



STEPWELLS OF AHMEDABAD

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Traditional Water Harvesting Structures of North Central Gujarat

The region of north central Gujarat has a rich tradition of building crafts that evolved over centuries. Evident in edificial structures such as temples, mosques, mausoleums, and mansions (*havelis*), this tradition is also strongly reflected in the different types and scales of utilitarian structures built for harvesting surface water and groundwater. The main types, including the stepwell, have been outlined below.

Tank – Large, naturally occurring reservoirs that assumed the contours of the land were sometimes laboriously excavated into circular, rectangular, octagonal or other polygonal shapes. Such geometrically shaped reservoirs are referred to as tanks.¹ Their sides are embanked with strong retaining walls or long, parallel flights of steps in stone (*ghats*) punctuated with ramps for animals, pavilions, and elaborate sluices. In some tanks, small islands were raised in the center and accessed via bridges. Tanks were frequently associated with elite precincts that included temples, tombs, mosques, or mansions. Gardens and orchards were often planted on the banks and islands of the tanks. The 11th century *Sahastraling* tank in Patan and the 15th century *Kankaria* and *Sarkhej* tanks in Ahmedabad are prime examples of this type.

Kund (Stepped Pond) – A *kund* is a square or rectangular funnel-shaped basin that stores rainwater. It is smaller than a tank but descends much deeper. As a result, there is comparatively less evaporative water loss. The sides of *kunds* are usually set at a steep angle, much greater than the natural slope of the ground. As a result, a large mass of steps, often laid out in a complex triangular or pyramidal forms, is required to buttress the terraced walls.² *Kunds* store rainwater that falls directly from the sky, but some also access groundwater through a well shaft dug at the base of the *kund* or adjacent to it. *Kunds* were typically associated with the ceremonial rituals of temple complexes and often have shrines carved into their stepped walls. The 11th century *Suryakund* at the Modhera Sun Temple complex (Mehsana) and the 12th century *Kundvav* at Kapadwanj are noteworthy examples of this type.

Vaav (Stepwell) – A typical stepwell is a subterranean building that consists of a large, open well shaft attached to a long, stepped corridor sandwiched between retaining walls. Descending several stories from the ground level to the aquifer, the stepped corridor alternates between light and shade

¹ Julia A. B. Hegewald, *Water Architecture in South Asia: A Study of Types, Development, and Meanings*, Studies in Asian Art and Archaeology, v. 24 (Leiden ; Boston: Brill, 2002).

² *ibid.*

cast by pillared galleries on each consecutive landing, providing much-needed respite from the region's hot, dry climate. These galleries, built in beamed or arched modes of construction, brace the retaining walls against the thrust of the earth. The steps, walls, and well shaft are usually built in stone. Some examples of stepwells are the 11th century *Ankol mata vaav* in Davad village and the 15th century *Rudabai vaav* at Adalaj on the outskirts of Ahmedabad city.

Stepwells served as sources of water for domestic use and irrigation. These structures were deeply intertwined with the ritualistic routines of women, who frequented them to fetch water for their household. The intricate relationship between women and stepwells is elaborated in [Gallery 4](#). Some stepwells were built next to places of worship, such as temples and mosques, while many were located along historic travel routes,³ like contemporary service stations on a highway, to provide water and shelter for trading caravans, pilgrims, armies, and pastoralists.

Well shaft sites were chosen with great skill, based on clues provided by the soil and surface vegetation, as well as astronomical reasoning by water diviners (*panikals*) whose judgment was regarded as unerring.⁴ The process of construction began by consecrating the site with rituals and celebration.⁵ Whereas simple unlined wells were collectively constructed by local people, elaborate stepwells required specialized communities of earth and stone workers. A community called *Ods* built wells and reservoirs in this region for at least a thousand years from the 7th century to the mid-19th century.⁶

Stepwells ranged widely in size and form based on geographic factors such as the depth of the aquifer, the soil profile, immediate site conditions, and socio-economic factors such as the availability of funds and labor. Some stepwells are simple, utilitarian structures found within or at the edge of small villages. The building and maintenance of these wells was largely organized at the village or settlement level, while others were commissioned as charitable pursuits by elite patrons such as kings, queens, nobles, courtiers, and merchants. Stone inscriptions documenting the names of patrons, cost of building, and project beneficiaries were installed in niches of the retaining walls. Such stepwells typically exhibit complex architectural layouts and elements as well as embellishments, including iconographic sculptures and ornamental mouldings.

However, it is very important to note that stepwells were part of a longstanding tradition of water harvesting that was deeply entrenched in social inequality. Village communities were often internally differentiated by caste and class, and showcased a complex interplay of power relations involving unequal access to the village commons.⁷

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³ K.N. Momin, "Route Indicators of the Sultanate Period in Gujarat," *Journal of the Maharaja Sayajirao University of Baroda XXXI-XXXII.1*, 1998, 121–30.

⁴ David Hardiman, "Well Irrigation in Gujarat: Systems of Use, Hierarchies of Control," *Economic and Political Weekly*, June 20, 1998, 13.

⁵ Kartik Vora, "Subterranean Architecture: A Forgotten Tradition of Sultanate Gujarat." (CEPT University, 1983).

⁶ David Hardiman, "Well Irrigation in Gujarat: Systems of Use, Hierarchies of Control," *Economic and Political Weekly*, June 20, 1998, 13.

⁷ Kathleen D Morrison, "Dharmic Projects, Imperial Reservoirs, and New Temples of India: An Historical Perspective on Dams in India," *Conservation and Society* 8, no. 3 (2010): 182, <https://doi.org/10.4103/0972-4923.73807>.