

Amsterdam : Water : Brick

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Built largely on land reclaimed from bogs, lakes and rivers, Amsterdam has always had a significant, often ambivalent relationship with water. It has shaped nearly every aspect of the urban fabric. Most obvious to the casual observer, the city is ringed by a series of canals which ultimately come back to meet the river IJ near the city center. Commonly understood by students of architecture and engineering is Amsterdam's dependence on piers to keep buildings steady on swampy foundations and pumps to keep the low-lying polders dry. What is often forgotten about water in Amsterdam is its importance to and coexistence with the city's primary building material – brick.

The Dutch are not blessed with a great number of on-shore natural resources from which to build a city. What little forest land exists in the Netherlands lies to the far south and east in those provinces above sea level with more consistently dry and fertile earth. The wet and often salty conditions around Amsterdam have long prevented the growth of timber appropriate for building, limiting the amount of wood architecture present in the city. Likewise, the low flood basins of North Holland are almost entirely devoid of surface rock to quarry or collect for the construction of buildings at an urban scale, the soft sedimentary subsurface being quickly washed away where exposed. What has always been plentiful are water, clay and soil – together, mud.



The humble brick has been used since prehistory all around the globe. Bricks are easy and cheap to make, last a tremendously long time and can be adapted to an enormous number of situational and formal permutations. They are central to societies lacking raw building resources from the south of India to the American deserts to, crucially, the Netherlands. The Dutch, among all brick-building peoples have taken full advantage of the material's strengths, allowing it to guide their response to their overabundance of water.

Perhaps one of the most significant uses for brick in Holland is not for vertical construction but for hardscaping. Nearly all roads in the central city are paved in brick. Road markings are laid out in alternate colors, rather than painted on, keeping them from peeling off in the damp. The dry-laid brick allows streets to remain permeable to the flow of water – rain water going down into the earth and groundwater seeping back up. By allowing water to move freely through the membrane of the road surface, Dutch engineers have prevented serious drainage problems which could contribute to the erosion of delicate foundations, particularly in heavy storms. For a city that must often repair and replace its storm-water infrastructure, brick paving also allows for easy access to the subsurface and can be relayed after work is completed with little to no material waste.



As a walling material, brick also deals well with water. It does not decompose in the damp like other materials making it ideal for foundation work in the swampy city, particularly in the time before concrete was in common use. It's porosity allows moisture to move through it as necessary, allowing buildings to breathe and avoiding mold and mildew issues. Unlike stone, it does not have significant issues with freezing in the wet environment. It also deals better with settling than other materials, making small adjustments at each course which can be re-mortared as necessary. Brick can also be vitrified, as the Dutch discovered. Such "clinker" bricks are incredibly useful for keeping water out of buildings and in fountains and basins.

As a container for water, brick walls form a good deal of the canal banks throughout the city. It serves well as an earth-retainer, preventing erosion by boat-wakes and channel flows. Its resilience allows canals to be built up against the very walls of homes and businesses, giving rise to the unique block profile that plunges right down to and through the water's surface. Brick is also the primary material for the many traffic bridges over the canals. Well suited to arch-making, the massive tunneled bridges of Amsterdam take their form directly from the necessities of engineering in brick.

Finally, brick provides a flexible medium in which water finds expression in architecture. The Amsterdam School architects often took advantage of the geometric flexibility of large masses of brick to make buildings in lithe water, wave and boat forms. The pattern-making possibilities of masonry have reached their zenith in the work of Dutch bricklayers who often wove fishing nets, traders marks, anchors and the like into the fronts of Amsterdam's houses.

It is inevitable that a culture so intimately connected to water and brick would find the two to go hand in hand. Brick has formed the backbone of all architecture in Amsterdam until modern times precisely because of its aptitude for the water-rich environment. Itself beginning as mud, brick meets nearly all of the demands that water places upon the city – containing it, bracing buildings against it and bridging over it. Though the selection of brick as the primary building medium seems a purely practical one, it has become as central to the city's ethos as water, itself. Perhaps now we see brick coming into its own, not only as a response to water, but also as a poetic counterpoint.



