

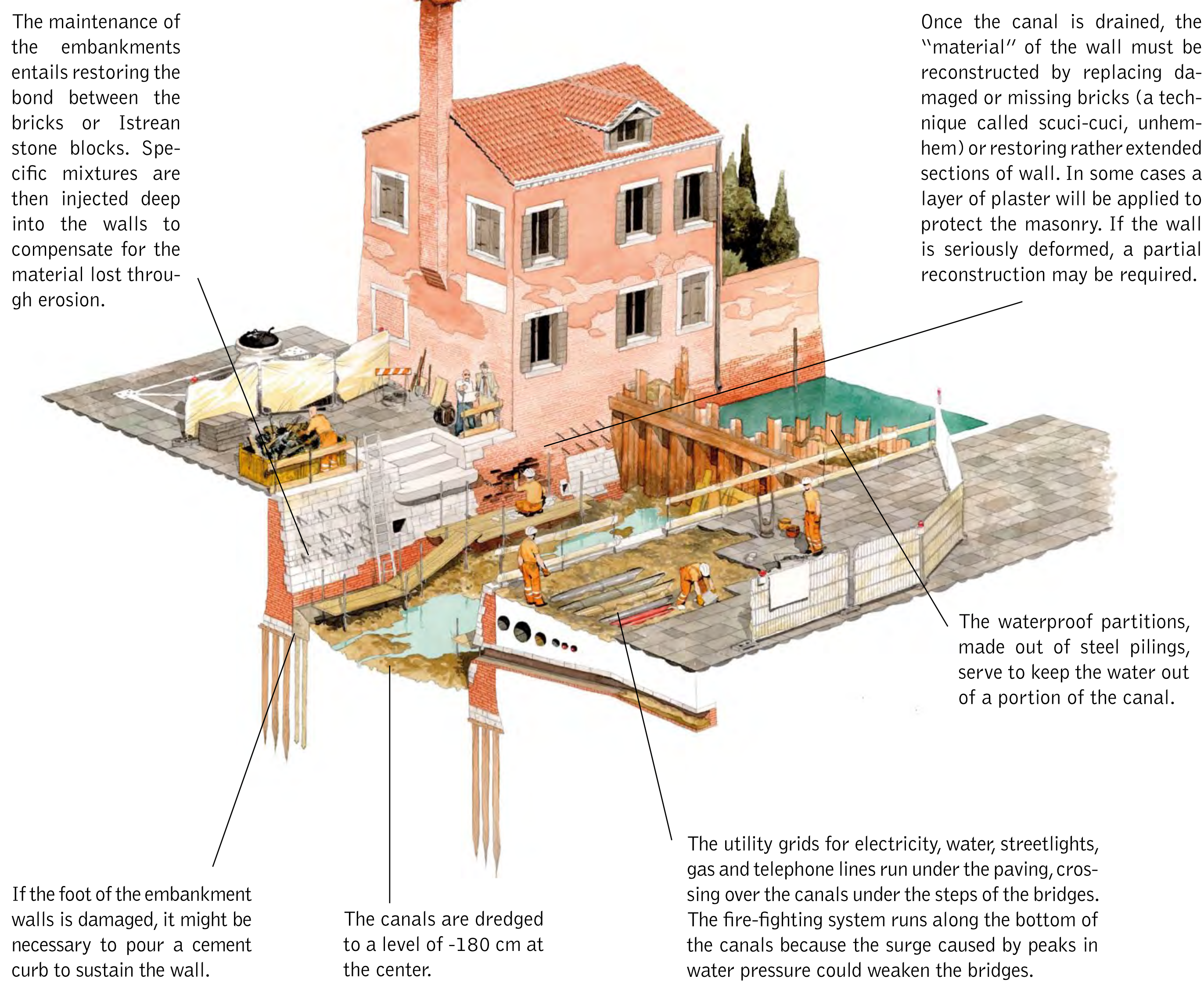
## MAINTENANCE OF THE CITY

Maintenance is a crucial element in the preservation of a city, because it directly concerns its conservation, its functionality and its livability. This principle is even more important in a city as fragile as Venice, considering its urban and architectural complexity and the specificities of the lagoon environment. This is why, since the enactment of the program agreement in 1993, the City of Venice is the enabling subject for all the maintenance projects in its historic centre (financed by the national and regional governments) and Insula SpA is its operational company. It operates under a vast and articulated program of works to preserve the integrity of the foundation structures, to improve the hygienic and sanitary conditions and as a consequence the quality of life of resident citizens and all the visitors that come to Venice.

The urban maintenance work conducted by Insula Spa, under the guidelines of the City of Venice, guarantees the functional effectiveness and preservation of the canals and embankments, of the paving, the bridges, the underground utility grids, the complex system for channeling waste water. All of these are the "elements" that shape the city of Venice and make it alive and livable today and for the future.



architectural impact and the potential reduction in the instances of flooding. The plan to raise the paving in the city primarily concerns the lowest areas (the ones that are more prone to flooding even when the tide is not particularly high) to build to a level, where possible, of +120 cm. During construction, architectural and environmental constraints are respected, seeking as far as possible to maintain the original appearance of the walls and the level of the entrances to homes and public spaces.



The maintenance of the embankments entails restoring the bond between the bricks or Istrian stone blocks. Specific mixtures are then injected deep into the walls to compensate for the material lost through erosion.

Once the canal is drained, the "material" of the wall must be reconstructed by replacing damaged or missing bricks (a technique called scuci-cuci, unhem-hem) or restoring rather extended sections of wall. In some cases a layer of plaster will be applied to protect the masonry. If the wall is seriously deformed, a partial reconstruction may be required.

The waterproof partitions, made out of steel pilings, serve to keep the water out of a portion of the canal.

If the foot of the embankment walls is damaged, it might be necessary to pour a cement curb to sustain the wall.

The canals are dredged to a level of -180 cm at the center.

The utility grids for electricity, water, streetlights, gas and telephone lines run under the paving, crossing over the canals under the steps of the bridges. The fire-fighting system runs along the bottom of the canals because the surge caused by peaks in water pressure could weaken the bridges.

## RAISING THE PAVING FOR ACQUA ALTA

The paving on the streets and in the squares of Venice is largely composed of *magogni*, large stones made out of trachyte quarried in the Colli Euganei. The need to intervene on the underground utilities grids (to upgrade or replace them) and on the sewers (to reactivate them) provide an opportunity to restore the paving, smoothing out ruts and uneven areas to guarantee safe circulation and ensure that rainwater or high tides do not leave persistent puddles.

To mitigate the inconvenience to movement and city life caused by medium and high tides it has been decided to raise the pavements where this is possible. The work involved includes removal of the paving stones and raising the edges by inserting the same material as that of the wall (brick or stone) up to the height indicated by the project, without altering the original appearance of the facing. Before work begins, studies are made to assess.

