

Goldsmithing, a significant craft in Iran



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EXCLUSIVE

Among all arts originating from the human desire for beauty, goldsmithing has had a special place in history. Due to its extraordinary shininess, high resistance to oxidation, other chemical reactions and desirable malleability, gold has been used for making ornaments and decorative artworks since ancient times. Goldsmithing is a profession in which an artist melts the precious metal and molds it into various shapes. Goldsmithing can be a rewarding career for creative and detail-oriented people because they can enjoy this type of metalworking which is more delicate than similar jobs such as blacksmithing. Due to the fact that gold-

smithing requires skill and attention to detail, the income earned from this job is higher than other similar jobs.

Learning to make jewelry causes one to develop his or her creativity and combine some business skills with innovative techniques. Goldsmithing is an art, the product of which is considered a handicraft.

Iran, which has had rich deposits of metals and precious stones, has helped develop the global goldsmithing industry throughout history. A number of copper ornaments and strings of colored beads, dating back to the Bronze Age, have been discovered during archaeological excavations carried out in various parts of Iran.

The jewels unearthed in Susa, an ancient site in Khuzestan Province, in southern Iran, which include bracelets and necklaces decorated with various beads, show the old

history of jewelry making in Iran.

The priceless jewels and gold ornaments kept in famous and prestigious museums in Iran and elsewhere, as well as those found in famous collections indicate that Iranian goldsmiths and jewelers have had extraordinary creativity and skill in making precious ornaments in the course of history.

The first Iranian gold bracelet, the end of which is in the shape of a lion's head and belongs to the Achaemenid Era, was discovered on Marlik Hill, an ancient site in Gilan Province.

According to historical documents, the metalworking art flourished in the Iranian Plateau during the Achaemenid Period, when casting and hammering metals, especially gold, and the use of precious stones as ornament became very popular.

During the Parthian Period, gold was mostly used to make

earrings, rings, bangles and necklaces.

Rhytons remaining from the Achaemenid Period, golden plates from the Sassanid Period, and silver and gold jewelry from the Seljuk and Safavid eras show the antiquity of goldsmithing in Iran.

Since the beginning of the Islamic Era, the art of goldsmithing has been used mostly in making jewelry for people from different classes of society.

The combination of goldsmithing and other arts, and the use of lapis lazuli, agate, ruby, emerald, turquoise and diamond have helped make Iranian jewelry more and more beautiful.

Finally, in the 20th century, Iran's goldsmithing industry entered a new era. Due to an increase in travel by Iranians to Europe, not only has Iranian clothing changed from its traditional form, but the goldsmithing industry has also been affected.

Shortfalls of wind-catchers

A passive cooling system refers to any building element or design that, naturally and without the use of electro-mechanical components, lowers the temperature of the building by excluding outdoor heat or by transferring the indoor heat to natural heat sinks. The term vernacular passive cooling system (VPCS) applies to any passive system that has traditionally been employed and used in vernacular buildings.

The wind-catcher (*badgir*) is a ventilating shaft which projects above the roof of a building with openings towards the favourable prevailing winds.

Wind-catchers (*badgirs*) take a variety of forms. They differ in terms of materials and size, ranging from relatively plain wind scoops that can receive breezes from one direction to elaborately decorated multi-directional wind towers with openings on

several sides.

Although *badgirs* have been repeatedly recognised as ingenious and advantageous cooling systems, various authors have identified their shortfalls, including:

1. The *badgir* has an opening with no protection which can cause a problem with noise, insects, dust, rain and small birds entering the building.
2. There is also a lack of control over the wind-catcher's performance. Shutters (above or below the *badgir*) may be used to close off the flow of air into rooms temporarily, while during the winter the vents in the tower are closed up.
3. Additionally the cooling potentials of wind-catchers are limited and suggests that wind-catchers equipped with dampers and moist surfaces would perform better than the conventional traditional wind-catchers. In com-



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parison with the performance of multidirectional wind-catchers in the central province of Yazd with that of single-directional examples in Egypt

and Pakistan the four-sided wind-catchers in Yazd (those with openings on four different sides) are much less effective, because they do not face

the prevailing favourable winds all the time; the vent is not sufficiently aerodynamically designed to direct the wind downwards; additionally, the intake and

discharge air shafts are not fully separated, so that some of the air admitted to the tower is lost through other tower openings and never enters the building.

By placing the usual four-sided *badgir* on the roof, the fresh cool air drawn into the building by one of the sides gets mixed with the warm air being drawn out by the other three sides. When this happens, the temperature of the inflowing air increases, and the overall cooling performance of the decreases.

During the winter, the traditional *badgir* still allows cold air into the building and shifts the warm air out. This makes the spaces connected to the *badgir* almost redundant.

In evaluating the performance of wind-catchers, the majority of studies have been based on short-term physical observations, measurements and modelling only. Few even touch on the issue of how their performance is perceived in terms of convenience, economy, social concerns or aesthetics.