

The ancient Persian way to **keep cool**

- **Fairy cold**

Let's sit in the shade and keep cool.

Cool (adj.)

- **Calm**

She tried to remain cool, calm and collected.

He has a cool head (= he stays calm in emergency).

From ancient Egypt to the Persian Empire, an **ingenious** method of catching the breeze kept people cool for **millennia**. In the search for emissions-free cooling, the "**wind catcher**" could once again **come to our aid**.

Ingenious (adj.): (of an object, a plan, an idea, etc.) resulting from a clever new idea:

Ingenious ways of saving energy

Millennia (noun) [pl.] → Millennium (sing.) a period of a thousand years

Come to sb's aid [U] (formal) → help that is given to a person:

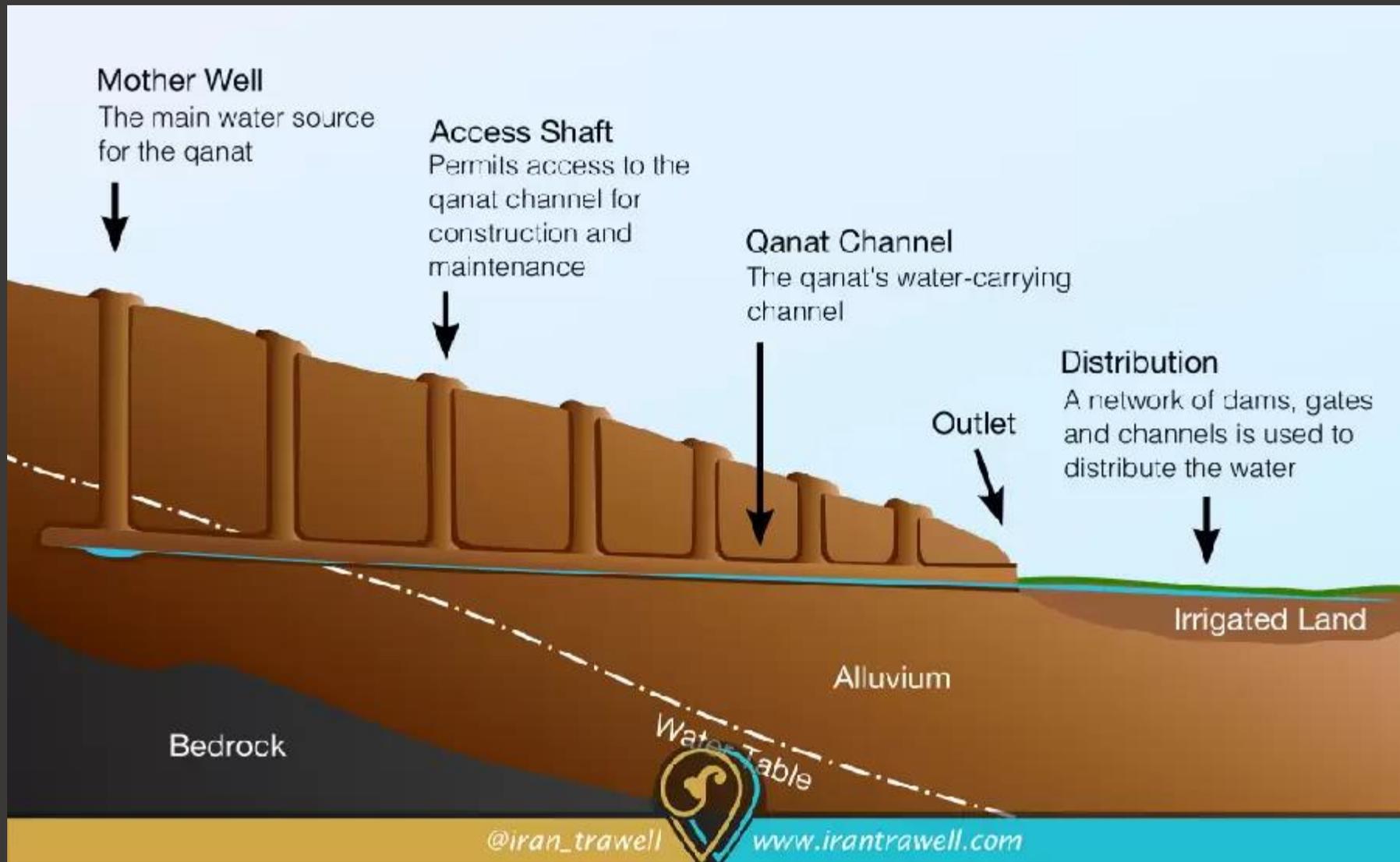
One of the staff saw he is in difficulty and came to his aid.

The city of Yazd in the desert of central Iran has long been a **focal point** for creative ingenuity. Yazd is home to a system of ancient engineering **marvels** that include an underground refrigeration structure called yakhchāl, an underground **irrigation** system called qanats, and even a network of couriers called pirradaziš that **predate** postal services in the US by more than 2,000 years.

Focal point (noun) → a thing or person that is the centre of interest
He quickly became a focal point for those who disagreed with government policy.

Marvels: wonders
The doctors have done marvels for her.

Predate (verb) → to be built at an earlier date than sth else in the past.
Few of the town's buildings predate the earthquake of 1755.





لیگشت



Among Yazd's ancient technologies is the wind catcher, or bādgir in Persian. These remarkable structures are a common sight **soaring** above the rooftops of Yazd. They are often rectangular towers, but they also appear in circular, square, octagonal and other ornate shapes.

Yazd is said to have the most wind catchers in the world, though they may have originated in ancient Egypt. In Yazd, the wind catcher soon proved **indispensable**, making this part of the hot and **arid** Iranian Plateau liveable.

Though many of the city's wind catchers have fallen out of use, the structures **are** now **drawing** academics, architects and engineers back to the desert city to see what role they could play in keeping us cool in a rapidly heating world.

Draw (verb) → to attract or interest sb

Her screams drew passers-by to the scene.

As a wind catcher requires no electricity to power it, it is both a cost-efficient and green form of cooling. With **conventional** mechanical air conditioning already accounting for a fifth of total electricity consumption globally, ancient alternatives like the wind catcher are becoming an increasingly **appealing** option.

Appealing (adj.) → attractive or interesting
Village life is somehow more appealing.

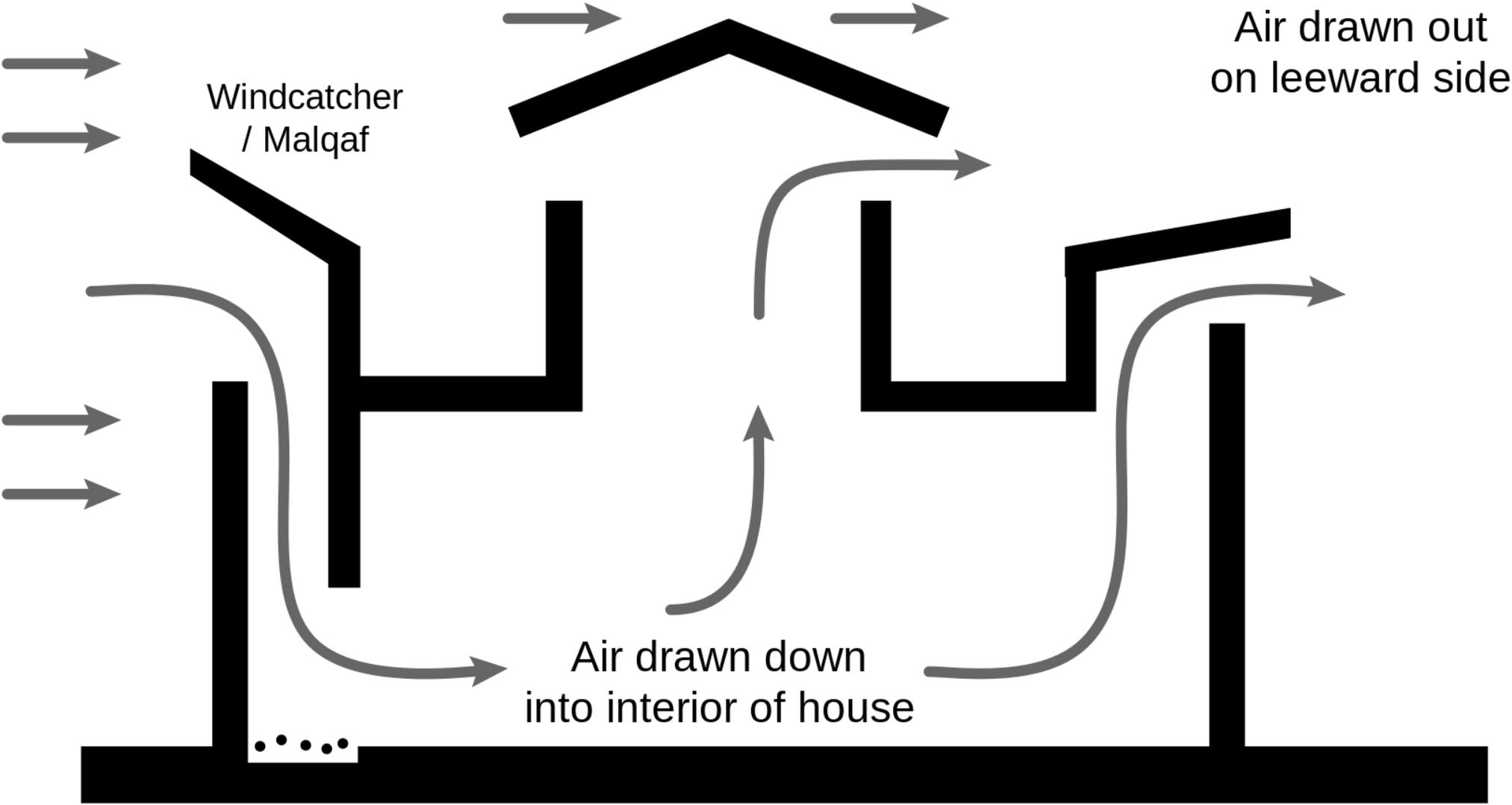
There are two main forces that drive the air through and down into the structures: the incoming wind and the change in **buoyancy** of air depending on temperature – with warmer air tending to rise above cooler, denser air.

Buoyancy (noun) → floating
A buoyancy aid



First, as air is caught by the opening of a wind catcher, it is **funnelled** down to the **dwelling** below, depositing any sand or **debris** at the foot of the tower. Then the air flows throughout the interior of the building, sometimes over subterranean pools of water for further cooling. Eventually, warmed air will rise and leave the building through another tower or opening, aided by the pressure within the building.

Prevailing Wind



Windcatcher / Malqaf

Air drawn out on leeward side

Air drawn down into interior of house

Dust deposited



The shape of the tower, alongside factors like the layout of the house, the direction the tower is facing, how many openings it has, its configuration of fixed internal blades, canals and height are all finely tuned to improve the tower's ability to draw wind down into the dwellings below.

Using the wind to cool buildings has a history stretching back almost as long as people have lived in hot desert environments. Some of the earliest wind-catching technology comes from Egypt 3,300 years ago, according to researchers Chris Soelberg and Julie Rich of Weber State University in Utah.