

- Venice was born in the lagoon because the lagoon was useful to Venice.

So Venetians shaped the lagoon the way they wanted.

But this environment posed a problem.

How could they build on such soft ground?

- I'm not that heavyweight.

I weigh 65 kilos, but I'm sinking like this.

65 kilos is around 140 pounds.

If the mud can't support this, how could it bear the weight of a wooden house, let alone one of Venice's grand stone buildings?

The solution, forcing wooden poles into the soft mud.

These poles don't support the weight.

(speaking in Italian)

They transform the mud around them.

- The idea is to do a little experiment.

When you plant many poles they compact the mud between them.

The water is pushed out and the compaction of the mud itself make the the mud more capable of supporting weight.

Modern day excavations under the city reveal that Venetians maximize the compaction of the mud by using a large number of poles packed tightly together.

Directly on top, they placed wooden planks then impermeable limestone and above the waterline, bricks.

(speaking in Italian)

- Okay, you see, I'm lightweight more than him.

He can also try.

Okay, you see Omar is not sinking because it's the effect of the poles that compacts the mud between them so it changes from more, I would say fluid like to more solid like.

And the proof of this is when we put the plank over there and do the same thing on the mud without the poles underneath, you see there's a difference.

This technology is the secret of Venice's construction and longevity.

And over the centuries, they created the city we see today.