only after being planned and approved by ICHHTO
- 4- ICHHTO has a monopoly on all the archaeological researches and excavations in the core zone of the monument.

5.b.1.2 Measures concerning the buffer zone:

Zone I:

- 1- Any operations resulting in damage to the foundation of the monument and/or harming its landscape such as: excavating, moving earth, earth filling and leveling, developing, digging water wells or sewage... is strictly prohibited.
- 2- Any intervention or development activity such as: restoration, revitalization, reorganization of the site or the garden, lighting, designing and implementing green space within the zone I of the monument shall be valid and effective only after being planned and approved by ICHHTO
- 3- ICHHTO has a monopoly on all the archaeological researches and excavations in the zone I of the monument
- 4- All the structures existing within the zone I of the monument shall be removed to open up the space.

Zone II:

- 1- Any activities within the zone II harming the base of the core zone is prohibited such as: the construction of any kind of water canals, digging sewage or water wells, installation of vibrating, noisy and smoking machinery as well as directing surface waters toward the core zone of the monument.
- 2- Wall facades of streets near the Tower shall be restored with traditional materials homogenous with the monument according to ICHHTO measures
- 3- Construction of buildings in two floors up to a height of 7.5m within this area is permitted
- 4- Any kinds of construction permits and the end of work certificate for construction charts as well as development designs shall be approved by ICHHTO
- 5- the façade of buildings and architectural designs must be in harmony with the historical core zone of the monument as well as the original and indigenous architecture of the region
- 6- Traffic of heavy motor vehicles within *Emam Khomeini, Jomhuri* and *Mellat* Streets is strictly forbidden.

5.b.1.3 The Landscape zone

Any large-scale intervention such as: the construction of high rise buildings or urban facilities having a negative influence on the tower landscape is prohibited.

5.b.2 Cultural Heritage Laws in Iran

There are different laws and regulations for protection and conservation of cultural heritage in Iran. These are in the following broad categories:

- A. Legislation governing general cases in the country, including cultural heritage;
- B. Legislation specifically treating cultural heritage;
- C. International legal instruments, recommendations and guidelines which is integrated within the national legislation; and
- D. Other regulations for cultural heritage.

5.b.2.1 General Regulation

Samples of the general laws and regulations relevant to cultural heritage include, *inter alia*:

1. Article 83 of the *Constitution Law of Islamic Republic of Iran* (1920) recognizes the importance of cultural properties. Transferring the ownership of public monuments and properties considered to be part of the national heritage is forbidden, unless approved by the Parliament. However, transfer of ownership of monuments and cultural properties officially recognized as insignificant is possible.
2. Article (26) of the Iranian *Civil Law* (1939) prohibits private ownership of significant cultural property.
3. The *Islamic Penal Law* is an effective law for practical protection of cultural heritage. A full chapter deals with crimes regarding cultural heritage (from Article 588-569) in the *Islamic Penal Law*, (1996). This law recognizes the following as a crime subject to punishment:
 1. Damaging, theft, selling or buying stolen historical property (Article 559);
 2. Violation of the regulations of *ICHHTO* resulting in deterioration, defect, or damage in the heritage property (Article 560);
 3. Illicit export or smuggle of heritage property (Article 561);
 4. Any unauthorized excavation in an effort to find historical properties (Article 562.1);

5. Selling or buying properties discovered from unauthorized excavations (Article 562.2);
 6. Encroachment on historical or religious land, property or sites registered on the National Heritage List with no private ownership (Article 563);
 7. Restoration, repair, converting, renovation and extension of cultural or historical monuments or their decoration, registered on the National Heritage List without the ICHHTO approval (Article 564);
 8. Transferring parts of immovable properties registered on the National Heritage List without the ICHHTO consent (Article 565).
 9. Converting the functions of monuments and sites registered on the National Heritage List denigrating the identity of the property and/or without ICHHTO consent.
4. The *Law for Punishment of Those Interfering in the National Economic System* (1991), article (1), paragraph d, considers any effort towards export of national property , even though not successful, a crime. All such property intended for export is confiscated.
 5. *Property acquisition law for implementing public development and military projects of the Government* (1979) allows the acquisition of any historic property, in case a project is prepared for this property. This law has a streamlined procedure which also guarantees the rights of the private owners.

5.b.2.2 Specific Regulation for Cultural Heritage

Samples of the regulations specifically dealing with cultural heritage are explained below:

1. The *Law for Protection of National Heritage* (1930) is the first comprehensive law concerning various aspects cultural heritage. This Law defines the procedure for identification of cultural heritage property (Article 1). It further mandates the Government to prepare a National Heritage List (Article 2), sets the criteria and legal protection for properties on this List, and stipulates legal provisions for archaeological excavations.
2. The *Bylaw Concerning Prevention of Unauthorized Excavation* (1980) stipulates punishments for excavation and/or purchase of excavated historic objects. The provisions of this Law are further elaborated in the *Islamic Penal Law* mentioned above. There is further regulation limiting production, purchase, use or advertisement of metal detectors
3. The *Law Concerning Acquisition of Land, Building and Premises for Protection of Historic Properties* (1969) stipulates further regulations for acquiring property with historic or cultural significance.
4. The *Law for Establishing Iranian Cultural Heritage Organization* (1979) is another powerful legal instrument depicting a comprehensive picture for managing cultural heritage of the country.

5.b.2.3 International Legal Instruments

In the I.R. of Iran, the requirements of any international convention are integrated with the national legislation, upon accession to that international convention. Thereafter, it will be compulsory to abide with the requirements of these conventions. The I. R. of Iran has acceded to several *UNESCO* conventions concerning the conservation and protection of cultural heritage, as well as other conventions and charters. Some of important conventions which are acceded by the I. R. Iran include, *inter alia*:

1. *Convention Concerning the Protection of the World Cultural and Natural Heritage* (1972)
2. *Convention on the Means of Prohibiting and Preventing the Illicit Import, Export and Transfer of Ownership of Cultural Property* (1954) and its *Protocol I* (1954) and *Protocol II* (1999)
3. *Convention for the Safeguarding of the Intangible Cultural Heritage* (2003)

5.b.2.4 Other Regulations

In addition to the legal instruments mentioned above, there are other types of regulations for protection and conservation of cultural and historic property in the I. R. of Iran. For example, according to a cabinet decision adopted in 2001, all public organizations must conduct studies to assess the cultural/historic impacts of major

Development projects at the earliest feasibility study stage and to comply with the recommendations of such studies during design and implementation.

5. c. Means of implementing protective measures

The Cultural Heritage, Handicrafts, and Tourism Organization has the authority to keep, preserve, and renovate, all the registered or not registered artistic, historical and cultural monuments according to civil law.

According to law, all the governmental and nongovernmental organizations as well as all the citizens in all parts of the country must obey the law and follow the regulations related to all kinds of movable and immovable properties presented by the Cultural Heritage Organization.

If a part of the historical Gonbad-e Qābus as an inscribed monument in the list of national heritage needs to be preserved, the legal confirmation of the Cultural Heritage organization will be needed.

Physical protection of the property is ensured by the ICHHTO corps of guards. The guards employed by the local office of the ICHHTO are present on the sites, ensuring a permanent surveillance of the properties. Another effective means of protection is secured by the inhabitants of this property and respective NGOs.

5.c.1 Supervisory systems

Gonbad-e Qābus benefits from two levels of supervision, described below.

5.c.1.1 ICHHTO High Technical Council

All plans and programs affecting the property should be approved by the High Technical Council of ICHHTO established in Tehran. This Council meets periodically at the property. It provides overall supervision ensuring that the plans and programs are implemented. This Council decides on all major conservation interventions in cultural property as well the allocation of financial resources for the Bases. Members of this Council include ICHHTO Deputy for Conservation, four ICHHTO Director-Generals for Conservation, Urban Fabrics, Inscription, and Movable Properties, and five national experts.

5.c.1.2 Steering Committee

Each Base has a steering committee of renowned experts who advises and adopts overall policies. The Committee approves the technical decisions for conservation interventions at the property. For technical matters, the Bases co-ordinate with respective deputies of ICHHTO, especially the Deputy for Conservation.

The members of the Gonbad-e Qābus Steering Committee are as follows:

- 1- Civil and Construction Affairs Deputy of the Governor
- 2- Head of Gonbad-e Kāvus *Office* of Cultural Heritage, Handicrafts and Tourism.
- 3- Head of Urban Development & Housing Organization
- 4- Head of Islamic Council of Gonbad -e Kāvus
- 5- Gonbad-e Kāvus Mayor
- 6- Eng. *Hamid Omrani Rakavandi*
- 7- Dr. *Jebrail Nokandeh*
- 8- Eng. *Jamile Pourghasem*
- 9- Eng. *Freydon Onoq*
- 10- Eng. *Ehsan Ervani*
- 11- Eng. *Homayoun Kordi*

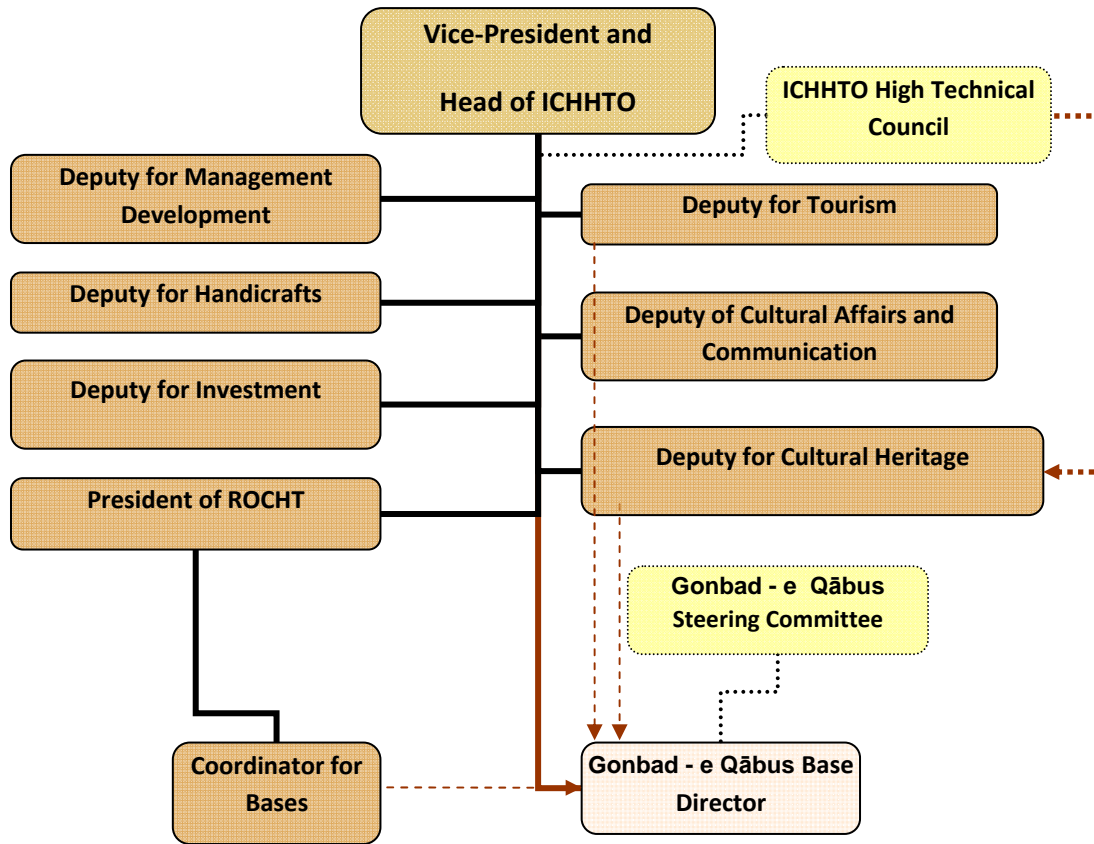


Figure 3- ICHHTO chart

5.d. Existing plans related to municipality and region in which the proposed property is located (e.g., regional or local plan, conservation plan, tourism development plan).

The revision plan of Gonbad-e Kāvus old urban fabric has been prepared by the *Yadgar-e- Tarh* consultant group under supervision of the municipality & special respect to ICHHTO regulations.

Master plan of Gonbad-e Kāvus town is prepared by *Tarh va Ebda* consulting Engineers in 1989 summer. This master plan is confirmed by Higher Council for Architecture and Urban Planning [*HCAUP*] which a ICHHTO's representative is one of its members.

The contract of the engineering services for the studies and the revision plan of Gonbad-e Qābus have been communicated to *Yadegar-e- Tarh* consulting Engineers by the Municipality of Gonbad-e Kāvus.

The detailed plan of Gonbad-e Kāvus town was carried out by the above-mentioned company in 2009, and was approved by the related Organizations including the director of the cultural Heritage Organization, the director of the Islamic city council, the director of the Housing and Urban Development organization, and Gonbad-e Kāvus Municipality.

In the detailed plan of Gonbad-e Kāvus Town documentation of historical elements as well as giving special attention to historical conservation which effectively prevented damages inflicted upon Gonbad-e Kāvus town is considered. In this plan, preservation of the historical visual characteristics and values of the tower is emphasized.

5. e. Property management plan or other management system

Gonbad-e Qābus will be managed under an integrated system, which is mentioned below:

- *MHUD Master plan*
- *Organization chart of Gonbad-e Qābūs*
- *Main goals*
- *Strategies*
- *Scheduled Programs*

5.e.1 Higher Council for Architecture and Urban Planning [HCAUP]

All urban plans in Iran should be confirmed by Higher Council for Architecture and Urban Planning [HCAUP], before their approval.

Higher Council for Architecture and Urban Planning (*HCAUP*) was established under the law of February 1973. Ministry of Housing and Urban Development [MHUD] is responsible for managing housing development as well as for developing master plans for urban and semi-urban areas. This includes the historic urban areas, where a large proportion of the Iranian cultural heritage is located. The *HCAUP* is presided by the Minister of MHUD. The Deputy Minister for Urban Development and Architecture is the Secretary of *HCAUP*, under whom a Director-General manages the Secretariat. Other members of *HCAUP* include the Ministers of Interior; Economy and Finance; Culture and Islamic Guidance; Education; Power; Jihad Agriculture; and Defence.

In addition to these ministers, three Vice-Presidents are voting members of the *HCAUP*: (i) Head of Management and Planning Organization, (ii) Head of *ICHHTO*, and (iii) Head of Department of Environment. *HCAUP* has four main functions:

- Overall urban development policies.
- commenting on by-laws affecting zoning, land use, and determining main functions;
- adoption of urban master plans; and
- Adoption of urban criteria, regulations, by laws, etc.

The approval of master plans by *HCAUP* has an established process. A qualified consultant is commissioned by the provincial Housing and Urban Development Organization (*HUDO*), which is the provincial office of *MHUD*. After the plan is prepared must be approved by the Provincial Planning Council. It is then reviewed concurrently by the *HCAUP*'s technical committee and the office of Physical Plans at *MHUD*, before final submission to *HCAUP*. The figure below shows the procedure for approval of physical plans by *HCAUP*.

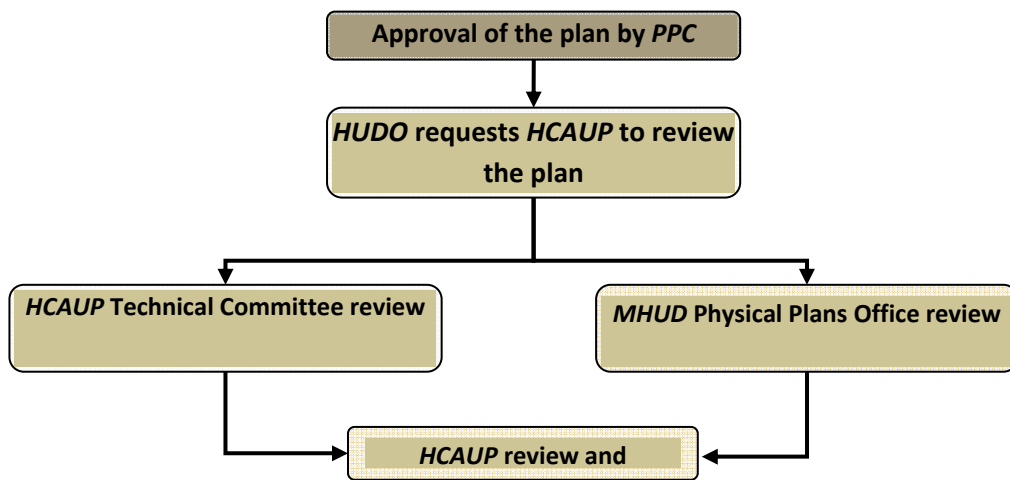


Figure 4-The procedure for approval of development plans by *HCAUP*

In principle, *HCAUP* does not examine the detailed plans. Such plans, as well as modifications which do not essentially change the existing Master Plan, are adopted by a commission presided by the provincial or county governor-general, head of City Council, Mayor, representatives of *MHUD* and some other ministries and (also called Commission for Article 5). The Secretariat of Commission for Article 5 is established at *HUDO*. In case of Gonbd-e Kāvus the Commission for Article 5 in Gorgan province is responsible for adopting urban development control regulations.

The chart suggested by Gonbad-e Qābus Base is mentioned below:

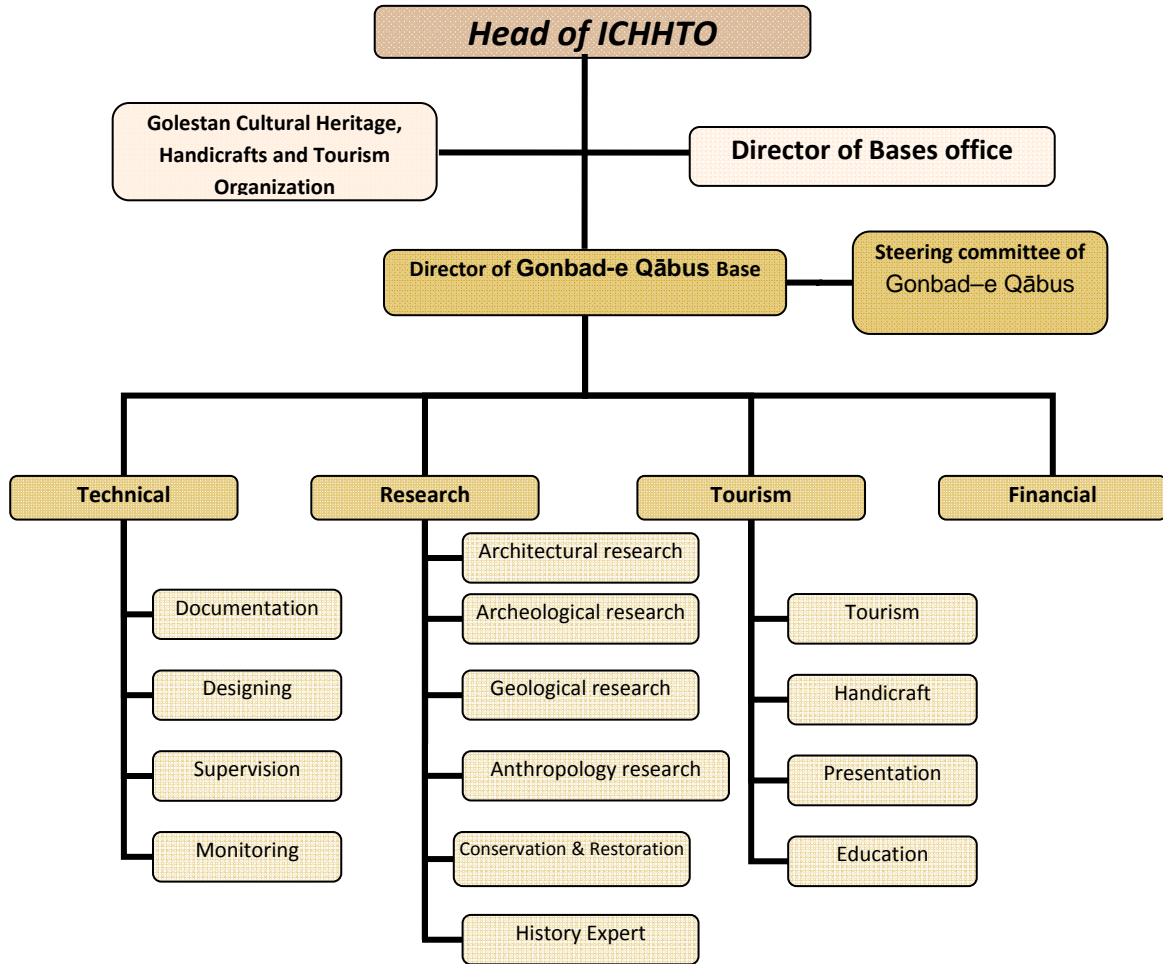


Figure 5- Organizations chart of Gonbad-e Qābus Base

5.e.2 Management

5.e.2.1 Main goal

Protecting the outstanding universal value of Gonbad-e Qābus as well as respecting the authenticity and integrity of the site as exceptional testimony to the tradition of building tomb towers in the eastern world.

5.e.2.2 Management Strategy and Guidelines

- Holding regular discussion sessions (once every two or three month) with the participation of the steering committee in order to achieve a common and integrated point of view. (It should be mentioned that negotiations with these parties has witnessed an acceptable progress in the last decade.)
- Holding regular (monthly) sessions of the technical committee aimed at the evaluation of issues and the examination of the needs of monument.
- Reviewing the prioritization manner in spending funds resulting out of tower revenues as well as in allocating credits coming from *ICHHTO* and municipality.
- Expansion of the activities of the monitoring team of the tower as well as supplying monitoring equipments such as: CCTVs, vibrating instruments, hygrometer and other equipments
- Monitoring the feasibility of measures relating to the core and buffer zone of monument.
- Professional Lighting the tower with due regard to its outstanding universal values as well as its integrity and conservation
- Deploying experienced experts in the form of different research work forces based on management requirements
- Deploying specialist museum curators in order to introduce systematically the outstanding universal values of monument.
- Expansion of activities related to the introduction and education in the *ICHHTO* Base with the cooperation of public and private sectors
- Expanding activities related to introduction and education for different audiences

- Equipping and completing the data archive as well as reports existing in the tower by documentation and categorization of all the available documents and papers
- Collaboration with schools and universities for the purpose of implementing educational programs in monument.
- Cooperation with universities as well as scientific centers for the purpose of holding training courses and scientific assemblies in the monument.
- Acceptance of research theses and projects at different levels of BA/BS to PhD. In order to provide for diverse requirements of the monument
- Upgrading the knowledge level of the ICHHTO Base personnel for all groups and levels through ongoing education programs
- Continuing and expanding the operations of the archeological group stationed at the base of the monument.

5.e.2.3 Action Plans

Short term Plans (two years)

- To complete signboards and presentation facilities
- To hold exhibition in order to represent the outstanding universal values of the monument.
- Reorganizing and equipping the office for the experts in buffer zone.
- Improving the condition of WCs aimed at providing more comfort for visitors with due regard to outstanding universal values of the monument.
- Regular monitoring of the affecting factors.
- Continuation of monitoring and starting investigations for the purpose of removing moisture inside the space of the monument.
- Installing sign- boards within the buffer zone of the monument for improving orientation ability of tourists.
- Reorganizing shop fronts located in the buffer zone.
- To inform buffer zone residents about the relevant conservation measures by printing and circulating informative brochures as well as to hold briefing and consulting sessions with local residents and shop owners.
- Printing brochures and various cultural productions for the purpose of informing buffer zone residents about the outstanding universal values of monument as well as the role it plays about the collective identity of this group of people
- Improving the façade of the tower and the floor of inside and outside of it.
- Studying the options available for a more successful negotiation with all groups interested in the conservation of the monument.
- Cooperation with Golestan ICHHTO for the purpose of printing research and scientific findings in the frame work of books, brochures and various cultural productions aimed at informing residents within the buffer zone about the outstanding universal values of the monument and the role it plays regarding the collective identity of this group

- Installing a sign- board to introduce and present artistic and scientific values of structures and inscriptions in different sections of the monument.
- Providing brochures introducing the monument in Farsi and English languages

Middle Term Plans (five years)

- Introducing architectural values of the monument with the help of the audio tours as well as sign- boards for example regarding:
 - Describing the creation theories of the monument.
 - Describing the historical methods in construction of the monument.
 - Introducing the brick chronograph index and how it works.
 - Presenting the structure details of the monument particularly with the help of sign- boards.
- Continuation of precise documentation of tower inscriptions and decorations existing in different sections of the tower by various techniques.
- Putting into operation the standard lighting project of the monument for the purpose of a better representation of its artistic, scientific and aesthetic values.
- Equipping and completing the archaeological team as well as continuing scientific excavations and investigations using techniques with less risk such as: geophysics
- Consulting buffer zone residents by oral surveys and questionnaire distribution on various ways to reduce the number of cases of violating conservation measures of the buffer zone.
- Providing a data base usable for different audiences but at the same time restricting data access for each group
- Improving touristic facilities such as:
 - Installing tourist sign boards right across Gonbad-e Kāvus city with the partnership of Gonbad-e Kāvus Municipality.

Long Term Plans (ten years)

- Equipping the monitoring team with instruments measuring vibrations, moisture and air pollution
- Reorganizing of a special library and research centre at the buffer zone I aimed at research works and introducing of the tomb tower monuments in Alborz Mountains.
- Reorganization of the park, streets and passageways around the monument.
- Reorganization of the streets facades around the monument.

5. f. Sources and levels of finance

It is needed to raise more funds for protecting and restoring Gonbad-e Qābus Any restoration and protection activities are carried out under supervision of ICHHTO. Iranian Cultural heritage, handicrafts and Tourism Organization takes actions about the tower and its restoration and protection needs every year according to its comprehensive plan.

The table below shows the funds specified for Gonbad-e Qābus Tower within the last 4 years.

YEAR	NATIONAL/PROVINCIAL	TERM 1 (Million RLs)	Municipal costs (Million RLs)	TOTAL (Million RLs)
1389	NATIONAL	700	100	1300
	PROVINCIAL	500		
1388	NATIONAL	300	100	870
		70		
	PROVINCIAL	400		
1387	NATIONAL	450	80	730
	PROVINCIAL	200		
1386	NATIONAL	520	40	660
	PROVINCIAL	100		

5. g. Sources of expertise and training in conservation and management technique

Sources of expertise and training in conservation and management techniques are included as follows:

1- Research Organization of Cultural heritage and Tourism (ROCHT)

ROCHT is responsible for multidisciplinary researches and training of young experts of ICHHTO.

2- Local and national universities

There are some local universities such as The Islamic Art University of Gorgan, Gonbad-e Qābus University and Gorgan Islamic Aazad University which presently some of their students are working and studying on Gonbad-e Qābus .

And also in national level, high educational centre of ICHHTO and other national universities provide sources of expertise and training in conservation and management techniques.

3- Short term training and workshops

Short term training and workshops are being held in local, national and regional levels with cooperation of UNESCO and Universities for providing sources of expertise and training in conservation and management techniques. For example following workshops have been held in regional and national levels during past 2 years with the participation of Gonbad-e Qābus experts:

- Training workshop for the presentation of Persian architecture held in Gorgan.
- Training workshop for Tourism affairs held in Gorgan .
- Cultural Landscape workshop held in Persepolis
- Management and conservation of historical sites held in Chogha Zanbil
- Training workshop for restoration of earthen architecture held in Meybod.

4- Use of the traditional craftsmen and masons for training young generation

One of the most important sources of expertise and training in conservation and management technique are the traditional craftsmen and masons. Fortunately, this kind of training is still active in Iran .

5- Training courses for guards, members of NGO's, people and local authorities:

Regular courses are being held at the site for giving training to different people by the experts of Gonbad –e- Qābus.

5. h. Visitor facilities and statistics

This table shows the trend of changes in tourism indexes of the Province:

Month/year	NUMBER OF DOMESTIC VISITORS			NUMBER OF FOREIGN VISITORS		TOTAL
	Ticket	Half Ticket	Free	Ticket	FREE	
3/2009	8540	3810	25329	30	0	37709
4/2009	289	532	7738	14	0	8573
5/2009	172	312	5642	9	5	12271
6/2009	197	312	7617	14	0	8151
7/2009	210	331	8505	21	0	9067
8/2009	183	320	8102	18	10	8633
9/2009	168	334	7927	18	0	8447
10/2009	172	296	7653	8	8	8137
11/2009	188	324	7751	14	0	8277
12/2009	132	356	8735	11	3	9237
1/2010	198	263	10165	24	0	10650
2/2010	156	258	5913	15	0	6342
TOTAL	10605	7459	111077	196	26	129363

Index	2008 - 2009	2007 - 2008	2006 - 2007
Number of Iranian Tourists	129141	103862	95689
Number of Foreign Tourists	222	175	254
Number of Hotels	2	2	2
Number of Other Residence Centers	2	2	2
Total Number of Beds	156	156	156

Number of Hotels, Hotel-Apartments, Inns, Tour & Travel Services Agencies in *Gonbad-e Kāvus Town*.

Index	Number
Hotel (two-Star)	1
Hotel (one-Star)	1
Inn (1 st , 2 nd & 3 rd Class & Top)	2
Tour & Travel Services Agencies	8

No	Name and class of Hotel	rooms	beds	address	Telephone
1	Farhangiyan-e Gonbad, two star	19	44	Taleqani st.	0989111723626
2	Qabus, one star	18	42	Emam Ali Sq.	0989119971485

Statistics of visitors of *Gonbad-e Qābus*:

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Local visitors	111077	86%	86%	
	Regional visitors	7459	6%	6%	
	Foreign visitors	222	0%	0%	
	Iranian visitors	10605	8%	8%	
	Total	129144	100%	100%	

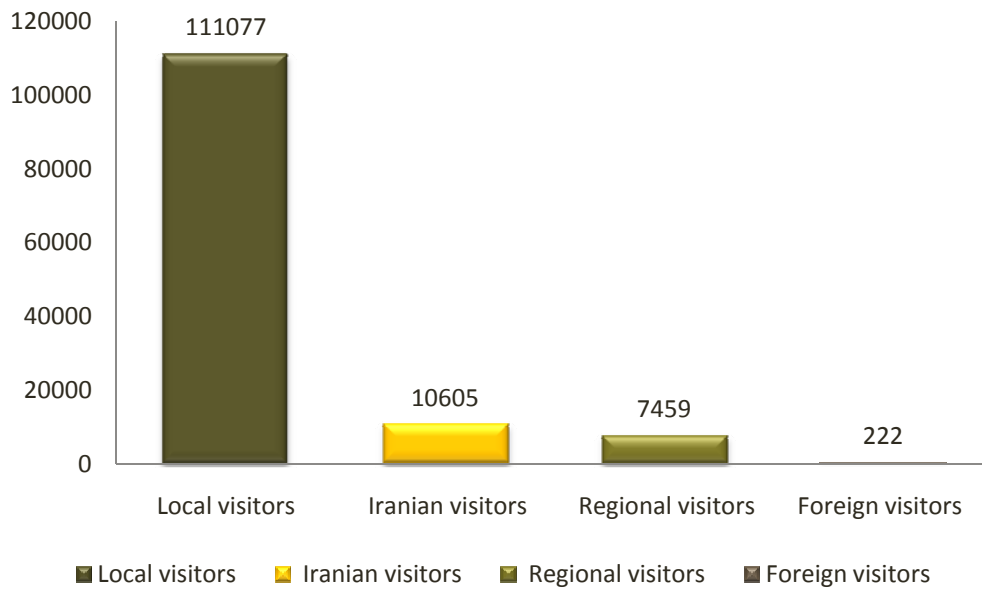
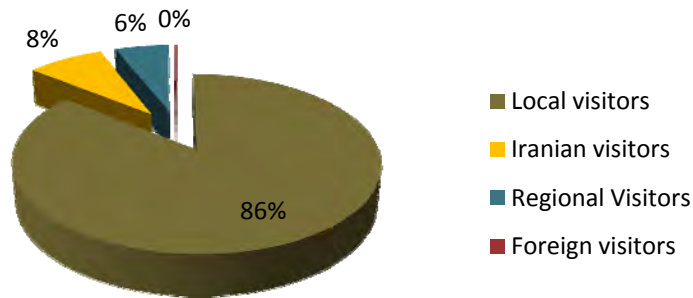


Figure 6- Statistics of visitors of *Gonbad-e Kāvus*

Index	Number	Total investments (Million RIs)
Hotel (five-Star)	1	550
Hotel (one-Star)	1	1
Inn (1 st , 2 nd & 3 rd Class & Top)	2	20
Tour & Travel Services Agencies	8	55

Reference: ICHHTO Deputy of the revenue and plans.

5. i. Policies and programmers related to the presentation and promotion of the property

- Providing a data base usable for different audiences but at the same time restricting data access for each groups
- Studying available options for conducting more successful negotiations with all groups interested in the conservation of Gonbad-e Qābus.
- Studying methods of conducting informative activities about each one of the interested groups including: visitors, businessmen, tourists, residents living and shop owners working within the buffer zone, university students, researchers and...
- Cooperation with the private sector for making a documentary video about research history in Gonbad-e Qābus.
- Partnership with Golestan ICHHTO for printing scientific and research findings in book format
- Publishing brochures as well as various cultural productions aimed at informing buffer zone residents of the outstanding universal values of Gonbad-e Qābus and its role in the collective identity of the people.
- Reorganizing and equipping the museum in order to present and introduce further the values and significance of the site to the local and regional people and experts.

- Installing sign boards in different spots of the buffer zone I in order to introduce and describe artistic and scientific values of its inscriptions
- Making operational the Lighting Project of Gonbad-e Qābus aimed at providing a standard atmosphere for better introduction of its aesthetic, artistic and scientific values while considering the necessity of the conservation of the historical spirit and integrity of the tower.
- Improving touristic facilities for example:
 - Installing sign boards for guiding visitors across Gonbad-e Kāvus town with the partnership of Gonbad-e Kāvus Municipality.
 - Printing a bilingual guide book and brochure

5.j Staffing level (professional, technical, maintenance)

Positions of the Management Personnel in Gonbad-e Qābus Base

Positions	Number	Names of Present Personnel
Director of base	1	Hamid Omrani Rakavandi
Responsible For Public Relations	1	R. Adina
Responsible For Office & Secretary	1	Jamile Pourqasem
Responsible For Contracts	1	Fraydoun Onoq
Statistics & Report	1	Mohamad Taqi Maleka
Driver	1	-
Services	1	A. Pashmaki

Expertise	Number of Experts	Names
Restorer	1	Jamile Pourqasem
Restorer of relics	1	Ehsan Iravani
Technician of restoration	1	Hoseyn Dabaq
Geotechnical expert	1	Homayoun Kordi
Students	10	Variable
Craftsman	2	Ostad Hassan Nade Ali Abdol Rashi Bashaqare

Research Affairs Personnel of the base:

Expertise	Number of Experts	Names
Archeologist	1	Jebrael Nokandeh
Archeologist	1	Hamid Omrani Rakavandi
Historian (Islamic Era)	1	Fraydoun Onoq
Librarian	2	Maryam Kheykhah
Responsible For Documentation	1	Mohamad Taqi Maleka

6

Monitoring

6. Monitoring

Gonbad-e Qābus is an exceptional and significant early Islamic site, over 1000 years old, in Iran which not only possess unique and innovative architectural features but also has served as a prototype and model for building of other tomb towers in Iran, Anatoly and Central Asia. Gonbad-e Qābus being located in the east of the basin of the Caspian Sea is among the most distant areas influenced by the Caspian climate with the characteristics of maritime air masses. The general altitude of the area where the town of Gonbad-e Kāvus is located is 50 meters, while in some parts it is over 2000 meters where the dominant climate is more of maritime and mountainous systems. Thanks to the dominance of the west winds, the moisture from the sea is distributed across the area, and as Alborz mountain chains along the south of the basin capture it, the moisture cannot move southwards toward the inner plateau of Iran. As mentioned in Chapter 2 the highest precipitation rate in Gonbad-e Kāvus belonged to the months of *Esfand* and *Farvardin* [March and April] with 73.9mm and 68mm respectively, and the lowest to *Tir* [July] with 16.2mm. It is therefore to be noted that monitoring of humidity and temperature would be a part an overall plan of constant supervision of the site so that the direct and indirect effects of these two factors are prevented or slowed down.

As stated in Chapter 2 and 4 there has been some instances in history when and where deliberate attempts were made to destroy this magnificent work of art and architecture but fortunately none of these efforts succeeded. During early part of 20th Century Gonbad-e Qābus was briefly settled by the Russians who even made an attempt to excavate the foundation of the Tower in search of Qābus's body, as well as treasures which might have been buried with him. Although these efforts produced some new information about the base of the tower and the fact that there was no trace of the body and the treasure but at the same time did leave the building entirely safe from the conservation point of view. During these years the gin shots left their destructive marks on some of the bricks.

As explained in Chapter 2 and 4, apart from the humidity and temperature, which may bring with them biodeterioration and chemical alterations of the building materials, Gonbad-e Kāvus, similar to many other areas of Iran, suffers from the effects of earthquakes too. There have been numerous earthquakes in the lifetime of the Tower the most severe of which with a magnitude of 6 striking the northwest of Gonbad-e Qābus on October 7, 2004 at the early morning hours. Fortunately the builders of the Tomb Tower were quite aware of the severity of the environment and natural events in the region when planning and executing the construction. They made a 9 meter deep foundation with special structural and engineering details so that that the tall building

could withstand the effects of the tremors afterwards. Nevertheless, to be prepared for the earthquakes and being alarmed against the destructive effects of winds, moisture, biodetrriorants, chemical and physical alterations, unnecessary and hazardous interventions by humans, whether wrongful interventions through conservation practices or uncontrolled tourism, and finally negligence toward the importance and significance of cultural heritage and its role in cultural development, would be the essential parts of the monitoring program.

Although the first classified and scholarly approach toward the documentation and understanding of the site as well as its conservation were carried out in 1939 but since then and particularly when the National Organization for Cultural Properties and later on the National Organization for Conservation were established, systematic monitoring, survey, study and conservation of historic monument and sites began in the country. Gonbad-e Qābus was, because of its outstanding features and cultural and historic importance, among the first sites to be studied and documented.

All the previous efforts in protecting and preserving the sites intended to safeguard the originality and integrity of the place as well as enforcing the regulations in order to keep it from unlawful interventions. Maintenance of the sites through attentive actions of responsible authorities, raising awareness among the ordinary people and authorities about the importance of cultural heritage and in particular Gonbad-e Qābus as a unique Islamic architecture, surveying the effects of weathering agents, studying the deterioration processes through regular checking, updating the safety and security measures, keeping contact with cultural heritage professionals and scholars, exchanging scientist information, and enforcing the established management plan are among the components of the monitoring program which is implemented by Gonbad-e Qābus Research Base under the supervision of the provincial and national authorities.

To monitor the states of conservation on various parts of the site such as architectural, structural, building materials, landscapes, tourism and inhabitants' lives, a set of activities are planned and proposed details of which can be found in relevant Chapters of 2, 4, and 5. Here, with reference to the information and data presented in the aforementioned parts the key indicators and administrative arrangement to apply them are indicated.

6. a. Key indicators for measuring state of conservation

As explained before Gonbad-e Qābus is in good state of conservation architecturally and structurally. The outstanding qualities of the site whether with regards to its fabric or its setting is monitored through physical inspections, regular surveys, and documentation. The monitoring of affecting factors is being implemented through cooperation between responsible authorities in various scientific centers, labs and specially the Base of the Iranian Cultural Heritage, Handicraft and Tourism Organization (ICHHTO) in Gonbad-e Qābus.

Based on the identification of the threats and weathering factors affecting the site a number of indicators that are monitored by responsible authorities are identified for the conservation and preservation of various elements and parts of the monument. Below are the details:

CATEGORY		INDICATORS		PERIODICITY	LOCATION OF RECORDS
Structural	moisture	Downpours	Inspecting the places where water gather	Every week in rainy seasons	Base of Gonbad-e Qābus
		Underground water	Observation and measurement of underground water.	Every month	Base of Gonbad-e Qābus
		Running water	Monitoring the movement of running water on ground slopes.	Once a month in rainy seasons	Base of Gonbad-e Qābus
	Deterioration	Erosion of material	Inspecting the material	Every month	Base of Gonbad-e Qābus
		Structural movements	Inspecting the cracks	Every week	

CATEGORY	INDICATORS	PERIODICITY	LOCATION OF RECORDS
Conservation and restoration	Regular examination of chalk or metal markers	Every 2 Weeks	Base of Gonbad e Qābus
	Amount of materials erosion, effected by rains, snows Like: dry rot, material of foundation collapse, efflorescence.	Every Month	Base of Gonbad Qābus
	Plants and animals	Every Month	Base of Gonbad e Qābus
	Geological research at the site and surveying water table of the site	Every 6 months	Base of Gonbad e Qābus
Tourism	Account of travellers and visitors on the site	Every year	Base of Gonbad e Qābus
	Setting up visitor facilities for tourists	Every six months	Base of Gonbad e Qābus
	Interviewing visitors to sample their opinions on the facilities by questionnaires	particular months	Base of Gonbad e Qābus
Development	Urban Planing	Every six months	Base of Gonbad e Qābus
	Urban Programing		
	Road and streets construction		

CATEGORY	INDICATORS	PERIODICITY	LOCATION OF RECORDS
Regulations	Buffer zone All constructions should be taken under permission and monitoring of <i>ICHHTO</i>	Every month	Base of Gonbad e Qābus
	Core zone All interventions should be under control of <i>ICHHTO</i>	Twice a month	Base of Gonbad e Qābus

6. b. Administrative arrangements for monitoring property

The Iranian Cultural Heritage, Handicrafts and Tourism Organization (ICHHTO) has overall administrative and financial responsibilities toward conservation, preservation and protection of historic monuments and sites in Iran. ICHHTO has its branches in every Province of the country. Major historic and important cities, such as Gonbad-e Kāvus, may have an office for cultural heritage. Some 70 major historic sites such as Persepolis, Chogha Zanbil, Meidan-e Imam in Isfahan, Bisotun, Soltanieh, Takht-e Soleiman, Armenian Churches, Shushtar Hydraulic System, Susa, Bazaar of Tabriz, Bam, Pasargadae,and Gonbad-e Qābus have their own Research Bases at the site so that constant monitoring of the state of the conservation of the property could be achieved. In the case of Gonbad-e Qābus, the Golestan Cultural Heritage, Handicrafts and Tourism Organization is the Provincial affiliate of ICHHTO. There is also an Office of Cultural Heritage in the town of Gonbad-e Kāvus and also the Research Base for the site of Gonbad-e Qābus.

Apart from the national and provincial experts a number of monitoring experts work on a permanent basis at the Research Base of Gonbad-e Qābus . They are all working on the direction of the Director of the Base who is responsible to the Head of Golestan Cultural Heritage, Handicrafts and Tourism Organization. They are not only responsible for the monitoring of different constituents of the Monitoring Program but also for planning and giving training workshops to the relevant individuals as well as providing sufficient information to the responsible authorities with regards to the quality and quantity of monitoring programs so that they all can be a part the overall comprehensive monitoring system. They also take necessary actions to be in continuous contacts with relevant research and educational institutions, whether public or private, so that their knowledge and expertise could be used for enhancing the monitoring of the site

Following are the professional details of some of the experts including their skills and contact details who are included in the monitoring unit of the research section of Gonbad-e Qābus Base:

Item	Name	Skill	contact	
			Tell. No	Email address
1	<i>H.Omrani</i>	Conservator and Restorer of Historic Buildings and Sites	+989123004120	Homrani1347@yahoo.com
2	<i>M.Maleka</i>	Conservator and Restorer of Ristorical Ruildings and Sites	+989119708265	<i>Mohammad_Maleka2000@yahoo.com</i>

Following organizations are in close contact and collaboration with the Golestan Cultural Heritage, Handicrafts and Tourism Organization , Gonbad-e Kavus Office of Cultural Heritage and particularly Gonbad-e Qābus Base for implementation of monitoring programs:

- **The Islamic Azad University of Gonbad-e Kāvus:** The Research Deputy of the said university is currently cooperating with Gonbad-e Qābus Base.
- **The consulting Engineering of *Naqshin e Khak*:** This company is currently engaged in the documentation and surveying of Gonbad-e Qābus architectural elements.

The Iranian metrological organization: This organization is responsible for monitoring the climate and weather conditions, qualification and aerial photography (www.irimo.ir).

- **The Municipality of Gonbad-e Kāvus**

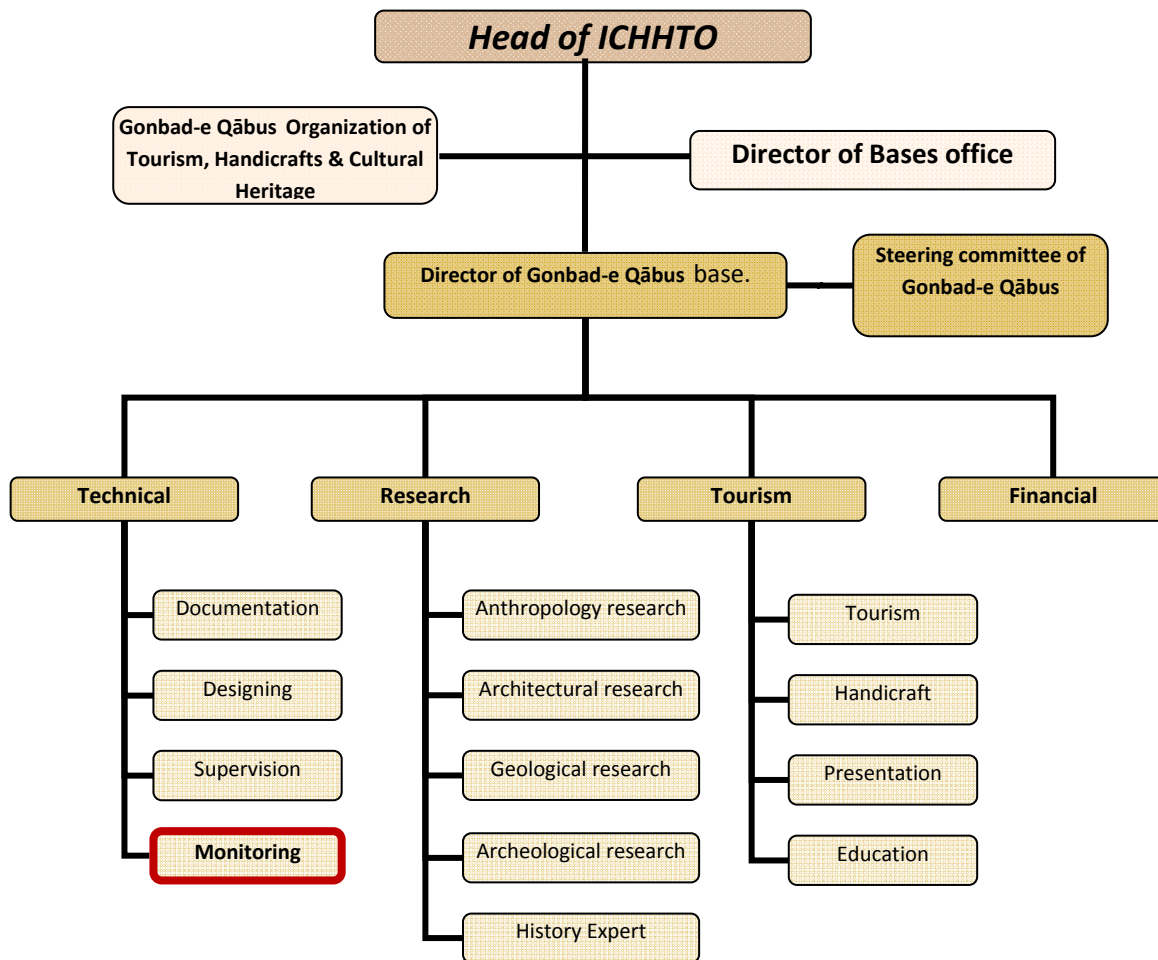


Figure 1- Organizations chart of Gonbad-e Qābus base and the location of the monitoring unit

6. c. Results of previous reporting exercises

6.c.1 Summary of Restoration Actions Taken During the Previous Years:

Please refer to sections 2 and 4 for detailed description of historic and contemporary interventions recorded. Following are the excerpts:

The structure of Gonbad-e Qābus has suffered some damages throughout its long history. For example the digging around the tower during the reign of a ruler in 1287-1288 A.H, order of Nader Shah to destroy the tower and the excavations of the Russian and British authorities and individuals during 1914 to 18.

However as explained before the first investigations were carried out in 1304 SAH. The first viable restoration report available was written by Nasrollah Meshkati who was assigned the job of repairing and restoring the tower in 1317-18 SAH. In 1317 SAH scaffolding was erected at the site to repair the roof. During the Second World War the Russian customs house was built at the foot of the tower. In 1372 SAH the ICHHTO Base in Mazandaran started to work systematically at the site and began the reorganization of the mound the site's landscape. In 1376 SAH ceremonies related to the millennium of Gonbad-e Qābus were held and on 5th Esfand 1383 SAH the ICHHTO Base in Jorjan and Gonbad-e Qābus was established. In the winter of 1384 SAH the some emergency restoration works were carried out. And from 2006 until today regular inspections and minor conservation activities have been carried out so that the site is kept in good state of conservation, the details of which can be found in Chapter 6.c.

6.d Monitoring of conservation and restoration by regular photography from specified locations:

6.d.1 Monitoring by aerial photography



1335

Figure.2. Aerial image 1957



1343

Figure3- Aerial image 1965



1374

Figure4- Aerial image 2000



Figure5- Aerial image 2010

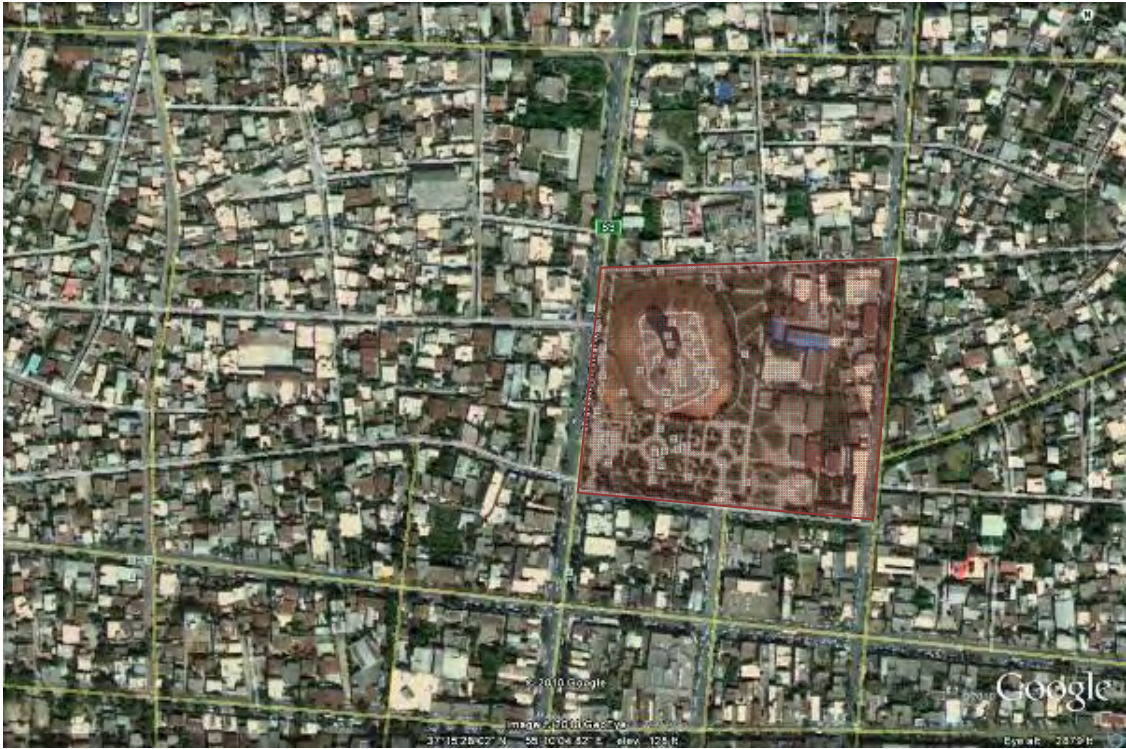


Figure6-Aerial image 2010

6.d.2 Monitoring of Gonbad-e Qābus Environment.



Figure7-1937 Echmidt)



Figure 8- From the platform of tower .2003



Figure .9- 1937 (Echmidt)



Figure 10_1950



Figure 11_1955



Figure 12_1971



Figure 13_1942



Figure 14_1914



Figure 15_2010



Figure 16_1914



Figure 17_2010



Figure 18_1914



Figure 19_2010



Figure 20_1914



Figure 21_2010



Figure 22_1920



Figure 23_2010



Figure 24_1914



Figure 25_2010



Figure 26_1914



Figure 27_2010



Figure 28_1914



Figure 29_2010



Figure 30_1914



Figure 31_2010



Figure 32-1937



Figure 33_2010

6.d.3 Monitoring of Gonbad-e Qābus building

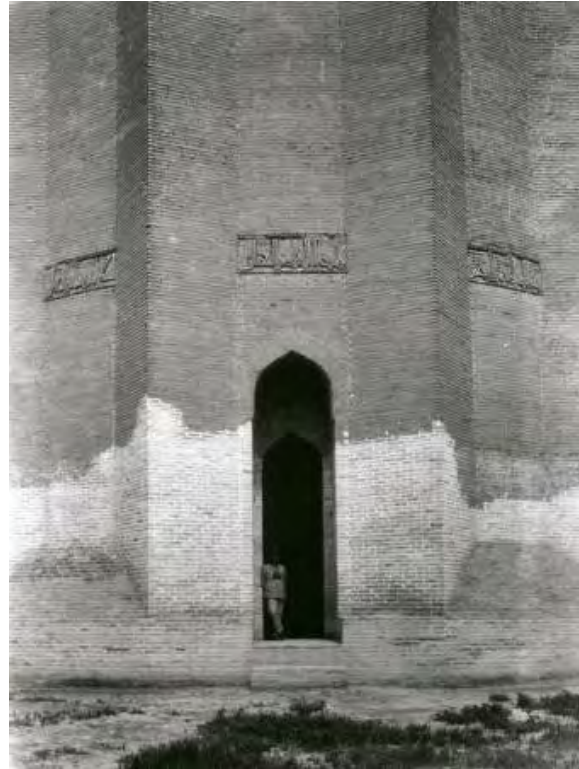


Figure 34_1937



Figure 35_2010



Figure 36_1937



Figure 37_2010



Figure 38_1937

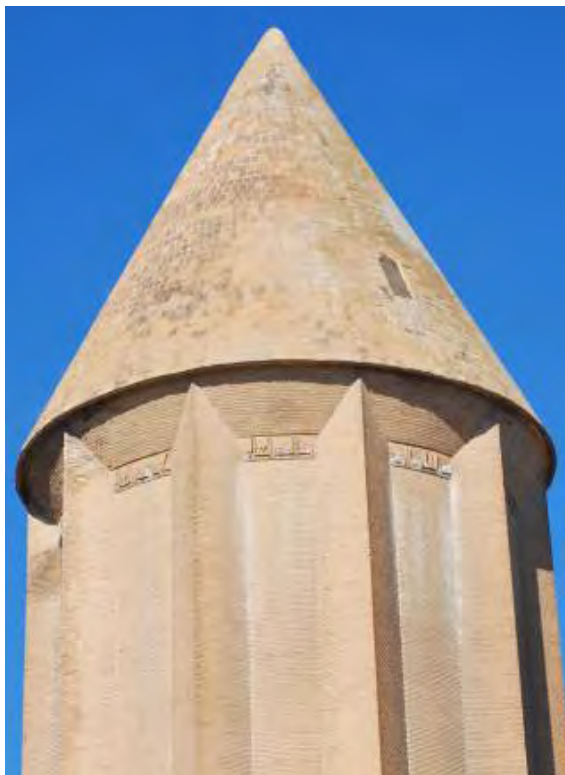


Figure 39_2010

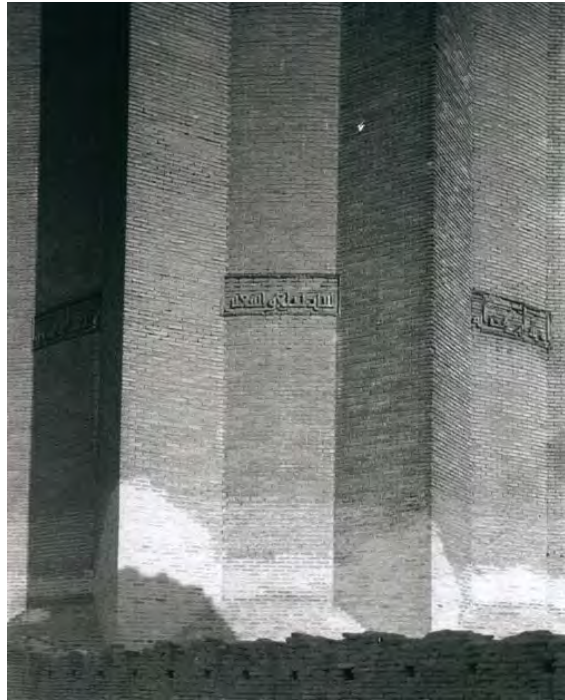


Figure.40_1937



Figure.41_2010



Figure.42_1937



Figure.43_2010



Figure.44._1914



Figure.45._2010

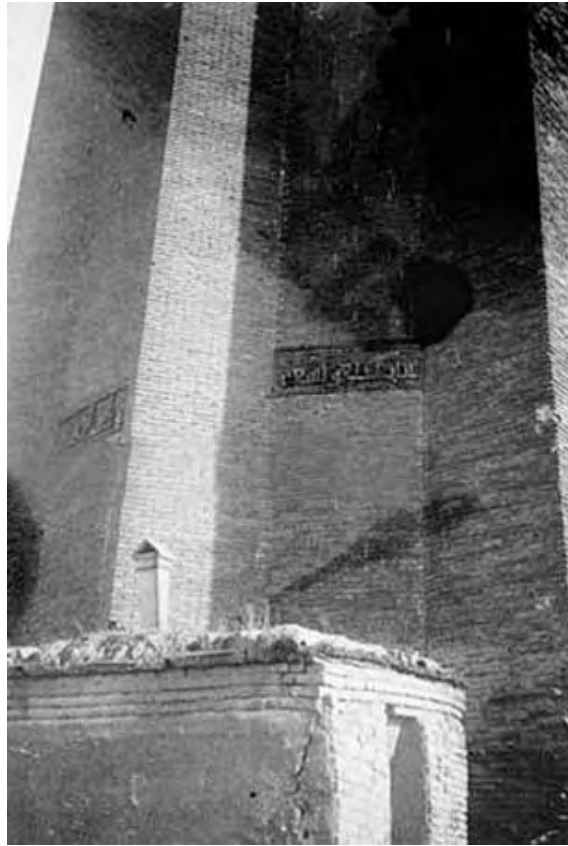


Figure.46_1914



Figure.47_2010

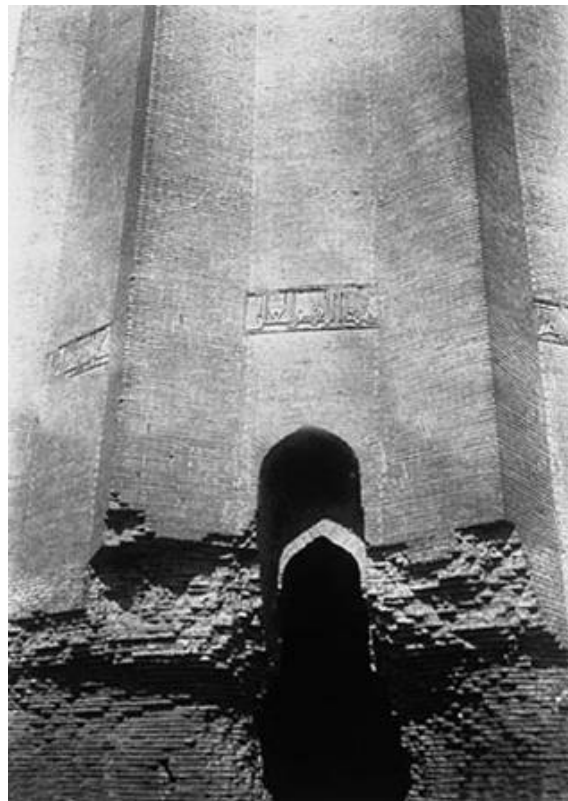


Figure.48_1914



Figure.49_2010

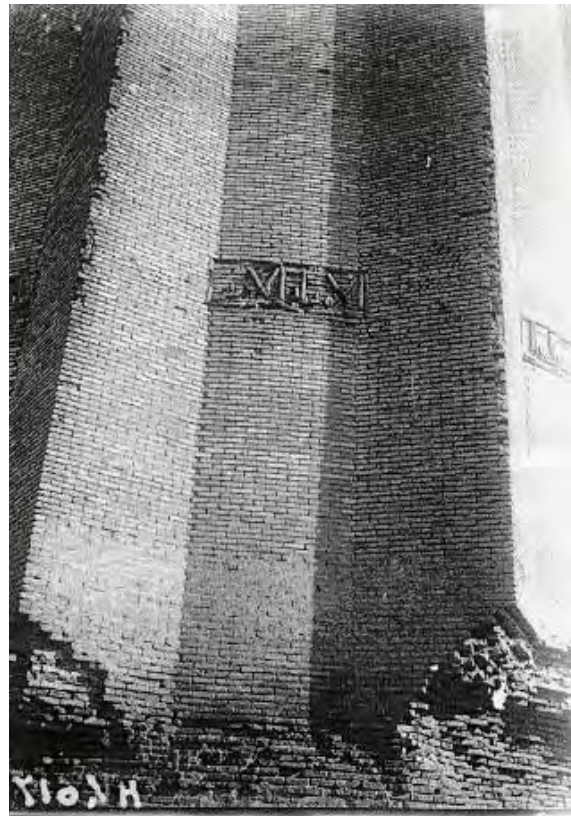


Figure.50_1914

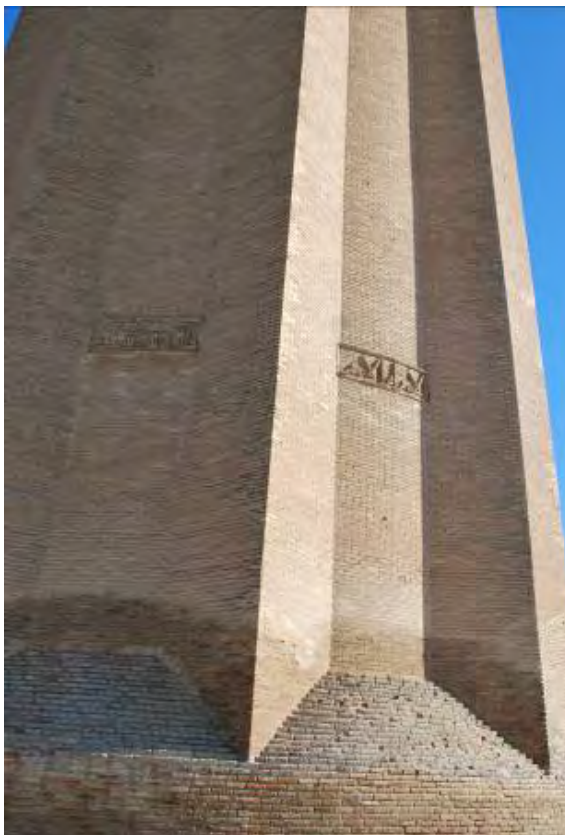


Figure.51_2010



Figure. 52_2000



Figure. 52_2010

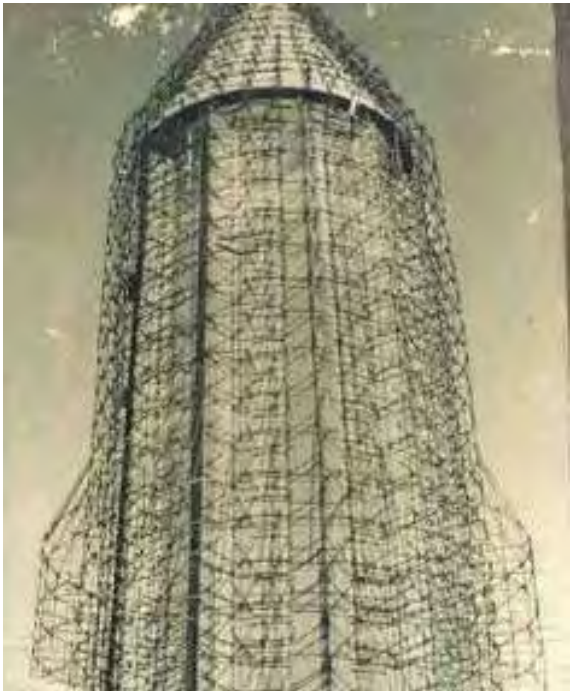


Figure.53_1970



Figure.54_2010



Figure.56_2010



Figure.55_1944



Figure.57_2010



Figure. 58_ 1984



Figure. 59_ 2010



Figure. 60_1995



Figure. 61_2010



Figure. 63._ 2010

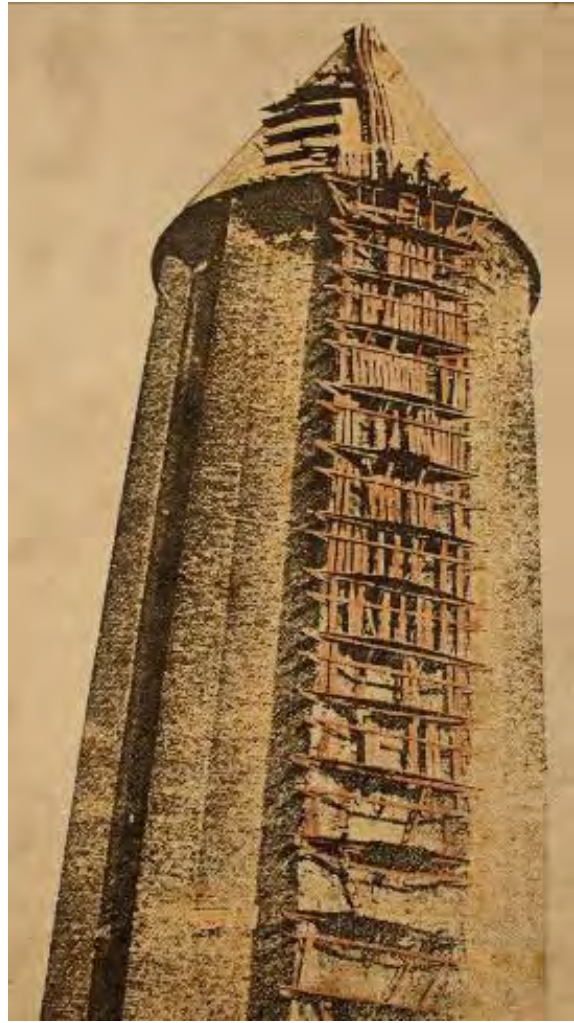


Figure. 62._ 1940



Figure. 64._ 1984



Figure. 65._ 2010



Figure. 66_1990



Figure. 67_2010



Figure. 68._ 1940



Figure. 70._ 2010



Figure. 69._ 2010



Figure. 71_ 2000



Figure. 72_ 2010



Figure. 73_2000



Figure. 74_2010



Figure. 75_2001



Figure. 76_2010



Figure. 77._ 2001



Figure. 78._ 2010

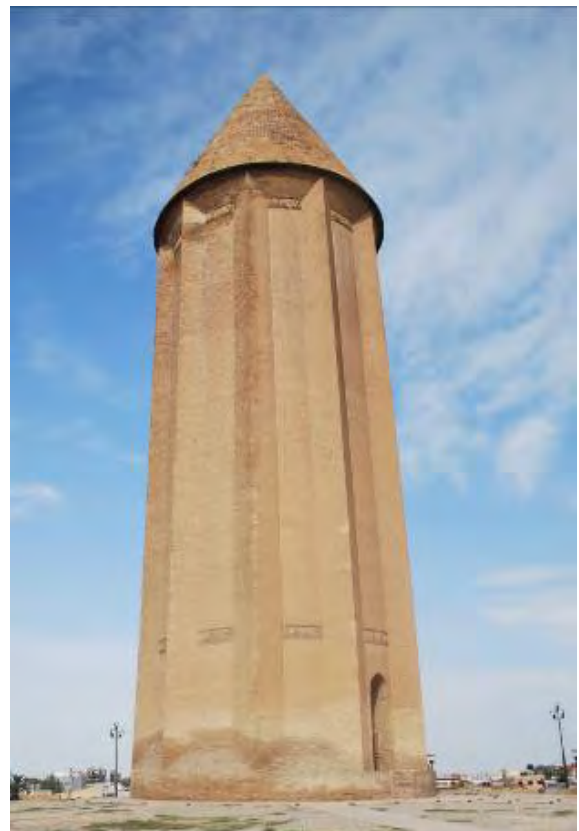


Figure. 79._ 2010



Figure. 80_ 2001



Figure. 81._ 2010

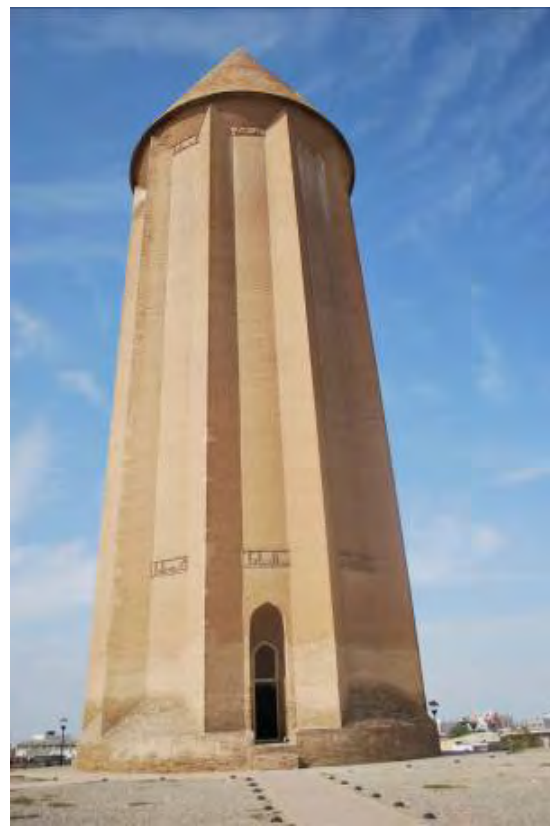


Figure. 92._ 2010



Figure. 84._ 2010



Figure. 83._ 2007



Figure. 85_2001



Figure. 86_2010



Figure. 87_ 2001



Figure. 88_ 2010



Figure. 89_1984



Figure. 90_2010



Figure. 91_2005



Figure. 92_2010



Figure. 93_2010



Figure. 94_2010



Figure. 95_2003



Figure. 96_2011



Figure. 97_2011



Figure. 98_2010



Figure. 99- 2007



Figure. 100_2010

6 .d.3 .. Monitoring of Cultural Events



Figure. 101- 2006



Figure. 102_2007



Figure. 103_2007



Figure. 104_2010



Figure. 105_2009



Figure. 106_2008



Figure. 107._ 2008



Figure. 108._ 2008



Figure. 109._ 2007



Figure. 110._ 2007



Figure. 111._2006



Figure. 112._2006



Figure. 113._ 2007



Figure. 113._ 2007



Figure. 114._ 2007



Figure. 115._ 2007



Figure. 116_ 2008



Figure. 117_ 2008



Figure. 118._ 2008



Figure. 119._ 2008



Figure 120._2008



Figure. 121._2008



Figure. 122._ 2008



Figure. 123._ 2008



Figure. 124._ 2008

6 d.5 Monitoring of Visitors and Tourism



Figure. 125._ 2007



Figure. 126._ 2007



Figure. 127._ 2008



Figure. 137._ 2010



Figure. 128._ 2009



Figure. 129._ 2010



Figure. 130._ 2010



Figure. 131._ 2010



Figure. 132_2010



Figure. 133_2010



Figure. 134._ 2010



Figure. 135._ 2010

7

Documentation

7.Documentation

7.a. Photographs, slides, image inventory and authorization table and other audiovisual materials

Plate No.	Format	Caption	Date of Photo/ map	Photographer	Source	
0	1	Digital	The Location of Iran	2009		www.maps.google.com
	2	Digital	The location of Province of Golestan in Iran	2010		GCHHTO*
	3	Digital	Location of the Tower of Gonbad-e Kāvus	2009		GCHHTO
	4	Digital	General view of Gonbad-e Qābus	2010	E. shojaei	GCHHTO
	5	Digital	General Landscape of Gonbad-e Kāvus	2010		GCHHTO
	6	Digital	Core Zone of Gonbad-e Qābus	2010		GCHHTO
	7	Digital	Buffer Zone of Gonbad-e Qābus	2010		GCHHTO
	8	Digital	Landscape of Gonbad-e Qābus	2010		GCHHTO
1	1	Digital	The location of Iran	2009		www.maps.google.com
	2	Digital	The Location of Gunbad-I Kavus in Golestan province	210		www.maps.google.com
	3	Digital	The Location of Gonbad-e Qābus Tomb Tower	2010		www.maps.google.com
	4	Digital	Map of Showing the Location of the of Nominated property	2010		www.maps.google.com
	5	Digital	The Aerial Image of Showing the Location of the of Nominated property	2010		www.maps.google.com
	6	Digital	The Aerial Image of Showing the Limited of the Nominated property	2010		GCHHTO
2	1	Digital	Tomb of Cyrus in Passargad	2008		Pasargad Base(ICHHTO)
	2	Digital	Tomb of Qābus ibn Voshmgir in Gonbad-e Kāvus	2010	GCHHTO	GCHHTO
	3	Digital	Radkan Tomb Tower	2010	GCHHTO	GCHHTO
	4	Digital	Radkan Location	2010		www.maps.google.com
	5	Digital	Radkan Villege Location in Northeastern of the country	2010		www.maps.google.com
	6	Digital	Gonbad-e Qābus Tomb Tower General view	2008		GCHHTO
	7	Digital	Part of Lower Inscription	2008		GCHHTO
	8	Digital	Part of Upper Inscription	2008	GCHHTO	GCHHTO
	9	Digital	Gonbad-e Kāvus Location in Northeastern of the country	2010		GCHHTO
	10	Digital	Location of Gonbad-e Kāvus in Golestan Province	2010		www.maps.google.com
	11	Digital	Location of Gonbad-e Qābus Tomb Tower in Gonbad-e Kavus city	2010		www.maps.google.com
	12	Digital	Location of the ancient city of Jorjan	2008		GCHHTO
	13	Digital	Hyrcanian in the Map of Median period			GCHHTO
	14	Digital	location of Gonbad-e Kāvus City in Hilliness Map of Iran	2010		www.maps.google.com
	15	Digital	The epicenter of the quake in the northwest of Gonbad-e Qābus , October 7, 2004	2008		yadgar tarh
	16	Digital	The zoning map of earthquake hazard in northeastern of Iran	2008		yadgar tarh
	17	Digital	Two rivers flow along the ring road of Gonbad-e Kāvus	2010		www.maps.google.com
	18	Digital	Ostodan [ossuary] in Yazd	2008		GCHHTO
	19	Digital	Ostodan [ossuary] in Siraf	2008		GCHHTO
	20	Digital	Dakhmeh [catacombs] in Naqsh-e Rostam	2008		GCHHTO
	21	Digital	Dakhmeh [catacombs] in Eshaqvand	2010		GCHHTO
	22	Digital	Section and plan of Qubbat al-Sulaibiya in Samarra		Herzfeld	Herzfeld
	23	Digital	Tomb Towers scattered in northeastern of country	2010		GCHHTO
	24	Digital	the Towers of Karaghan	2010		GCHHTO
	25	Digital	A Mongolian yurt	2008		GCHHTO
	26	Digital	Yurts near the Gonbad-e Qābus Tomb Tower	1920	GCHHTO	GCHHTO
	27	Digital	Ma'soumeh's shrine in Qom	2009		GCHHTO
	28	Digital	Tomb of Hafez in shiraz	2009		GCHHTO
	29	Digital	tomb of Eb-n-e Sina in Hamedan	2009		GCHHTO

Plate No.	Format	Caption	Date of Photo/ map	Photographer	Source	
	30	Digital	Tomb of Qabus Ebn-e voshmgir in Gonbad-e kavus	2010	E.shojaei	GCHHTO
	31	Digital	Qadam Gah near Neishabur	2009		GCHHTO
	32	Digital	some Tombs with circular plans (or transformed circular plan)	2010		GCHHTO
2	33	Digital	some Tombs with polyhedral plans (four, six, eight, etc sides)	2010		GCHHTO
	34	Digital	Gonbad-e Qabus Tomb Tower, View from Azad Shahr	2009	GCHHTO	GCHHTO
	35	Digital	Gonbad-e Qabus Tomb Tower, View from Asb Davani	2009	GCHHTO	GCHHTO
	36	Digital	Location of Tomb Tower in Gonbad-e Kavus City	2010		GCHHTO
	37	Digital	Floor Plan of Gonbad-e Qabus Tomb Tower	2009		GCHHTO
	38	Digital	Tomb Tower of Gonbad-e Qabus with the Height of about 53	2010	GCHHTO	GCHHTO
	39	Digital	Top view and Vertical Section of Tomb Tower	2009		GCHHTO
	40	Digital	Dimension and The area of mound (meters)	2010		www.maps.google.com
	41	Digital	Plan of the Tomb Tower, horizontal Section and principles and geometric order of Gonbad-e Qabus	2010	E.shojaei	GCHHTO
	42	Digital	principles and geometric order in height of Gonbad-e Qabus tomb tower	2010	E.shojaei	GCHHTO
	43	Digital	Component Parts of Gonbad-e Qabus Tomb Tower	2010	E.shojaei	GCHHTO
	44	Digital	The structure of Gonbad-e Qabus	2009	Abbasi	GCHHTO
	45	Digital	The Location of Trenches	2009	Abbasi	GCHHTO
	46	Digital	Trenches Details	2009	Abbasi	GCHHTO
	47	Digital	Photos from Inside the Trenches	2009	GCHHTO	GCHHTO
	48	Digital	Floor Plan and The Body of the Tower	2008	GCHHTO	GCHHTO
	49	Digital	Photogrammetry of the south side (Lower Body)	2008	GCHHTO	GCHHTO
	50	Digital	South Side of Tomb tower (Lower Body)	2008	GCHHTO	GCHHTO
	51	Digital	Horizontal Sections of Body Tomb Tower	2008	GCHHTO	GCHHTO
	52	Digital	Entrance in Plan and Section of Tomb Tower	2008	GCHHTO	GCHHTO
	53	Digital	Top View and Section of Tomb Tower	2008	GCHHTO	GCHHTO
	54	Digital	The Roof (Conical Roof)	2008		GCHHTO
	55	Digital	Section of Conical Roof	2008	GCHHTO	GCHHTO
	56	Digital	View of Conical Roof	2008	GCHHTO	GCHHTO
	57	Digital	Horizontal Section of Conical Roof	2008	GCHHTO	GCHHTO
	58	Digital	The Edge of the Gutter of the Conical Roof	2008	GCHHTO	GCHHTO
	59	Digital	Detail of Edge of the Gutter	2008	GCHHTO	GCHHTO
	60	Digital	Detail of the Window	2008	GCHHTO	GCHHTO
	61	Digital	Location of window in the conical roof	2008	GCHHTO	GCHHTO
	62	Digital	Detail of the brick work in the conical roof	2008	GCHHTO	GCHHTO
	63	Digital	The typical brick fringed used in the conical roof	2008	GCHHTO	GCHHTO
	64	Digital	Mausoleum of Amir Ismail Samani			ICHHTO**
	65	Digital	Decoration of Amir Ismail Samani Mausoleum			ICHHTO
	66	Digital	Decorative of Gonbad-e Qabus Tomb Tower	2008	GCHHTO	GCHHTO
	67	Digital	Brick Decoration in Body of Tomb Tower	2008	GCHHTO	GCHHTO
	68	Digital	Brick 1. Decoration in Body of Tomb Tower	2008	GCHHTO	GCHHTO
	69	Digital	Brick 2. Decoration in Body of Tomb Tower	2008	GCHHTO	GCHHTO
	70	Digital	Brick 3. Decoration in Body of Tomb Tower	2008	GCHHTO	GCHHTO
	71	Digital	Brick 4. Decoration in Body of Tomb Tower	2008	GCHHTO	GCHHTO
	72	Digital	Brick 5. Decoration in Body of Tomb Tower	2008	GCHHTO	GCHHTO
	73	Digital	Brick 6. Decoration in Body of Tomb Tower	2008	GCHHTO	GCHHTO
	74	Digital	Brick 7. Decoration in Body of Tomb Tower	2008	GCHHTO	GCHHTO
	75	Digital	Brick 8. Decoration in Body of Tomb Tower	2008	GCHHTO	GCHHTO
	76	Digital	Brick 9. Decoration in Body of Tomb Tower	2008	GCHHTO	GCHHTO
	77	Digital	Brick 10. Decoration in Body of Tomb Tower	2008	GCHHTO	GCHHTO
	78	Digital	Moqarnass work, inside of the entrance façade	2008	GCHHTO	GCHHTO
	79	Digital	Moqarnass work inside of the entrance façade	2010	M. Ebrahimi	GCHHTO
	80	Digital	Stratigraphical Section DV of Gonbad-e Qabus	2009	Mr. Abbasi	GCHHTO

Plate No.	Format	Caption	Date of Photo/ man	Photographer	Source	
	81	Digital	Proportionality between the foundation and body	2008	E.shojaei	GCHHTO
	82	Digital	Flanges of body	2008	GCHHTO	GCHHTO
	83	Digital	view of Flanges	2008	GCHHTO	GCHHTO
	84	Digital	location of conical Roof joining the body	2010	GCHHTO	GCHHTO
	85	Digital	Section of conical Roof	2008	GCHHTO	GCHHTO
2	86	Digital	Inseparable Mortar used in the foundation of Tomb Tower	2009	Mr. Abbasi	GCHHTO
	87	Digital	The Typical Brick Used in Roof	2008	GCHHTO	GCHHTO
	88	Digital	The Typical Brick Fringed Used in Conical Roof	2008	GCHHTO	GCHHTO
	89	Digital	Detail of Brick Work in the Conical Roof	2008	GCHHTO	GCHHTO
	90	Digital	View From Inside the Tomb Tower	2010	GCHHTO	GCHHTO
	91	Digital	View From Inside the Tomb Tower	2010	GCHHTO	GCHHTO
	92	Digital	Hyrceanian in the Map of Median period			
	93	Digital	Image map's in the Masalek Al Mamalek Book	4th AD		GCHHTO
	94	Digital	Buildings belonging to the Russian authorities near	1914	GCHHTO	GCHHTO
	95	Digital	Gonbad-e Qabus from a distance of 150 meters in	1938	Erich FriDRICH Schm	GCHHTO
	96	Digital	view of Gonbad-e Qabus Tomb Tower in 50s	1986	George Krstr	GCHHTO
	97	Digital	Gonbad-e Kavus City development	2008		Yadgar tarh
3	1	Digital	General View of Gonbad-e Qabus Tomb Tower	2010	M.Ebrahimian	GCHHTO
	2	Digital	Floor plan of Gonbad-e Qabus tomb tower	2010		GCHHTO
	3	Digital	Gonbad-e Qabus Exterior view from the north, with entrance	2010	Elham Shojaei	GCHHTO
	4	Digital	Floor plan of Radkan-West tomb tower	2010	GCHHTO	GCHHTO
	5	Digital	Radkan-West Exterior view of tomb tower	Unknown	Ernest Herzfeld	GCHHTO
	6	Digital	Radkan-West Exterior view looking up at the tomb with stairs leading up to it	2003	Saeed Soleimani	GCHHTO
	7	Digital	Radkan-West Exterior view showing decorative bands below conical dome	2003	Saeed Soleimani	GCHHTO
	8	Digital	Floor plan of Lajim Tomb Tower			Iranian Architecture of The Islamic Period,Ed.M.Y Kiyani
	9	Digital	lajim Exterior view from dirt path	2003	Saeed Soleimani	MCHHTO***
	10	Digital	Lajim Exterior view from west, with scaffolding set up for restoration	2003	Saeed Soleimani	MCHHTO
	11	Digital	Lajim Exterior view showing decorative bands and dome, with scaffolding set up for restoration	2003	Saeed Soleimani	MCHHTO
	12	Digital	Mehmandust Floor Plan of tomb tower	2009		Iranian Architecture of The Islamic Period,Ed.M.Y Kiyani
	13	Digital	Mehmandust Exterior view from south, with the entrance	2003	SCHHTO	SCHHTO
	14	Digital	Mehmandust View of tomb from asphalt road	2003	SCHHTO	SCHHTO
	15	Digital	Kashaneh Floor plan of tomb tower			Iranian Architecture of The Islamic Period,Ed.M.Y Kiyani
	16	Digital	Kashaneh Exterior view, after restoration	2001	SCHHTO	SCHHTO
	17	Digital	Kashaneh Upper shaft of tomb, with precinct wall in the foreground	1960	Josephine Powell	SCHHTO
	18	Digital	Kashaneh View looking south at the alley connecting the Shahrokhi madrasah to the entrance of Friday Mosque of Bastam with the tomb tower seen in background, looking south	1972	SCHHTO	SCHHTO
	19	Digital	Floor plan of Radkan-East tomb tower	2009		Iranian Architecture of The Islamic Period,Ed.M.Y Kiyani
	20	Digital	Radkan-East Exterior view, showing upper section of tomb with damaged dome		Josephine Powell	KhCHHTO****
	21	Digital	radkan-East Exterior view, showing upper section of tomb with damaged dome	2003	Manoochehr Arian	www.jamejamshid.com
	22	Digital	Floor plan of Ala ad Din tomb tower	2009	GCHHTO	Iranian Architecture of The Islamic Period,Ed.M.Y Kiyani
	23	Digital	Ala ad Din tomb tower General view	1933	Robert Byron	GCHHTO

Plate No.	Format	Caption	Date of Photo/ man	Photographer	Source	
	24	Digital	Ala ad Din tomb tower Exterior view, looking toward the entrance	1951	GCHHTO	GCHHTO
	25	Digital	Ala ad Din tomb tower Exterior view after restoration	2007	GCHHTO	GCHHTO
	26	Digital	Floor plan of Toqrol Tomb Tower	2009	GCHHTO	Iranian Architecture of The Islamic Period, Ed. M.Y Kivani
	27	Digital	View of Toqrol tomb tower from a distance	Unknown	Ernst Herzfeld	GCHHTO
3	28	Digital	Exterior view of Toqrol tomb tower from west, with the northern entrance seen on the left; the stairway, which begins above the entrance, was probably accessed with a wooden ladder	Unknown	GCHHTO	GCHHTO
	29	Digital	Toqrol Tomb Tower Exterior view, looking towards the entrance	2003	GCHHTO	GCHHTO
	30	Digital	Floor plan of Resget tomb tower	2009		Iranian Architecture of The Islamic Period, Ed. M.Y Kivani
	31	Digital	Upper half of Resget tomb tower, with dome	2008	Saeed soleymani	MCHHTO
	32	Digital	Resget Tomb Tower Exterior view from northwest, looking up at the tomb	2003	Saeed soleymani	MCHHTO
	33	Digital	View of Resget Tomb Tower from a distance among hills, with fields in the foreground	2003	Saeed soleymani	MCHHTO
	34	Digital	Floor plan of Hafez abd ullah Tomb Tower	2009		Iranian Architecture of The Islamic Period, Ed. M.Y Kivani
	35	Digital	Hafez Abd ullah Tomb Tower Exterior view, after restoration	2006	H.Alvandi	GCHHTO
	36	Digital	Hafez Abd ullah Tomb Tower Exterior view, looking towards the entrance	2006	H.Alvandi	GCHHTO
	37	Digital	Hafez Abd ullah Tomb Tower Exterior view	2000	T.Grigor	GCHHTO
	38	Digital	Floor plan of Pir-e Alamdar tomb tower	2009		SCHHTO
	39	Digital	Pir-e Alamdar tomb tower Exterior view during restoration	Unknown	Josephine Powell	SCHHTO
	40	Digital	Pir-e Alamdar tomb tower Exterior view, prior to restoration	Unknown	Josephine Powell	SCHHTO
	41	Digital	Pir-e Alamdar tomb tower Exterior view with the entrance	2002	N. Kasrain	SCHHTO
	42	Digital	Floor plan of Emamzade Azhar tomb tower	2009		Iranian Architecture of The Islamic Period, Ed. M.Y Kivani
	43	Digital	Emamzade Azhar tomb tower Exteriorrear view	1984	GCHHTO	GCHHTO
	44	Digital	Emamzade Azhar tomb tower Exteriorrear view	1984	GCHHTO	GCHHTO
	45	Digital	Floor plan of Emamzade Abdullah tomb tower	2009		Iranian Architecture of The Islamic Period, Ed. M.Y Kivani
	46	Digital	Emamzade Abdullah tomb tower Exterior view	2008	Persia Older Than History CD	Persia Older Than History CD
	47	Digital	Emamzade Abdullah tomb tower Exterior view	2006	H. Ghafari	GCHHTO
	48	Digital	Floor plan of Mille Akhangan tomb tower	2009		Iranian Architecture of The Islamic Period, Ed. M.Y Kivani
	49	Digital	Top view of Mille Akhangan tomb tower	Unknown	GCHHTO	GCHHTO
	50	Digital	Exterior view of Mille Akhangan tomb tower	Unknown	GCHHTO	GCHHTO
	51	Digital	Floor plan of Chihil Dukhtaran tomb tower	2009		SCHHTO
	52	Digital	Exterior view, seen prior to restoration, with the wall of Khanagah of Shah Rukh seen behind	Unknown	Ernst Hertzfeld	SCHHTO
	53	Digital	Exterior view of Chihil Dukhtaran tomb tower	2003	SCHHTO	SCHHTO
	54	Digital	Chihil Dukhtaran tomb tower Exterior view from adjacent street	2003	SCHHTO	SCHHTO
	55	Digital	Floor plan of Sultan Haidar tomb tower	2009		ASCHHTO****
	56	Digital	Sultan Haidar Tomb Tower Exterior view with portal	1984	ASCHHTO	ASCHHTO
	57	Digital	Sultan Haidar Tomb Tower Exterior view	2001	ASCHHTO	ASCHHTO
	58	Digital	Sultan Haidar Tomb Tower Exterior view with scaffolding set up for restoration	2009	ASCHHTO	ASCHHTO
	59	Digital	Floor plan of Ibn-e Sina mausoleum	2010		GCHHTO
	60	Digital	Exterior view of Ibn-e Sina mausoleum	2009	GCHHTO	GCHHTO
	61	Digital	Exterior view of Ibn-e Sina mausoleum	2009	GCHHTO	GCHHTO
	62	Digital	Comparison Cart between Gonbad-e Qâbus and the above-mentioned tomb towers in Iran	2010	GCHHTO	GCHHTO

Plate No.	Format	Caption	Date of Photo/ map	Photographer	Source	
3	63	Digital	Comparison Cart between Gonbad-e Qābus and the above-mentioned tomb towers in Iran	2010	GCHHTO	GCHHTO
	64	Digital	Comparison Cart between Gonbad-e Qābus and the above-mentioned tomb towers in Iran	2010	GCHHTO	GCHHTO
	65	Digital	Floor plan of Mu'mine Khatun tomb tower	2009		The Islamic Architecture of Iranian The Seljuqs Period, Dr. Gholam A. Hatam
	66	Digital	Exterior view of Mu'mine Khatun tomb tower	Unknown	Ernst Hertzfeld	www.Arc net.org
	67	Digital	Exterior view from Northeast of Mu'mine Khatun tomb tower	2003	A. Boostani	www.Arc net.org
	68	Digital	Exterior view from Southeast of Mu'mine Khatun tomb tower	2003	A. Boostani	www.Arc net.org
	69	Digital	Floor plan of Halime Hatun tomb tower	2009		Robert Hillenbrand, Islamic Architecture , p:540
	70	Digital	Exterior view of Halime Hatun tomb tower	1913	Walter Bachmann	www.Arc net.org
	71	Digital	Exterior view with entrance of Halime Hatun tomb tower	2007		www.Arc net.org
	72	Digital	Floor plan of Zeynel Bey tomb tower	2009		Robert Hillenbrand, Islamic Architecture , p:541
	73	Digital	Zeynel Bey tomb tower Overall site on banks of Tigris River	1984	Richard Brotherton	www.Arc net.org
	74	Digital	Exterior view, with entrance of Zeynel Bey tomb tower	1984	Richard Brotherton	www.Arc net.org
	75	Digital	Exterior view, with entrance of Zeynel Bey tomb tower	Unknown		www.Arc net.org
	76	Digital	Floor plan of Döner tomb tower	2009		Robert Hillenbrand, Islamic Architecture , p:540
	77	Digital	Döner tomb tower Exterior view from west, showing tomb in public park	1989	Murat Germen	www.Arc net.org
	78	Digital	Döner tomb tower Exterior view from southeast, the rear facade	Unknown	Walter B. Denny	www.Arc net.org
	79	Digital	Floor plan of Emir Bayındır tomb tower	2009		Robert Hillenbrand, Islamic Architecture , p:540
	80	Digital	Bayındır tomb tower West elevation	1984	Tülay Artan	www.Arc net.org
	81	Digital	Bayındır tomb tower Exterior view from southeast	1913	Walter Bachmann	www.Arc net.org
	82	Digital	Bayındır tomb tower General view from southeast showing the tomb and the small mosque	Unknown		www.galenfrysinger.com
	83	Digital	Floor plan of Hüseyin Timur and Eser Tekin tomb tower	2009		Robert Hillenbrand, Islamic Architecture , p:540
	84	Digital	Eser Tekin tomb tower Genral view	1913	Walter Bachmann	www.Arc net.org
	85	Digital	General view of the "Twin Tombs" (Çifte Kumbet), with Tomb of Hüseyin Timur and Eser Tekin in the foreground and Tomb of Sirin Hatun and Bugatay Aka in the background	1913	Walter Bachmann	www.Arc net.org
	86	Digital	General view of the "Twin Tombs" (Çifte Kumbet), with Tomb of Hüseyin Timur and Eser Tekin in the foreground and Tomb of Sirin Hatun and Bugatay Aka in the background	2008	O.Seref Halicioğlu	www.panoramio.com
	87	Digital	Floor plan of Gudi Khatun tomb tower	1999		Robert Hillenbrand, Islamic Architecture , p:532
	88	Digital	Genral view of Gudi Khatun tomb tower	2000		www.kufic.info.org
	89	Digital	Genral view of Gudi Khatun tomb tower	2000		www.kufic.info.org
	90	Digital	Floor plan of Bardan tomb tower	1999		Iranian Architecture of The Islamic Period, Ed: M.Y Kiyani
	91	Digital	Genral view of Barda tomb tower	2009		www.Azerbaijan.az
	92	Digital	Genral view of Barda tomb tower			www.Azerbaijan.az
	93	Digital	Floor plan of Mama Hatun tomb tower	1999		Robert Hillenbrand, Islamic Architecture , p:390
	94	Digital	General view of Mama Hatun tomb tower from southwest, showing circular fortifications, with portal	1970	Walter B. Denny	www.Arc net.org
	95	Digital	View of Mama Hatun tomb tower from ramparts, looking east-northeast	Unknown	Walter B. Denny	www.Arc net.org
	96	Digital	View of Mama Hatun tomb tower in courtyard, looking northeast at doorway and staircase	Unknown	Walter B. Denny	www.Arc net.org
	97	Digital	Comparison Cart between Gonbad-e Qābus and the above-mentioned tomb towers in World	2010	GCHHTO	GCHHTO
	98	Digital	Comparison Cart between Gonbad-e Qābus and the above-mentioned tomb towers in World	2010	GCHHTO	GCHHTO
	99	Digital	Comparison Cart between Gonbad-e Qābus and the above-mentioned tomb towers in World	2010	GCHHTO	GCHHTO
	1	Digital	The ascending and descending moisture	2010	M. Ebrahimian	GCHHTO

Plate No.	Format	Caption	Date of Photo/ map	Photographer	Source	
4	2	Digital	Ascending and descending moistures	2010	M. Ebrahimian	GCHHTO
	3	Digital	Descending moisture	2010	M. Ebrahimian	GCHHTO
	4	Digital	Ascending moisture on the top of the roof	2010	M. Ebrahimian	GCHHTO
	5	Digital	The view of the cracks in different parts of the tower	2010	M. Ebrahimian	GCHHTO
	6	Digital	The view of the biological factors on the roof	2010	M. Ebrahimian	GCHHTO
	7	Digital	Aerial Image 1957	1957	GCHHTO	GCHHTO
	8	Digital	erial Image 1965	1965	GCHHTO	GCHHTO
	4	9	Digital	Aerial Image 2000	2000	GCHHTO
10		Digital	Aerial Image 2010	2010		maps.google.com
11		Digital	Aerial Image 2010	2010		maps.google.com
6	1	Digital	owners of the Buffer zone	2010		GCHHTO
	2	Digital	map of owners of the Buffer zone	2010		GCHHTO
	3	Digital	ICHHTO chart	2010		GCHHTO
	4	Digital	The procedure for approval of development plans by HGAUP	2010		GCHHTO
	5	Digital	Organizations chart of Gonbad-e Qabus Base	2010		GCHHTO
	6	Digital	Statistics of visitors of Gonbad-e Kavus Town	2010		GCHHTO
	1	Digital	Organizations chart of Gonbad-e Qabus base and the location of the monitoring unit			GCHHTO
	2	Digital	Aerial image 1957	1957	GCHHTO	GCHHTO
	3	Digital	Aerial image 1965	1965	GCHHTO	GCHHTO
	4	Digital	Aerial image 2000	2000	GCHHTO	GCHHTO
	5	Digital	Aerial image 2010	2010		maps.google.com
	6	Digital	Aerial image 2010	2010		maps.google.com
	7	Digital	monitoring of Gonbad-e Qabus Tomb Tower Environment	1937	Eshmit	GCHHTO
	8	Digital	monitoring of Gonbad-e Qabus Tomb Tower Environment	1937	GCHHTO	GCHHTO
	9	Digital	monitoring of Gonbad-e Qabus Tomb Tower Environment	2003	GCHHTO	GCHHTO
	10	Digital	monitoring of Gonbad-e Qabus Tomb Tower Environment	1950	GCHHTO	GCHHTO
	11	Digital	monitoring of Gonbad-e Qabus Tomb Tower Environment	1955	GCHHTO	GCHHTO
	12	Digital	monitoring of Gonbad-e Qabus Tomb Tower Environment	1971	GCHHTO	GCHHTO
	13	Digital	monitoring of Gonbad-e Qabus Tomb Tower Environment	1942	GCHHTO	GCHHTO
	14	Digital	monitoring of Gonbad-e Qabus Tomb Tower Environment	1914	GCHHTO	GCHHTO
	15	Digital	monitoring of Gonbad-e Qabus Tomb Tower Environment	2010	M. Ebrahimian	GCHHTO
	16	Digital	monitoring of Gonbad-e Qabus Tomb Tower Environment	1914	GCHHTO	GCHHTO
	17	Digital	monitoring of Gonbad-e Qabus Tomb Tower Environment	2010	M. Ebrahimian	GCHHTO
	18	Digital	monitoring of Gonbad-e Qabus Tomb Tower Environment	1914	GCHHTO	GCHHTO
	19	Digital	monitoring of Gonbad-e Qabus Tomb Tower Environment	2010	M. Ebrahimian	GCHHTO
20	Digital	monitoring of Gonbad-e Qabus Tomb Tower Environment	1914	GCHHTO	GCHHTO	
21	Digital	monitoring of Gonbad-e Qabus Tomb Tower Environment	2010	M. Ebrahimian	GCHHTO	
22	Digital	monitoring of Gonbad-e Qabus Tomb Tower Environment	1920	GCHHTO	GCHHTO	
23	Digital	monitoring of Gonbad-e Qabus Tomb Tower Environment	2010	M. Ebrahimian	GCHHTO	
24	Digital	monitoring of Gonbad-e Qabus Tomb Tower Environment	1914	GCHHTO	GCHHTO	
25	Digital	monitoring of Gonbad-e Qabus Tomb Tower Environment	2010	M. Ebrahimian	GCHHTO	

Plate No.	Format	Caption	Date of Photo/ man	Photographer	Source	
6	26	Digital	monitoring of Gonbad-e Qābus Tomb Tower Environment	1914	GCHHTO	GCHHTO
	27	Digital	monitoring of Gonbad-e Qābus Tomb Tower Environment	2010	M. Ebrahimian	GCHHTO
	28	Digital	monitoring of Gonbad-e Qābus Tomb Tower Environment	1914	GCHHTO	GCHHTO
	29	Digital	monitoring of Gonbad-e Qābus Tomb Tower Environment	2010	M. Ebrahimian	GCHHTO
	30	Digital	monitoring of Gonbad-e Qābus Tomb Tower Environment	1914	GCHHTO	GCHHTO
	31	Digital	monitoring of Gonbad-e Qābus Tomb Tower Environment	2010	M. Ebrahimian	GCHHTO
	32	Digital	monitoring of Gonbad-e Qābus Tomb Tower Environment	1937	GCHHTO	GCHHTO
	33	Digital	monitoring of Gonbad-e Qābus Tomb Tower Environment	2010	M. Ebrahimian	GCHHTO
	34	Digital	Monitoring of Gonbad-e Qābus Tomb Tower building	1937	GCHHTO	GCHHTO
	35	Digital	Monitoring of Gonbad-e Qābus Tomb Tower building	2010	M. Ebrahimian	GCHHTO
	36	Digital	Monitoring of Gonbad-e Qābus Tomb Tower building	1937	GCHHTO	GCHHTO
	37	Digital	Monitoring of Gonbad-e Qābus Tomb Tower building	2010	M. Ebrahimian	GCHHTO
	38	Digital	Monitoring of Gonbad-e Qābus Tomb Tower building	1937	GCHHTO	GCHHTO
	39	Digital	Monitoring of Gonbad-e Qābus Tomb Tower building	2010	M. Ebrahimian	GCHHTO
	40	Digital	Monitoring of Gonbad-e Qābus Tomb Tower building	1937	GCHHTO	GCHHTO
	41	Digital	Monitoring of Gonbad-e Qābus Tomb Tower building	2010	M. Ebrahimian	GCHHTO
	42	Digital	Monitoring of Gonbad-e Qābus Tomb Tower building	1937	GCHHTO	GCHHTO
	43	Digital	Monitoring of Gonbad-e Qābus Tomb Tower building	2010	M. Ebrahimian	GCHHTO
	44	Digital	Monitoring of Gonbad-e Qābus Tomb Tower building	1914	GCHHTO	GCHHTO
	45	Digital	Monitoring of Gonbad-e Qābus Tomb Tower building	2010	M. Ebrahimian	GCHHTO
	46	Digital	Monitoring of Gonbad-e Qābus Tomb Tower building	1914	GCHHTO	GCHHTO
	47	Digital	Monitoring of Gonbad-e Qābus Tomb Tower building	2010	M. Ebrahimian	GCHHTO
	48	Digital	Monitoring of Gonbad-e Qābus Tomb Tower building	1914	GCHHTO	GCHHTO
	49	Digital	Monitoring of Gonbad-e Qābus Tomb Tower building	2010	M. Ebrahimian	GCHHTO
	50	Digital	Monitoring of Gonbad-e Qābus Tomb Tower building	1914	GCHHTO	GCHHTO
	51	Digital	Monitoring of Gonbad-e Qābus Tomb Tower building	2010	M. Ebrahimian	GCHHTO
	52	Digital	Monitoring of Gonbad-e Qābus Tomb Tower building	2000	GCHHTO	GCHHTO
	53	Digital	Monitoring of Gonbad-e Qābus Tomb Tower building	2010	M. Ebrahimian	GCHHTO
	54	Digital	Monitoring of Gonbad-e Qābus Tomb Tower building	1970	GCHHTO	GCHHTO
	55	Digital	Monitoring of Gonbad-e Qābus Tomb Tower building	2010	M. Ebrahimian	GCHHTO
	56	Digital	Monitoring of Gonbad-e Qābus Tomb Tower building	1944	GCHHTO	GCHHTO
	57	Digital	Monitoring of Gonbad-e Qābus Tomb Tower building	2010	M. Ebrahimian	GCHHTO
	58	Digital	Monitoring of Gonbad-e Qābus Tomb Tower building	2010	M. Ebrahimian	GCHHTO
59	Digital	Monitoring of Gonbad-e Qābus Tomb Tower building	1984	GCHHTO	GCHHTO	
60	Digital	Monitoring of Gonbad-e Qābus Tomb Tower building	2010	GCHHTO (M.Pudineh)	GCHHTO	
61	Digital	Monitoring of Gonbad-e Qābus Tomb Tower building	1995	GCHHTO	GCHHTO	
62	Digital	Monitoring of Gonbad-e Qābus Tomb Tower building	2010	M. Ebrahimian	GCHHTO	
63	Digital	Monitoring of Gonbad-e Qābus Tomb Tower building	1940	GCHHTO	GCHHTO	
64	Digital	Monitoring of Gonbad-e Qābus Tomb Tower building	2010	M. Ebrahimian	GCHHTO	

Plate No.	Format	Caption	Date of Photo/ man	Photographer	Source	
104	Digital	Monitoring of Cultural Rvents	2007	GCHHTO	GCHHTO	
105	Digital	Monitoring of Cultural Rvents	2010	GCHHTO	GCHHTO	
106	Digital	Monitoring of Cultural Rvents	2009	GCHHTO	GCHHTO	
107	Digital	Monitoring of Cultural Rvents	2008	GCHHTO	GCHHTO	
108	Digital	Monitoring of Cultural Rvents	2008	GCHHTO	GCHHTO	
109	Digital	Monitoring of Cultural Rvents	2008	GCHHTO	GCHHTO	
110	Digital	Monitoring of Cultural Rvents	2007	GCHHTO	GCHHTO	
111	Digital	Monitoring of Cultural Rvents	2007	GCHHTO	GCHHTO	
112	Digital	Monitoring of Cultural Rvents	2006	GCHHTO	GCHHTO	
6	113	Digital	Monitoring of Cultural Rvents	2006	GCHHTO	GCHHTO
114	Digital	Monitoring of Cultural Rvents	2007	GCHHTO	GCHHTO	
115	Digital	Monitoring of Cultural Rvents	2007	GCHHTO	GCHHTO	
116	Digital	Monitoring of Cultural Rvents	2007	GCHHTO	GCHHTO	
117	Digital	Monitoring of Cultural Rvents	2007	GCHHTO	GCHHTO	
118	Digital	Monitoring of Cultural Rvents	2008	GCHHTO	GCHHTO	
119	Digital	Monitoring of Cultural Rvents	2008	GCHHTO	GCHHTO	
120	Digital	Monitoring of Cultural Rvents	2008	GCHHTO	GCHHTO	
121	Digital	Monitoring of Cultural Rvents	2008	GCHHTO	GCHHTO	
122	Digital	Monitoring of Cultural Rvents	2008	GCHHTO	GCHHTO	
123	Digital	Monitoring of Cultural Rvents	2008	GCHHTO	GCHHTO	
124	Digital	Monitoring of Cultural Rvents	2008	GCHHTO	GCHHTO	
125	Digital	Monitoring of Cultural Rvents	2008	GCHHTO	GCHHTO	
126	Digital	Monitoring of Cultural Rvents	2008	GCHHTO	GCHHTO	
6	127	Digital	Monitoring of Cultural Tourism	2007	GCHHTO	GCHHTO
128	Digital	Monitoring of Cultural Tourism	2007	GCHHTO	GCHHTO	
129	Digital	Monitoring of Cultural Tourism	2007	GCHHTO	GCHHTO	
130	Digital	Monitoring of Cultural Tourism	2010	GCHHTO	GCHHTO	
131	Digital	Monitoring of Cultural Tourism	2009	GCHHTO	GCHHTO	
132	Digital	Monitoring of Cultural Tourism	2010	GCHHTO	GCHHTO	
133	Digital	Monitoring of Cultural Tourism	2010	GCHHTO	GCHHTO	
134	Digital	Monitoring of Cultural Tourism	2010	GCHHTO	GCHHTO	
135	Digital	Monitoring of Cultural Tourism	2010	GCHHTO	GCHHTO	
136	Digital	Monitoring of Cultural Tourism	2010	GCHHTO	GCHHTO	

- *GCHHTO: Golestan Cultural Heritage, Handicrafts and Tourism Organization
- **ICHHTO: Iranian Cultural Heritage, Handicrafts and Tourism Organization
- ***MCHHTO: Mazandaran Cultural Heritage, Handicrafts and Tourism Organization
- ****KhCHHTO: Khorasan Cultural Heritage, Handicrafts and Tourism Organization
- *****ACHHTO: Ardabil Cultural Heritage, Handicrafts and Tourism Organization
- *****SCHHTO: Semnan Cultural Heritage, Handicrafts and Tourism Organization

7.b. Texts relating to protective designation, copies of property management plans or documented management systems and extracts of other plans relevant to the property.

The texts and contents of the Management Plan and protective designation of the property as indicated in the Management chapter are as follow:

The protection of all historical monuments of Iran is ensured by ICHHTO. By the Law of Conservation of National Monuments approved on November the 3rd 1930, all the monuments registered in the National Heritage List are under the State's protection and supervision. Additionally, a number of other protection laws, such as the Law of Foundation of National Council of the City Constructing and Architecture, the Law of City Constructing and Architecture, the Law of City Properties approved in September the 12th, 1982, Law of Purchase of properties, buildings and archaeological monuments as well as some chapters of the Law of City Halls force the State or the private administrations to respect registered monuments on the National Heritage List.

Some preventive laws have also been approved to guarantee the physical maintenance of National Monuments of Iran, and to preserve their cultural-historical values. Among these laws, one may mention a parliamentary record prohibiting illegal excavations (in force since 27-05-1979), clauses of the Law of Islamic Punishments or the chapter 127 of the Annex to the General Punishment Law in Iran. The other significant measure is the act concerning the election and duties of the councils of religious and endowed places, approved on 29-04-1986.

The legal implementation of these measures is ensured by Clause 2 of the Decree of the National Security Council concerning the protection of cultural properties, and also Clause 'C' of Article 166 of the Ministry of Interior concerning directly the protection of ancient remains within the modern settlements.

The legal designation of the protective boundaries of the site is as follows:

The legal designation of the protective boundaries within the Gonbad-e Qābus Tomb Tower in Gonbad-e Kāvus is as follows:

Core Zone Regulations

- 1- Any activities leading to the destruction of the historical core zone of the monument is forbidden
- 2- Any operations resulting in damage to the foundation of the monument is strictly prohibited.
- 3- Any intervention or development activity such as: restoration and reorganization of the site shall be valid and effective only after being planned and approved by ICHHTO
- 4- ICHHTO has a monopoly on all the archaeological researches and excavations in the core zone of the monument.

Buffer Zone Regulations:

First area (Zone 1):

- 1- Any operations resulting in damage to the foundation of the monument and/or harming its landscape such as: excavating, moving earth, earth filling and leveling, developing, digging water wells or sewage... is strictly prohibited.
- 2- Any intervention or development activity such as: restoration, revitalization, reorganization of the site or the garden, lighting, designing and implementing green space within the zone I of the monument shall be valid and effective only after being planned and approved by ICHHTO
- 3- ICHHTO has a monopoly on all the archaeological researches and excavations in the zone I of the monument
- 4- All the structures existing within the zone I of the monument shall be removed to open up the space.

Second area (Zone 2):

- 1- Any activities within the zone II harming the base of the core zone is prohibited such as: the construction of any kind of water canals, digging sewage or water wells, installation of vibrating, noisy and smoking machinery as well as directing surface waters toward the core zone of the monument.
- 2- Wall facades of streets near the Tower shall be restored with traditional materials homogenous with the monument according to ICHHTO measures
- 3- Construction of buildings in two floors up to a height of 7.5m within this area is permitted
- 4- Any kinds of construction permits and the end of work certificate for construction charts as well as development designs shall be approved by ICHHTO

- 5- the façade of buildings and architectural designs must be in harmony with the historical core zone of the monument as well as the original and indigenous architecture of the region
- 6- Traffic of heavy motor vehicles within *Emam Khomeini*, *Jomhuri* and *Mellat* Streets is strictly forbidden

Regulations in Landscape Zone:

Any large scale intervention such as construction of high rise buildings or urban facilities having a negative influence on the Tower landscape is prohibited.

Management Plan of Gonbad-e Qābus:

Short-term schedule:

- To complete signboards and presentation facilities
- To hold exhibitions in order to present the outstanding universal values of the monument.
- Reorganizing and equipping the office for the experts in buffer zone.
- Improving the conditions of toilets facilities aimed at providing more comfort to the visitors with due regard to the outstanding universal value of the monument.
- Regular monitoring of the affecting factors.
- Continuation of the monitoring and starting investigations for the purpose of removing moisture from inside space of the monument.
- Installing signboards within the buffer zone of the monument for improving orientation ability of the tourists.
- Reorganizing shop fronts located in the buffer zone.
- Informing buffer zone residents about the relevant protection and conservation measures by printing and circulating informative brochures as well as to hold briefing meetings and consulting sessions with local residents and shop owners.
- Printing brochures and various other cultural productions for the purpose of informing buffer zone residents about the outstanding universal values of the monument as well as the role it plays about the collective identity of this group of people
- Improving the condition of the façade of the Tower and the floor of inside and outside of it.
- Studying the options available for a more successful negotiation with all interested groups in the conservation of the monument.

- Cooperation with Golestan ICHHTO for the purpose of the publication of research and scientific findings in the framework of books, brochures and other cultural productions aimed at informing residents within the buffer zone about the outstanding universal values of the monument and the role it plays regarding the collective identity of this group
- Installing a signboard to introduce and present artistic and scientific values of the structures and inscriptions in different sections of the monument.
- Providing brochures presenting the monument in Farsi and English languages

Mid-term schedule:

- Introducing architectural values of the the monument with the help of the audio tour as well as signboards for example regarding:
 - Describing of the creation theories of the monument.
 - Describing the historical methods in construction of the monument.
 - Introducing the brick chronograph index and how it works.
 - Presenting the structure details of the monument particular with the help of signboards.
- Continuation of precise documentation of tower inscriptions and decorations existing in different sections of the tower by various techniques.
- Putting into operation the standard lighting project of the monument for the purpose of a better representation of its artistic, scientific and aesthetic values.
- Equipping and completing the archaeological team as well as continuing scientific excavations and investigations using techniques with less risk such as: geophysics
- Consulting buffer zone residents by oral surveys and questionnaire distribution on various ways to reduce the number of cases of violating conservation measures of the buffer zone.
- Providing a data base usable for different audiences but at the same time restricting data access for each group
- Improving touristic facilities such as:

Installing tourist sign boards right across Gonbad-e Kāvus city with the partnership of Gonbad-e Kāvus Municipality.

Long-term schedule:

- Equipping the monitoring team with instruments measuring vibrations, moisture and air pollution
- Reorganizing of a special library and research centre at the buffer zone I aimed at research works and introducing of the Tomb Tower monuments in Alborz Mountains.
- Reorganization of the park, streets and passageways around the monument.
- Reorganization of the streets facades around the monument.

7.c. Form and date of most recent records or inventory of property

Survey of Gonbad-e Qābus

- Clearing up and reorganizing of the hill area of Gonbad-e Qābus t and removing hill grass, 2006
- Conducting minor restorations works, 2010
- Reviewing the core zone and buffer zone maps and regulations, 2005
- Correcting the core zone and buffer zone maps and regulations, 2010
- Determining the landscape zone, 2010
- Regular supervision and maintenance activities, 2010
- Continuing cooperation with the university students, tourists, interested people and NGOs concerning the improvement of the culture of conservation and protection of Gonbad-e Qābus at a local and regional scale, 2009
- Updating the web page about Gonbad-e Qābus in web address: *www.paigaha.Ir*, 2009
- Cooperation in holding of the Archaeology and Restoration Seminar on behalf of *Golestan* Higher Education Institute concerning Gonbad-e Qābus with particular attention to the monument as one of the Seminar program with the view of reaching the conservation and restoration objectives, 2009
- Survey of Gonbad-e Qābus , 2008
- Laser scanning and Photogrammetry works on the Tower, 2008.
- The reports of the presentation programs on Gonbad-e Qābus , 2008
- Preparing the archaeological reports, 2007
- Preparing the study and restoration plan for the Conical Roof, 2008
- Performing the soundings phase for soil mechanics studies on the hill , 2008
- Conducting supplementary works on the lightings, 2008
- Restoration works within the Tower's interior with the purpose of stabilizing its floor and wall bricks, 2008
- Flooring of all the walkways around the site, 2008

- Pursuing a legal case and succeeding in it, concerning Qābus Commercial Complex. Attempts were also made to improve interaction with Gonbad- e Kāvus Municipality as well as holding regular meetings for this major aim with the participation of city authorities and ICHHTO representatives, 2007
- Completion of the erection of the scaffoldings, construction of the stairway and the safety measures, 2006
- Equipping of the restoration workshop and eliminating the immediate dangers, 2006
- Illumination of the tower and the hill area, 2006
- Conducting conservation and restorations works as well as risk elimination for the tower during the second half of 1385 SAH i.e.: clearing of grass and lichens, removing grass seeds, fixing of the bricks, bricks pointing, consolidation of mortars behind the bricks, spraying insecticides, cleaning of the inscriptions from droppings and grime, washing, 2006
- Taking samples from the building materials (bricks and mortars) for analytical examinations, 2005
- Erecting scaffoldings, 2005

7.d. Address where inventory, records and archives are held

- Office of the Golestan Cultural Heritage, Handicrafts and Tourism Organization
15th Aftab St., Emam Khomeini St., Golestan Province, Iran

Tel: (+98)1712244350

T^{el}efax: (+98)171-2227230

- Gonbad-e Qābus Base

Base of Historical Jorjan city and Gonbad-e Kāvus 2th Floor, Gonbad-e Kāvus Cultural Heritage, Handicrafts and Tourism Organization office, Azadegan Sq., Gonbad-e Kāvus City, Golestan Province, Iran

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9

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Deputy for Cultural Heritage, of ICHHTO

Acknowledgment

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- Mr.Gholam A. Sosaraei the Governor of Gonbad-e Kāvus.
- Mr.Abdullah Rastegar the Gonbad-e Kāvus representative in Islamic Parliament.
- Mr.Seyyed Mansor Bagheri the Mayor of Gonbad-e Kāvus.

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10

Appendix 1

Report on the Archaeological
Soundings at Gonbad-e Qābus Mound

Report on the Archaeological Soundings at Gonbad-e Qābus Mound

Gonbad-e Qābus Mound: Gonbad-e Qābus was founded and constructed by *Abol-Hassan Qābus Ibn Voshmgir bin Ziar*, also known as *Shams-ol Ma'ali*, one of the *Ziyarids* Emir (976- 1012 AD). It was constructed in 1006 AD, 3 kilometers from the southwest of the ancient town of Gorgan on top of a hill measuring 105m north-south and 120m east-west, with an elevation of 10 meters. The Gonbad-e Qābus Tomb Tower is built at the end of the northeast side of the hill. Pictorial records from the *Qajar* period show that the Russians had built a number of structures including a barrack, a pump house, and a church on top of the hill. A square-shaped fortress with four turrets had also been added to the ensemble during the last years of the Qajars' rule, but Schmidt's aerial photos taken from the top of Gonbad-e Qābus Tomb tower show none of these features. A cement pool, a water pump, and some flower beds were added during the reign of Pahlavi II, but were later removed. ICHTTO (Iranian Cultural Heritage, Handicrafts and Tourism Organization) has also built a canal around the tower in order to drain the moisture, brick pavements with cement mortar across the hill, a pathway, and a chamber in the west side of the hill.

In order to examine the condition of the foundations of Gonbad-e Qābus and the sequence of stratigraphy of the mound, a team of experts under the supervision of Hamid Omrani Rakavandi, with the permission number 882/208/931, dated July 19, 2009 worked at the site and dug 8 trenches across the hill from July 23 to August 22, 2009. Four Trenches were dug along the slope, 2 at the hill foot, and 3 on top of the hill (the trench of C.V in 1.5 ×2m to study the foundation of Gonbad-e Qābus adjacent to the entrance, and D.V stratigraphic trench of 2×2m at the center of the hill).

Trench C.V:

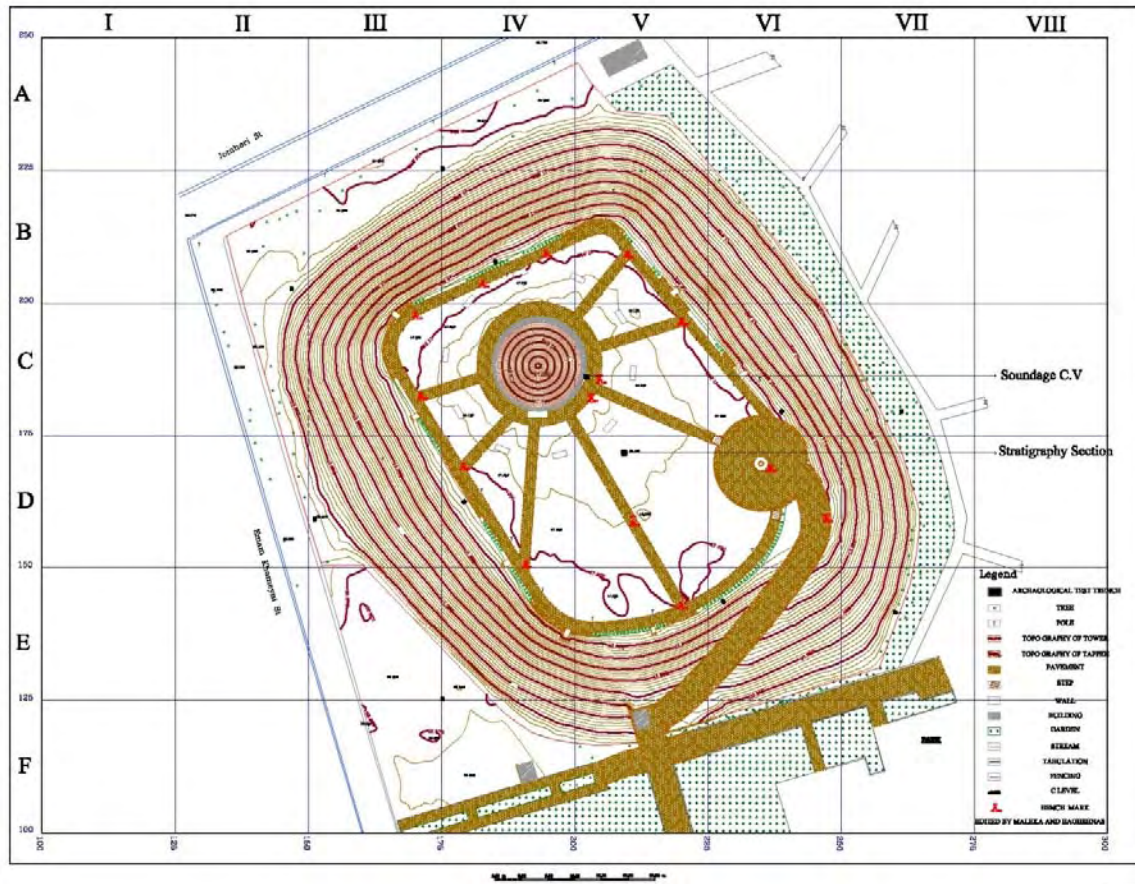


Figure 1-Location of Archaeological Test Trench topography of Gonbad-e Qābus

This trench was dug to the depth of 11.5 meters of the hill aiming at studying the architectural structure of the foundations of Gonbad-e Qābus. The remains of the foundations went as deep as 9.8 meters before they reached the hardpan. From the depth of 2 meters up, the mud bricks were plastered with mortar of 4-7cm thick. 30 centimeters of the mortar was removed to study the arrangement of the bricks. The first row of bricks was laid on clay, and the distance between the bricks where the mortar was placed is 1.3 to 2.4cm. The 3rd row of the brick foundation has a projection of 6cm as compared to the first two rows. Then, the 4th row is projected by 1cm, the 5th by 1.5cm, the 6th by 1cm, the 7th by 1cm, the 8th by 1cm, the 9th by 1.5cm, and the 10th by 1cm; the 11th row has a depression of 3.5cm, forming the 11-centimeter projection of the 12th row. The height of the first two rows comes to 14.5cm including the distance between the bricks, and that of

rows 3 to 12 is 77cm. This whole arrangement seems to have been meant to further consolidate and stabilize the tower.

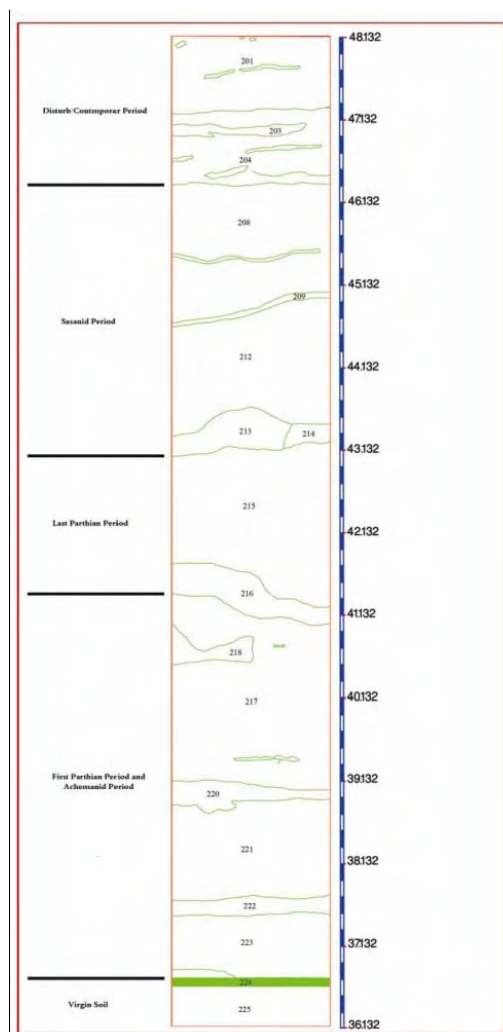


Figure 2 Archaeological Test Trench

Figure 3- Stratigraphy Section D.V. of Gonbad-e Qābus Mound

Trench DV:

The following is the GPS coordinates of this trench from the northwest corner clockwise:

1. N:33°76'37" E:41°25'05.5"
2. N:33°76'39" E:41°25'05.4"
3. N:33°76'38" E:41°25'05.5"
4. N:33°76'38" E:41°25'05.3"

Layer 1 includes features 201-207, and is 180cm thick.

Feature 201: Debris soil of light brown, porous texture, 3% impurities including earthenware shards, bone remains, brick pieces, rubble stones, and 2-Rial coin dated 1986.

Feature 2: A vein inside feature 201, bright brown, partly soft texture, 1% impurities including earthenware shards and brick pieces

Feature 203: Underneath feature 201, humus of dark brown, soft texture, 1% impurities including brick pieces, earthenware shards, remains of animal bones

Feature 204: Light brown soil, firm texture, 5% impurities including brick of 6×26×26cm, similar to those of the tower, rubble stone, brick pieces, stone muller, earthenware shards, and remains of bone

Features 205-207: Similar to the feature 202

Layer 2 includes features 208-216.

Feature 208: Soil of light brown, partly firm texture, average moisture content, remains of plant roots, 3% impurities including earthenware shards, brick pieces, and mud brick of 10cm thick

Feature 208a: A vein of dark gray, very fine-grained and soft texture, average moisture content, 20% of impurities including remains of coal and ash

Feature 209: Light gray soil, partly firm texture, average moisture content, 3% impurities including bone remains, earthenware shards (of which some are pieces of a gray container from the Achaemenids period)

Feature 210: Remains of a fireplace of 32×40cm, with 2 pieces of stone and two pieces of brick measuring 10×22×30 and 10×16×40cm near them

Feature 211: Inside of the fireplace and 30% of impurities including the remains of ash and coal with remains of a whole kitchen container inside (20205) and animal bone remains (20206)

Feature 212: Light brown soil of partly soft texture, with high moisture content and 15% of impurities including glass shards (20216), slag (20217), earthenware shards, brick pieces of 10cm thick, shells, stone muller, bone remnants, baked clay, metal remains

Feature 213: Light brown soil, soft texture, high moisture content, 5% of impurities including earthenware shards and bone remains

Feature 214: Remains of an architectural structure (*chineh*) measuring 31×60cm, whose extension is along the northern wall of the trench. It is of light yellow soil, high moisture content, 6% of impurities in chamotte (grog) including shredded straw, remains of coals, ash, and earthenware shards; this feature has been cut by feature 213.

Layer 3 includes features 215-216.

Feature 215: light gray soil, partly soft texture, with 2% of impurities including earthenware shards, clay spindle, baked clay, remains of animal bones

Feature 216: Light gray soil with firm texture and 2% of impurities including earthenware shards and bone remains

Layer 4 includes features 217-223.

Feature 217: Light brown soil, partly firm texture, with 10% of impurities including earthenware shards, clay disk, remains of animal bones, and baked clay

Feature 218: Light gray soil, soft texture, cutting feature 217, with 10% of impurities including earthenware shards and bone remains

Feature 219: Vein of bright yellow with soft texture, cutting feature 217, bare of cultural features

Feature 220: Light gray soil with soft and crumbly texture, with 5% of impurities including remains of ash, coal, earthenware shards and bones

Feature 221: Light gray soil, soft texture, with 7% impurities including a complete container, pieces from a jar and small clay containers, baked clay, and bone remains

Feature 222: Alluvial light yellow soil, bare of cultural features

Feature 223: Bright brown soil of soft texture, high moisture content, with 5% of impurities including earthenware shards and bone remains

Layer 5 is the hardpan and includes features 224 and 225.

Feature 224: A vein of bright gray cutting feature 224, bare of cultural features

Feature 225: Bright gray soil with extremely high moisture content, washed soil, bare of cultural features

Conclusion:

The stratigraphic trench of DV in Gonbad-e Qābus hill may strongly invalidate the long-presumed hypothesis of many researchers and scholars and show that the mound is historic, and includes archeological layers from various historical periods. The layers discovered from these trenches include the following cultural features:

The first layer of 180cm thick bears cultural remains including red, gray, and rough brown earthenware, brick shards from the Islamic period, and contemporary trash. As it is inferred from the evidence and the interventions made, this layer is disturbed.

The second layer: Being 310cm thick, this layer mainly includes red and reddish brown clay shards, which are similar to the Sassanids earthenware found from the Great Wall of Gorgan as for the shapes and the chamotte used in them. There are also remains of a fireplace and a rough brown clay container in this layer.

The third layer: This layer of 210cm thick has in it shards of gray, red, beige, and rough brown earthenware; they represent characteristics of the Parthian – Sassanid periods. The layer can be referred to as the transit from the Parthian to the Sassanid period.

The fourth layer: In this layer, there are significant types of well-known clinker earthenware together with shards of gray, rough brown, and red clay, which are closely similar to those found at Qezel Oynaq site and Nargess Tepe in Gorgan, dating back to the late Iron Age III and early Iron Age IV.

The fifth layer: This layer is in fact the hardpan which reaches subterranean canal, and is bare of cultural features.

Trench CV dug at the entrance of tower to the depth of 11.5 meters from the hill level uncovered 9.8 meters of the foundation of Gonbad-e Qābus in a cylindrical form, and showed that the lowermost rows of the foundation are laid on hardpan, and are bare of archaeological data¹.

¹ Hamid Omrani Rakavandi and Ghorban Ali Abbasi, the ICHTTO office of Golestan Province, November 2010

Plate No.	Format	Caption	Date of Photo	Photographer/ Director of the Video	Copyright Owner	Contact Details of Copyright Owner	Non exclusive cession of rights
1	Digital	Location of Gonbad-e Qābus	2010	www.google earth.com	www.google earth.com	www.google earth.com	
2	Digital	Location of Gonbad-e Qābus	2010	www.google earth.com	www.google earth.com	www.google earth.com	
3	Digital	General view of Gonbad-e Qābus - view from Emam Khomaini St.	2010	Marzie Ebrahimiyan	GCHHTO	GCHHTO*	Yes
4	Digital	General view of Gonbad-e Qābus - view from Emam Khomaini St.	2010	Marzie Ebrahimiyan	GCHHTO	GCHHTO	Yes
5	Digital	General view of Gonbad-e Qābus - view from South of the hill	2010	GCHHTO	GCHHTO	GCHHTO	Yes
6	Digital	General view of Gonbad-e Qābus - view from Southwest of hill	2010	Marzie Ebrahimiyan	GCHHTO	GCHHTO	Yes
7	Digital	General view of Gonbad-e Qābus	2010	Marzie Ebrahimiyan	GCHHTO	GCHHTO	Yes
8	Digital	General view of Gonbad-e Qābus	2010	Marzie Ebrahimiyan	GCHHTO	GCHHTO	Yes
9	Digital	General view of Gonbad-e Qābus	2010	Marzie Ebrahimiyan	GCHHTO	GCHHTO	Yes
10	Digital	Conical Roof, window	2010	Marzie Ebrahimiyan	GCHHTO	GCHHTO	Yes
11	Digital	General view of Gonbad-e Qābus - view from	2010	Marzie Ebrahimiyan	GCHHTO	GCHHTO	Yes
12	Digital	Conical Roof, window & upper Inscription	2010	Marzie Ebrahimiyan	GCHHTO	GCHHTO	Yes
13	Digital		2010	Marzie Ebrahimiyan	GCHHTO	GCHHTO	Yes
14	Digital	General view of Gonbad-e Qābus	2010	Elham shojaei	GCHHTO	GCHHTO	Yes
15	Digital	Entrance	2010	Elham shojaei	GCHHTO	GCHHTO	Yes
16	Digital	Entrance & lower Inscription	2010	Elham shojaei	GCHHTO	GCHHTO	Yes
17	Digital	General view of Gonbad-e Qābus - view from	2010	GCHHTO	GCHHTO	GCHHTO	Yes
18	Digital	General view of Gonbad-e Qābus	2010	GCHHTO	GCHHTO	GCHHTO	Yes
19	Digital	General view of Gonbad-e Qābus	2010	Elham shojaei	GCHHTO	GCHHTO	Yes
20	Digital	One of the ten flanges	2010	Marzie Ebrahimiyan	GCHHTO	GCHHTO	Yes
21	Digital	Another view of the same flange	2010	GCHHTO	GCHHTO	GCHHTO	Yes
22	Digital	Entrance, moqarnass work and the lower inscription	2010	GCHHTO	GCHHTO	GCHHTO	Yes
23	Digital	Upper part of	2010	GCHHTO	GCHHTO	GCHHTO	Yes

Plate No.	Format	Caption	Date of Photo	GCHHTO	GCHHTO	Contact Details of Copyright Owner	Non exclusive cession of rights
24	Digital	Conical roof	2010	GCHHTO	GCHHTO	GCHHTO	Yes
25	Digital	A view to the tower	2010	GCHHTO	GCHHTO	GCHHTO	Yes
26	Digital	Cultural activities within the site	2010	GCHHTO	GCHHTO	GCHHTO	Yes
27	Digital	Illumination of Gonbad-e Qabus	2009	Marzie Ebrahimiyan	GCHHTO	GCHHTO	Yes
28	Digital	Illumination of Gonbad-e Qabus	2009	Marzie Ebrahimiyan	GCHHTO	GCHHTO	Yes
29	Digital	Entrance from inside	2010	Elham shojaei	GCHHTO	GCHHTO	Yes
30	Digital	Inside (Floor)	2008	Elham shojaei	GCHHTO	GCHHTO	Yes
31	Digital	Eastern panoramic view	2010	Elham shojaei	GCHHTO	GCHHTO	Yes
32	Digital	Eastern panoramic view	2010	Elham shojaei	GCHHTO	GCHHTO	Yes
33	Digital	North western panoramic view	2010	Elham shojaei	GCHHTO	GCHHTO	Yes
34	Digital	North Eastern panoramic view	2010	Elham shojaei	GCHHTO	GCHHTO	Yes
35	Digital	Sothern panoramic view	2010	Elham shojaei	GCHHTO	GCHHTO	Yes
36	Digital	Main area in front of the tower	2010	Elham shojaei	GCHHTO	GCHHTO	Yes
37	Digital	North western view	2010	Elham shojaei	GCHHTO	GCHHTO	Yes
38	Digital	North western view	2010	Elham shojaei	GCHHTO	GCHHTO	Yes

*- GCHHTO: Golestan Cultural Heritage, Handicrafts and Tourism Organization.



1 Location of Gonbad-e Qābus



2 Location of Gonbad-e Qābus



3 General view of Gonbad-e Qābus -view from Emam Khomainsi St.



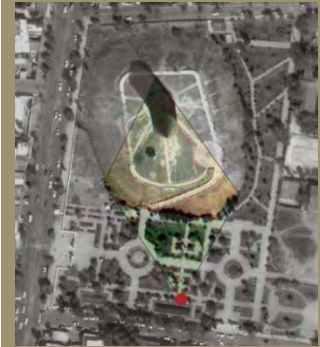
4 General view of Gonbad-e Qābus -view from Emam Khomainsi St.





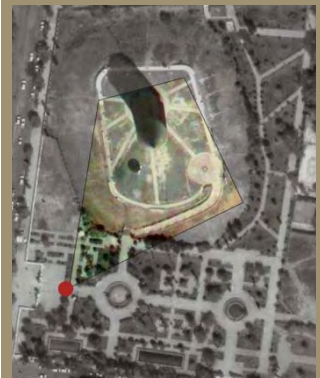
5

General view of Gonbad-e Qābus -view from South of the hill



6

General view of Gonbad-e Qābus -Southwest of the Hill





7

General view of Gonbad-e Qābus



8

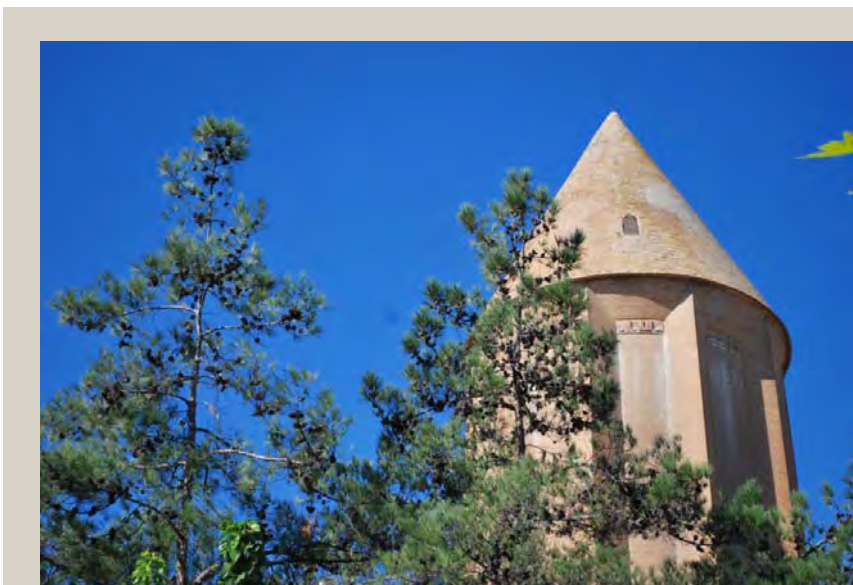
General view of Gonbad-e Qābus





9

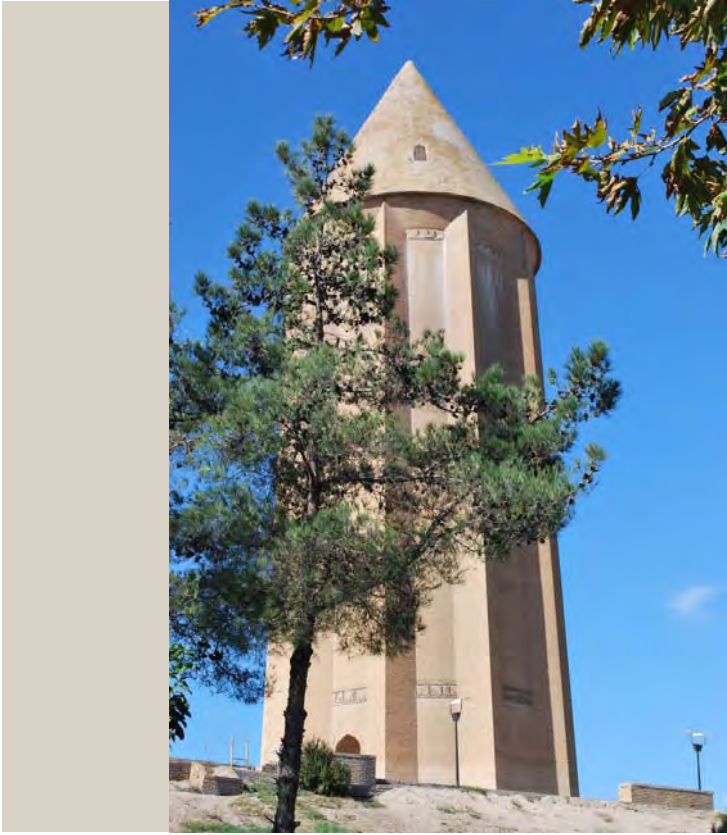
General view of Gonbad-e Qābus



10

Conical Roof , the window (opening)





11 General view of Gonbad-e Qābus

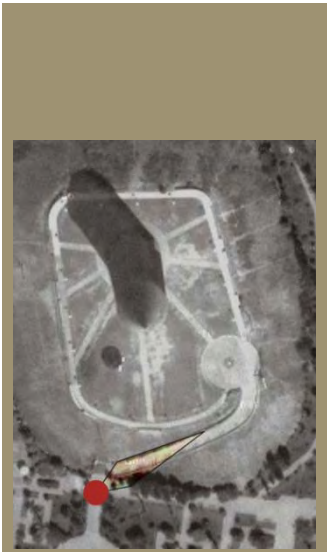


12 Conical Roof, window & upper Inscription





13 Passage way to the site



14 General view of Gonbad-e Qābus

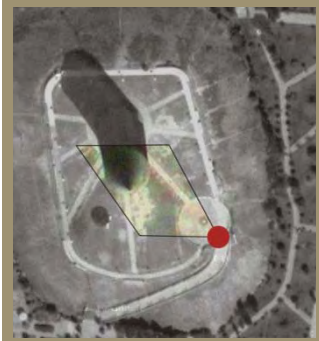




15 Entrance

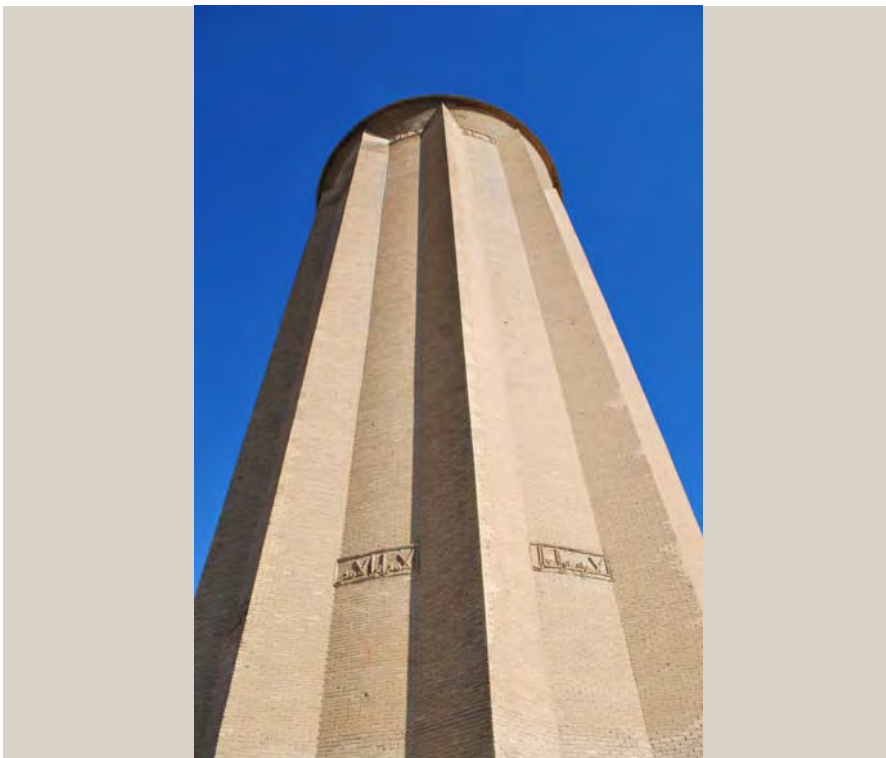
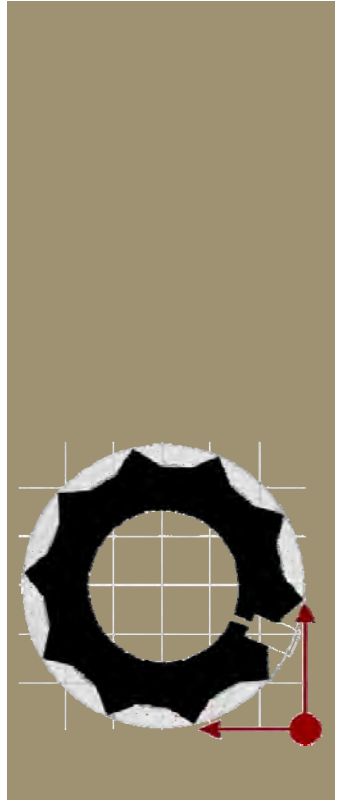


16 Entrance & lower inscription

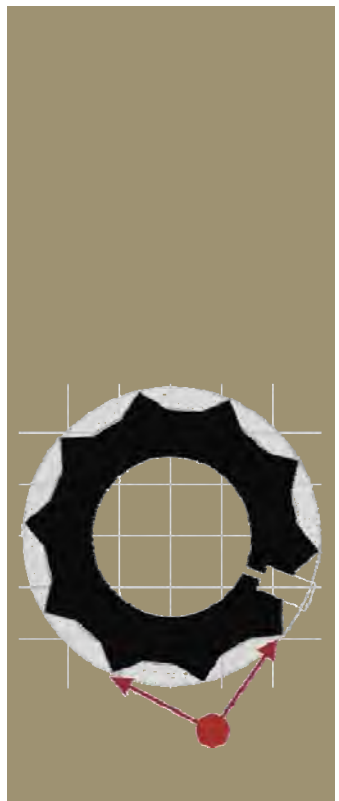




17 General view of Gonbad-e Qābus



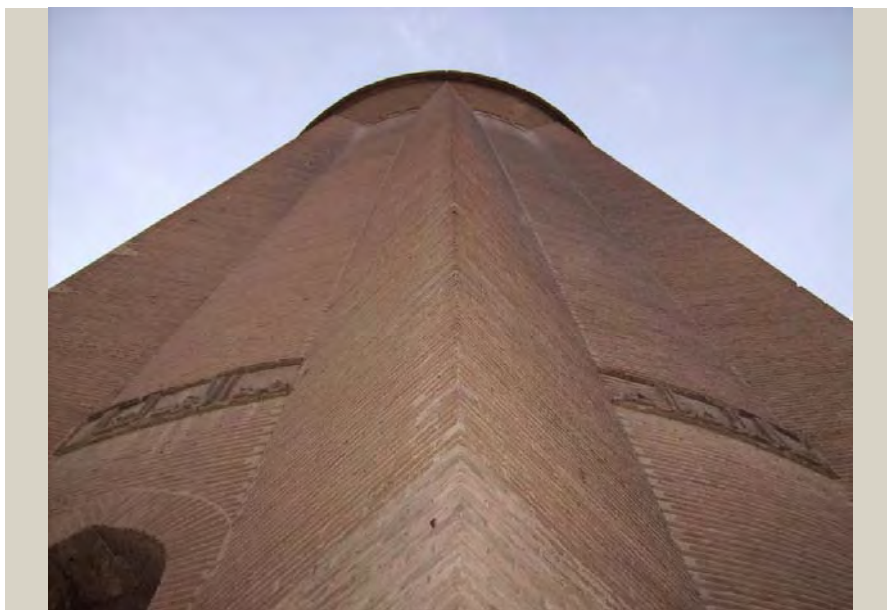
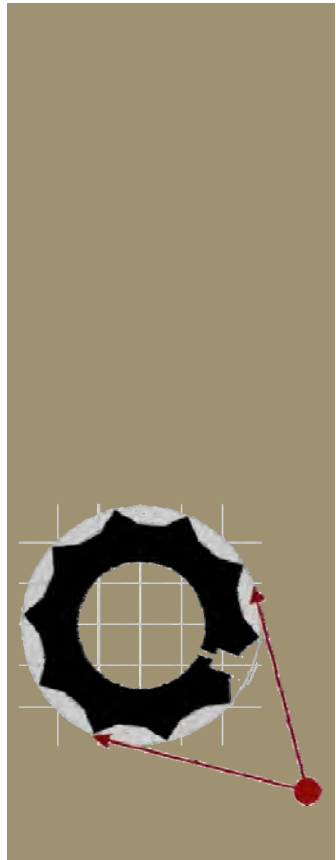
18 General view of Gonbad-e Qābus





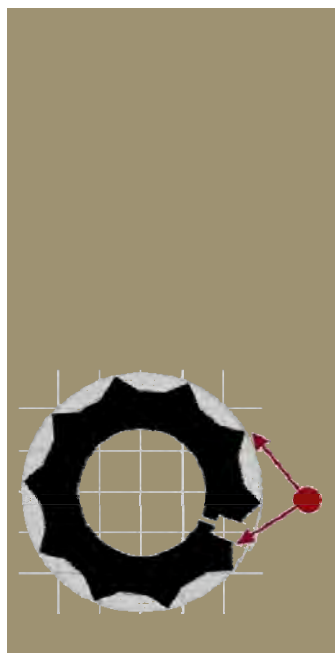
19

General view of Gonbad-e Qābus



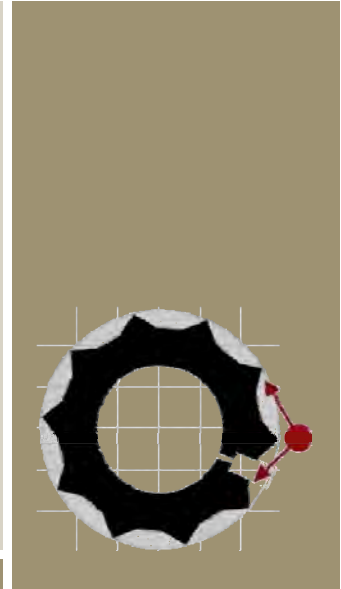
20

One of the ten flanges

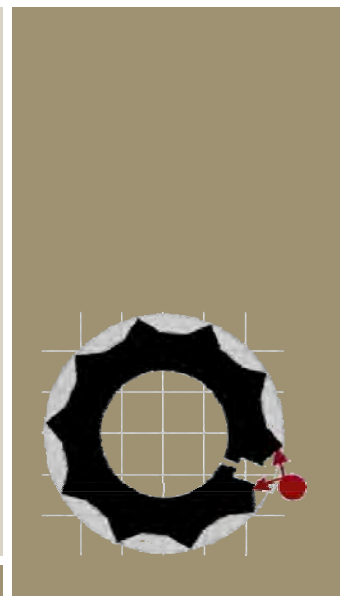




21 Another view of the same flange



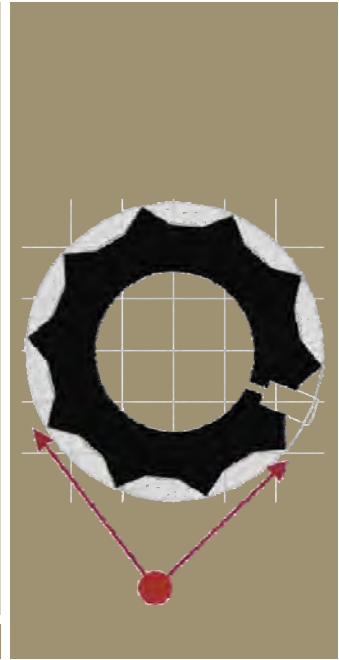
22 Entrance, moqarnas work and the lower inscription





23

Upper part of



24

Conical Roof





25 A view to the tower



26 Cultural activities within the site





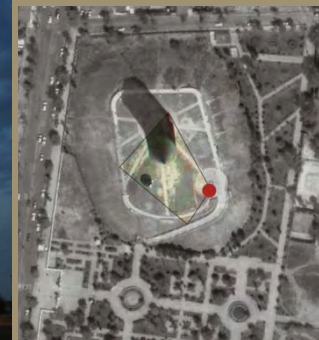
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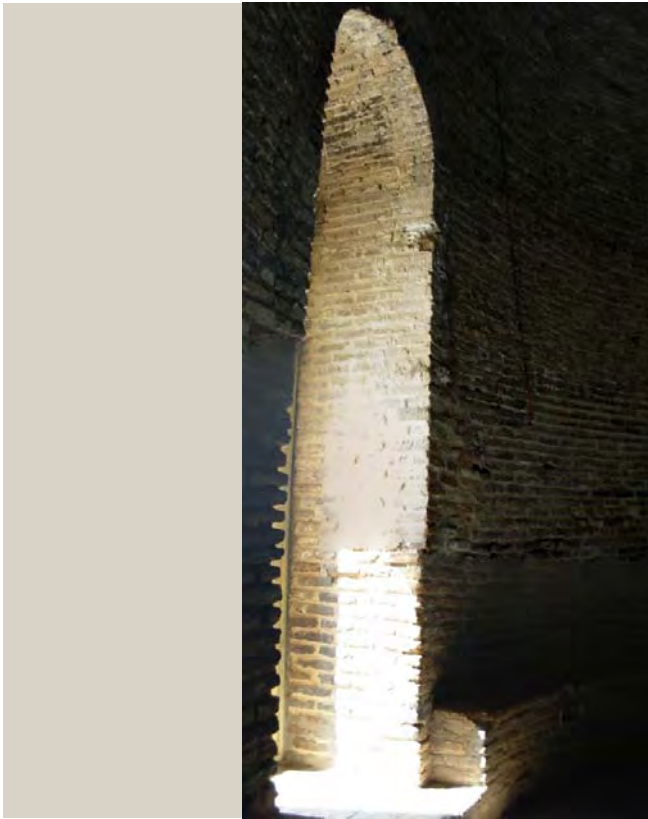
Illumination of Gonbad-e Qabus



28

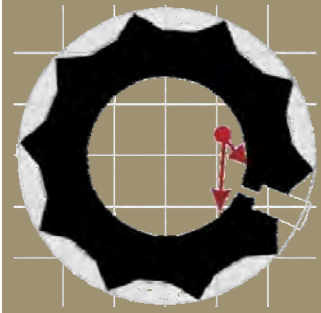
Illumination of Gonbad-e Qabus





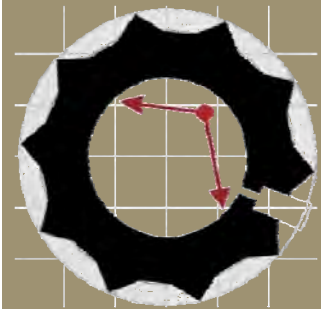
29

Entrance from inside



30

Inside (Floor)





31 Eastern panoramic view



32 Eastern panoramic view





33 North western panoramic view



34 North Eastern panoramic view





C

35 Sothern panoramic view



C



36 Main area in front of the tower





37 North western view



38 North western view



ICOMOS

INTERNATIONAL COUNCIL ON MONUMENTS AND SITES
CONSEIL INTERNATIONAL DES MONUMENTS ET DES SITES
CONSEJO INTERNACIONAL DE MONUMENTOS Y SITIOS
МЕЖДУНАРОДНЫЙ СОВЕТ ПО ВОПРОСАМ ПАМЯТНИКОВ И ДОСТОПРИМЕЧАТЕЛЬНЫХ МЕСТ

H. E. Mr. Mohammad Réza Majidi
Ambassador
Permanent Delegation of the Islamic
Republic of Iran to UNESCO
Maison de l'UNESCO
1, rue Miollis
75732 PARIS Cédex 15

Our Ref. GB/MA 1397

Paris, 9 December 2011

World Heritage List: Gonbad-e Qābus (Iran) – additional information

Dear Sir,

ICOMOS is currently assessing the nomination of 'Gonbad-e Qābus' (Iran) for World Heritage listing and we thank you for the additional information we received on 25 October 2011.

As part of our evaluation process, the ICOMOS World Heritage Panel has now reviewed this nomination.

In order to complete our assessment of the nomination we now ask the State Party to consider adjustment of that part of the buffer zone west boundary which passes through buildings instead of streets.

We look forward to your responses to this point which will be of great help in our evaluation process.

ICOMOS has no obligation to contact States Parties during the evaluation process. However, with a view to being as transparent as possible, ICOMOS has agreed to approach States Parties in specific cases. This does not prejudice the ICOMOS recommendation on the nomination and should be considered as preliminary information. It also does not prejudice the World Heritage Committee's decision.

We would be grateful if you could provide ICOMOS and the World Heritage Centre with the above information by Tuesday 28 February 2012.

We thank you in advance for your kind cooperation.

Yours faithfully



Regina Durighello
Director
World Heritage Programme

Copy to Mr. Masoud Alavian Sadr, Deputy of Conservation, Revitalization and Inscription of Iranian Cultural Heritage, Handicraft and Tourism Organization (ICHHTO)
Mr. Hamid Omrani Rakavandi, Director of Gonbad-e Qābus Base
Dr. Mohammad Hassan Talebian
World Heritage Centre

From: Gwenaëlle Bourdin [<mailto:gwenaelle.bourdin@icomos.org>]
Sent: Monday, January 09, 2012 4:41 PM
To: Delegation of Iran/Délégation de Iran
Cc: 'Regina Durighello'; Balsamo, Alessandro; Jing, Feng; 'Masoud_alavian'; homrani1347@yahoo.com; 'MH Talebian'
Subject: RE: World Heritage list 2012: Gonbad-e Qābus (Iran) - Additional information (2)

Dear Sir,

In addition to the question raised in the letter sent on 12 December 2011, we would be grateful if you could provide information on the following issue:

ICOMOS notes that according to Section 4 of the nomination dossier a management and restoration plan was prepared in 2006, and in Section 5, it is stated that the property will be managed under an integrated system in accordance with the Master Plan. Please provide information on:

- 1) how the management and restoration plan for Gonbad-e Qabus has been integrated into the Master Plan;
- 2) the implementation of the management and restoration plan, and
- 3) the updating of the management and restoration plan.
Please provide a copy of the most recent management and restoration plan.

We would be pleased if you could provide ICOMOS and the World Heritage Centre with the information by **Tuesday 28 February 2012**.

I thank you in advance for your kind cooperation.

Yours sincerely

Gwenaëlle Bourdin
ICOMOS

Mrs Gwenaëlle Bourdin
WH Programme Senior Specialist
World Heritage Unit / Unité patrimoine mondial
ICOMOS
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www.icomos.org

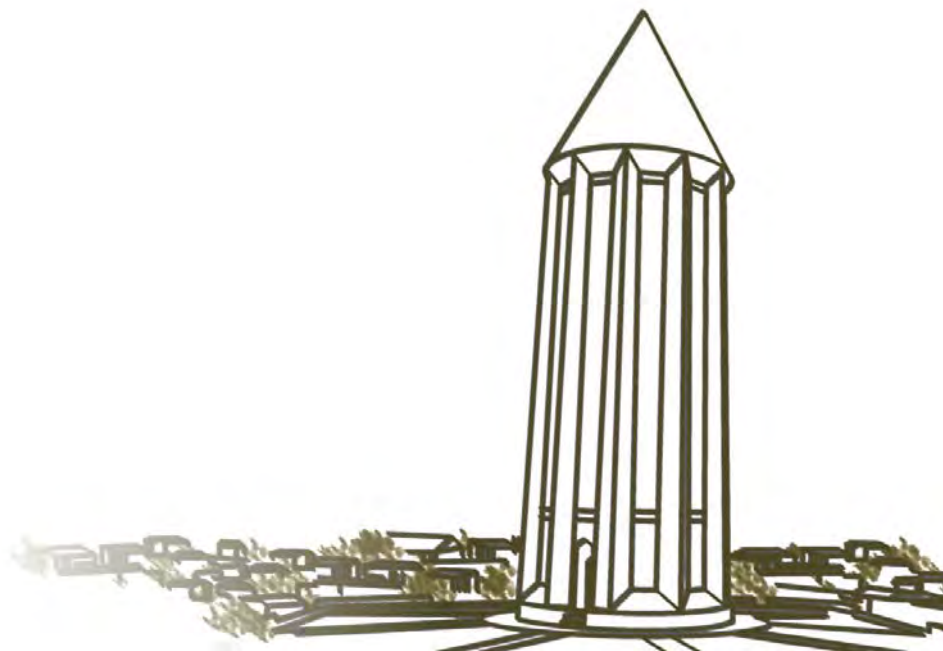
Nomination of

Gonbad-e Qābus

For Inscription on the World Heritage List

Islamic Republic of Iran

[Additional Information](#)



Additional Information on Gonbad-e Qābus

Description

It is stated in the nomination dossier (p.105) under criteria (i), that the property is the first example of a monumental tomb structure that employs a double dome construction with an outer conical covering and an inner hemispherical one. However on p.74 it is stated that is not the case, the roof is not a double dome, there is no inner hemispherical dome beneath the cone, and it is shown in figure 59 on p.75 as a cone constructed of brick core, faced in brick on both sides. It therefore appears that this construction distinguishes the nominated property from the later tomb tower in Iran, such as Rdkan-West. Could state party clarify this issue?

The Iranian traditional dome structures are considered as among the most renowned and significant parts of Iranian traditional constructions. Structurally they are divided into single and double shelled domes, the former historically being the earliest. The main load bearing constituent in the first category is the shell itself. The outer shell is known as “*khoud*” and the interior one is called “*Ahianeh*” (Fig. 1). Generally, double domes can be classified as the followings:

1. **Connected double- shelled.** These domes are divided in two of:
 - a) Solid connected doubled-shelled where “*khoud*” and “*Ahianeh*” are connected to each other and are intermittently separated slightly at the apex.
 - b) Connected hollowed double-shelled in which “*Ahianeh*” and “*khoud*” are linked as far as the so called “*shekar-gah*” (Fig. 2) and above that are divided. These types of domes are constructed in several methods:
 - Without link between “*Ahianeh*” and “*khoud*”.
 - Connection with “*Sandouq-e chini*” (Fig. 3)
 - Connection with “*Konoubandi*”
 - Standing ribs
2. **Unconnected double-shelled.** Here “*khoud*” and “*Ahianeh*” are separated and built relatively far from each other. For this purpose the so-called “*khashkhashi*” (Fig. 4) or hedges are built over “*Ahianeh*” so that “*khoud*” could be constructed on it by means of their support.

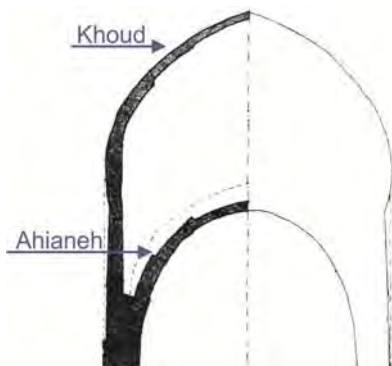


Figure 1. Khoud and Ahianeh

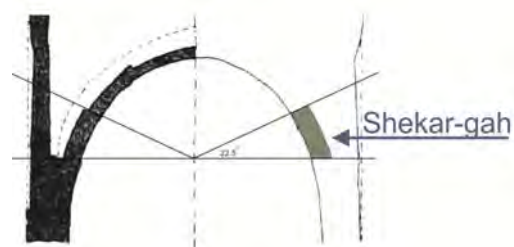


Figure 2. Shekar-gah

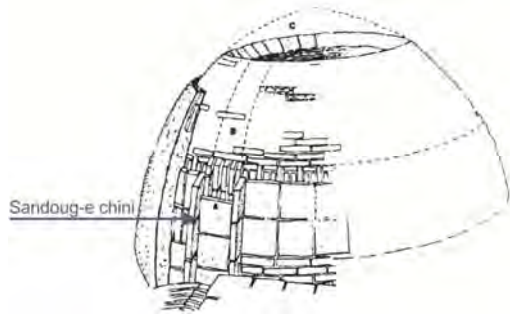


Figure 3. Sandoug-e chini

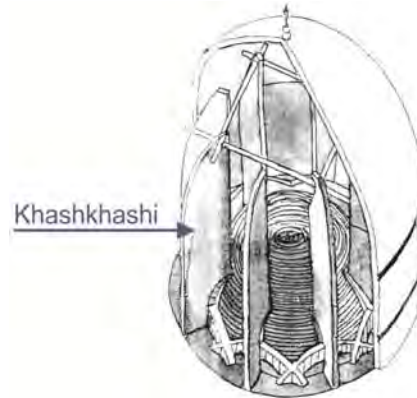


Figure 4. Kashkhashi

The dome of Gonbad- Qābus, built in 397 LH (1006 AD) is from the type of solid connected double-shelled in which the two shells are slightly separated from each other at the apex. In fact this dome can be considered as the beginning for the construction of double-shelled tomb towers used later as a prototype in the construction of West Radkan tomb tower where the gap between the two shells are wider and the structure is built as an unconnected double-shelled dome (The AutoCAD file is attached).

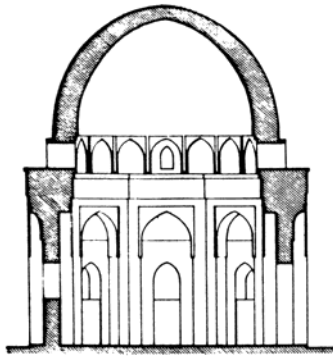


Figure 5. Single Shelled dome, Sheikh-e Joneid - Yazd

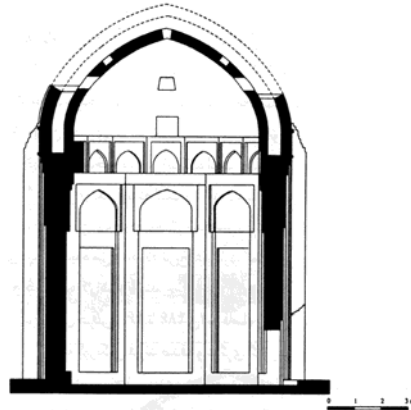


Figure 6. Unconnected Double-Shelled dome, Kharaghan Tomb Tower

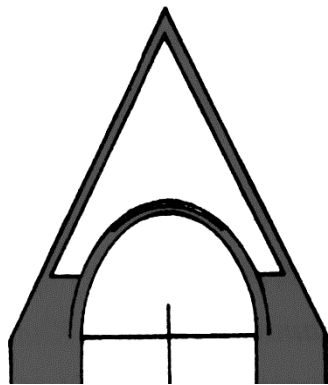


Figure 7. Connected hollowed double-shelled dome, Imamzadeh Ebrahim - Kashan

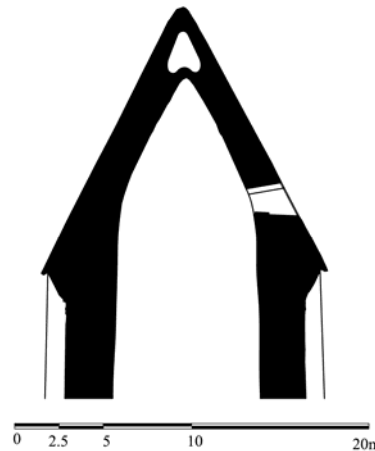


Figure 8. Solid connected double-shelled dome - Gonbad-e Qābus

Justification / Comparative analysis

The nominated property is compared in the nomination dossier with many later commemorative tomb towers with and outside Iran, which generally follow the symbolic form of the nominated property but are all much lower in height. In the nomination dossier, the justification of criterion (ii) is a prototype. However, none of these comparative examples have used the structural qualities of the design to achieve a similar height. Could the State party deepen the comparative analysis with other high brick towers and minarets which also commemorated their founders?

As minarets and tomb towers are quite different within the school of Iranian architecture only the buildings used as tomb towers, within and outside of Iran, are described and analyzed in the comparative analysis and justification parts of the nomination dossier.

Menar, Menareh (minaret) or guiding *Mil*, is a tall slim tower built during pre-Islamic era in specific routes and locations so that travelers could use them as a landmark to find their ways and directions. However same kind of structures were also constructed as *minarets* with *gol-dastas* beside the mosques, tombs and *Imamzadehs* as landmark of the building itself and a place for *muezzins*.



Figure 9. Khosrojerd Minaret -Sabzevar



Figure 10. Brick Minaret -Lorestan



Figure 11. Firoozabad Minaret

The only common points between the *minarets* and tomb towers are their occasional application as the guiding landmark for the travelers. However they fall into completely different categories within the Iranian architectural buildings. It is for this purpose that only the most important tomb towers with architecturally similar plans to Gonbad- Qābus and built with comparable style were selected from different parts of the country and discussed in the dossier. The similarities can be classified as follows:

1. Plan (Circular or transformed circular). Please refer to page 56 of the dossier for full descriptions.
2. Dome types (Unconnected or connected *rok* domes)
3. Use of bricks as the main building materials for the construction of the tomb.



Figure 12. Minaret of Fahraj Mosque

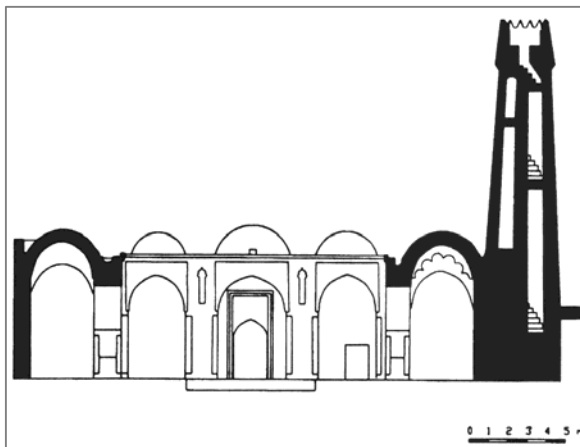


Figure 13. Section of Fahraj Minaret

As explained in page 78 of the nomination dossier the earliest example of splintering or breakage in circular plan is executed in Gonbad-e Qābus. During later centuries the same approach was copied although with additional numbers of fractures. Nevertheless, the plan of Gonbad- Qābus with its ten breakages remains the best-proportioned plan. Construction of a tower of about 53 meters with bricks in the 4th Century LH was never tried in the following centuries although there were a number of instances where the same plan and structure were used. Its remarkable 9 meters deep foundation has been instrumental in preserving it intact and stable during and after more than one thousand years. Its solid conical (*rok*) double-shelled dome has remained firm while a number of other conical double-shelled tomb towers such as *Mihmandoost*, *Kashaneh*, *Lajim*, and, *Radkan*, have lost their outer shell.

Another important point is that in the later periods the tomb towers were ornamented by brick decorations under the lower part of their domes while in Gonbad-e Qabus the only decoration observed on the body is the distinguished skillfully executed brick-made inscriptions executed in two bands above and below the body. This is the earliest example of tomb tower with brick-made inscription.

As described and shown in page 163 of the nomination dossier the tomb towers of Anatolia and the countries on the north of Iran are very close to the ones in Iran in design and application. However it is to be noted that brick-made tomb towers are rare in these countries and as explained most of them are stone made.

Protection

Clarify how distant views to the structure are protected.

Based on the Master Plan of the city of Gonbad- Qābus in which the cultural heritage regulations have also been included the construction of buildings with negative impact on the monument is prohibited within the landscape zone and the corridors ending to it. According to the regulations the zones are constantly and regularly controlled and monitored by the cultural heritage guards and their reports are studied by the Steering and Technical Committees of the Gonbad-e Qābus Base.

Clarify the role of buffer zone residents in relation to management of the nominated property. Are they represented on the steering committee?

Indeed the buffer zone residents are represented on the steering committee. The city's residents show great interests and sensitivities toward the protection of the monument, a very significant factor for the implementation of the activities. All the construction activities within the buffer zone are carried out under the supervision of the Cultural Heritage Office. This Office with the cooperation of the municipality is currently working on a program concerning the reorganization of the area so that the residential buildings would have appropriate structural features to the monument. Incorporation of the residential places with garden is an important part of this program. In addition to the municipality, the City's Council, directly representing the people, fully supervises all the programs and specifically the implementation of the regulations set by the cultural heritage in the Master Plan. It is to be noted that the Council has already executed a number of programs concerning the landscape, conservation, preservation and presentation of the site.

Provide information on risk preparedness.

The General Directorate for the Crisis Management in Golestan Province has the responsibility of administering the programs concerning the preventive measures within a civil defense plan. Gonbad-Qābus' program is also executed and supervised by this office.

Although earthquake is among the destructive factors threatening the monument and there have been a number of reports on the earthquakes within the city and its vicinities but fortunately they have not had negative effects on the Tower's structure.

The Gonbad-Qābus Research Base has already embarked on a geotechnical research program concerning the consolidation of the mound and the building itself. Furthermore the municipality has designated safe and secure specific locations within the city as well as the place of the firefighting brigade near the monument for the times of the earthquakes.



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للتربية والعلم والثقافة

联合国教育、
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The Culture Sector World Heritage Centre

H. E. Mr Mohammad Réza Majidi
Ambassador
Permanent Delegation of the
Islamic Republic of Iran to
UNESCO
UNESCO House

Ref: CLT/WHC/PSM/12/LJ/APA/226 16 August 2012

Subject: **Inscription of *Gonbad-e Qābus* (C1398) Islamic Republic of Iran,
on the World Heritage List**

Sir,

I have the pleasure to inform you that the World Heritage Committee, at its 36th session (Saint Petersburg, Russian Federation, 24 June – 6 July 2012), examined the nomination of the *Gonbad-e Qābus* and decided to **inscribe** the property on the World Heritage List. The decision of the Committee concerning the inscription is attached.

I am confident that your government will take the necessary measures for the effective conservation of this new World Heritage property. The World Heritage Committee and its Secretariat, the World Heritage Centre, will do everything possible to collaborate with you in these efforts.

The *Operational Guidelines for the Implementation of the World Heritage Convention* (paragraph 168), request the Secretariat to send to each State Party with a newly inscribed property a map of the area(s) inscribed. Please examine the attached map and inform us of any discrepancies in the information by **1 December 2012**.

The inscription of the property on the World Heritage List is an excellent opportunity to draw the attention of visitors to, and remind local residents of, the *World Heritage Convention* and the outstanding universal value of the property. To this effect, you may wish to place a plaque displaying the World Heritage emblem and the UNESCO logo at the property. You will find suggestions on this subject in the *Operational Guidelines for the Implementation of the World Heritage Convention*.

In many cases States Parties decide to hold a ceremony to commemorate the inscription of a property on the World Heritage List. Upon request to the World Heritage Centre by the State Party, a World Heritage Certificate can be prepared for such an occasion.

I would be grateful if you could provide me with the name, address, telephone and fax numbers and e-mail address of the person or institution responsible for the management of the property so that we may send them World Heritage publications.

Please find attached the brief descriptions of your site, prepared by ICOMOS and the World Heritage Centre, in both English and French. As these brief descriptions will be used in later publications, as well as on the World Heritage

website, we would like to have your full concurrence with their wording. Please examine these descriptions and inform us, by **1 December 2012** at the latest, if there are changes that should be made. If we do not hear from you by this date, we will assume that you are in agreement with the text as prepared.

Furthermore, as you may know, the World Heritage Centre maintains a website at <http://whc.unesco.org/>, where standard information about each property on the World Heritage List can be found. Since we can only provide a limited amount of information about each property, we try to link our pages to those maintained by your World Heritage property or office, so as to provide the public with the most reliable and up-to-date information. If there is a website for the newly inscribed property, please send us its web address.

All the Decisions adopted by the 36th session of the World Heritage Committee are available at the following web address of the World Heritage Centre:
<http://whc.unesco.org/archive/2012/whc12-36com-19e.pdf>.

As you know, according to paragraph 172 of the *Operational Guidelines for the Implementation of the World Heritage Convention*, the World Heritage Committee invites the States Parties to the *Convention* to inform the Committee, through the World Heritage Centre, of their intention to undertake or to authorize in the area protected under the *Convention* major restorations or new constructions which may affect the outstanding universal value of the property.

May I take this opportunity to thank you for your co-operation and for your support in the implementation of the *World Heritage Convention*.

Please accept, Sir, the assurances of my highest consideration.



Kishore Rao
Director

cc: National Commission of the Islamic Republic of Iran for UNESCO
ICOMOS
UNESCO Office in Tehran

Decision: 36 COM 8B.24

The World Heritage Committee,

1. Having examined Documents WHC-12/36.COM/8B and WHC-12/36.COM/INF.8B1,
2. Inscribes **Gonbad-e Qābus, Iran (Islamic Republic of)**, on the World Heritage List on the basis of **criteria (i), (ii), (iii) and (iv)**;
3. Adopts the following Statement of Outstanding Universal Value:

Brief synthesis

Visible from great distances in the surrounding lowlands near the ancient Ziyarid capital, Jorjan, the 53-metre high Gonbad-e Qābus tower dominates the town laid out around its base in the early 20th century. The tower's hollow cylindrical shaft of unglazed fired brick tapers up from an intricate geometric plan in the form of a ten pointed star to a conical roof. Two encircling Kufic inscriptions commemorate Qābus Ibn Voshmgir, Ziyarid ruler and literati as its founder in 1006 AD.

The tower is an outstanding example of early Islamic innovative structural design based on geometric formulae which achieved great height in load-bearing brickwork. Its conical roofed form became a prototype for tomb towers and other commemorative towers in the region, representing an architectural cultural exchange between the Central Asian nomads and ancient Iranian civilisation.

Criterion (i): Gonbad-e Qābus is a masterpiece and outstanding achievement in early Islamic brick architecture due to the structural and aesthetic qualities of its specific geometry.

Criterion (ii): The conically roofed form of Gonbad-e Qābus is significant as a prototype for the development of tomb towers in Iran, Anatolia and Central Asia, representing architectural cultural exchange between the Central Asian nomads and ancient Iranian civilisation.

Criterion (iii): Gonbad-e Qābus is exceptional evidence of the power and quality of the Ziyarid civilisation which dominated a major part of the region during the 10th and 11th centuries. Having been built for an emir who was also a writer, it marked the beginning of a regional cultural tradition of monumental tomb building including for the literati.

Criterion (iv): The monument is an outstanding example of an Islamic commemorative tower whose innovative structural design illustrates the exceptional development of mathematics and science in the Muslim world at the turn of the first millennium AD.

Integrity

The property expresses its value as an exceptional geometric structure and icon in the small town of Gonbad-e Qābus, clearly visible from many directions. It continues to express features of an Islamic commemorative monument combining traditions of Central Asia and Iran. The exterior flanges and inscription bands are in good condition, but the insertion of the ramp and the design of the retaining wall on the hillside have slightly damaged the form of the mound on which it stands.

Authenticity

The monument retains its form and design, materials, visual dominance in the landscape, and continues as a holy place visited by local people and foreigners, and as a focus for traditional events.

Protection and management requirements

Gonbad-e Qābus is protected under the Law for Protection of National Heritage (1930) and was inscribed on Iran's list of national monuments in 1975 as number 1097. Regulations pertaining to the property provide that damaging activities are prohibited and any intervention, including archaeological investigation, restoration and works to the site must be approved by the Iranian Cultural Heritage, Handicrafts and Tourism Organisation (ICHHTO). The tomb tower and surrounding area are managed jointly by the Municipality and ICHHTO in accordance with the Master Plan for Gonbad-e Qābus town (1989) and the detailed plan (2009), which aim to preserve the historic and visual characteristics of the city. Protection measures controlling heights in the buffer zone and landscape zone are supported by the Master Plan. The management plan should be extended to include a conservation programme.

4. Recommends that the State Party extend the Management Plan to integrate a conservation programme for the property, to be implemented under the guidance of the Steering Committee. This should cover:
- Completion of the geotechnical research programme concerning the consolidation of the mound and the building itself,
 - A detailed record of the existing condition of the structure as a basis for the conservation programme,
 - Guidelines for interventions to the monument and regular monitoring and feedback to the Steering Committee as a basis for ongoing maintenance,
 - A risk preparedness strategy,
 - Review of the landscaping of the mound in conjunction with developing a strategy for dealing with the rising damp problem,
 - A tourism management strategy.

Surface and coordinates of the property inscribed on the World Heritage List by the 36th session of the World Heritage Committee (Saint Petersburg, 2012) in accordance with the Operational Guidelines.

State Party	Property	ID N	Area	Buffer zone	Centre point coordinates
Iran (Islamic Republic of)	Gonbad-e Qābus	1398	1.475446	17.855098	N37 15 28.9 E55 10 08.4

Brief Description in English

The 53 m high tomb built in AD 1006 for Qābus Ibn Voshmgir, Ziyarid ruler and literati, near the ruins of the ancient city of Jorjan in north-east Iran, bears testimony to the cultural exchange between Central Asian nomads and the ancient civilization of Iran. The tower is the only remaining evidence of Jorjan, a former centre of arts and science that was destroyed during the Mongols' invasion in the 14th and 15th centuries. It is an outstanding and technologically innovative example of Islamic architecture that influenced sacral building in Iran, Anatolia and Central Asia. Built of unglazed fired bricks, the monument's intricate geometric forms constitute a tapering cylinder with a diameter of 17–15.5 m, topped by a conical brick roof. It illustrates the development of mathematics and science in the Muslim world at the turn of the first millennium AD.

Brief Description in French

Cette tour funéraire, haute de 53 mètres, a été érigée en 1006 après J.-C. pour Qābus ibn Voshmgir, souverain ziyaride lettré, près de Djordjan, l'ancienne capitale ziyaride, au nord-est de

l'Iran ; elle témoigne des échanges culturels entre les nomades de l'Asie centrale et l'ancienne civilisation iranienne. Seule trace de la ville de Djordjan qui fut un pôle artistique et scientifique avant d'être détruite par les invasions des Mongols aux XIV^e et XV^e siècles, la tour est à la fois une prouesse technique et un exemple remarquable de l'architecture islamique en matière de tours funéraires ; son influence se fait sentir en Iran, en Anatolie et en Asie centrale. Construit en briques cuites non vernissées, ce mausolée est conçu selon un schéma géométrique complexe pour former une tour cylindrique – de 17 mètres de diamètre à la base et 15,5 mètres sous le toit – qui s'effile vers un toit conique en briques. Il témoigne du développement des mathématiques et des sciences dans le monde musulman au tournant du premier millénaire.

