

Ferruccio Ferrigni, Assunta Lavorgna

BUT IN THE PAST THEY SOMETIMES GOT IT WRONG TOO...

There is no denying that our efforts to recreate the culture of bygone times is based on the axiom that past generations knew exactly what they were about, and that what has come down to us is the essence of a widely held and well founded understanding which is the fruit of ongoing improvements and intelligent innovation.

We were thus surprised, and almost reluctant, to accept that some of the anomalies we saw were merely remedies for earlier technical errors which the earthquake had suddenly and brutally uncovered.

The most obvious of these are without doubt openings inserted close to the roof ridges of buildings. We know now that ridges, as the focal point of all the stresses on a building, have to be sound in order to ensure that the load-bearing elements are interlinked and that the structure will behave "like a box", determining the resistance of the building as a whole. They must not be weakened by placing openings too close to corners.

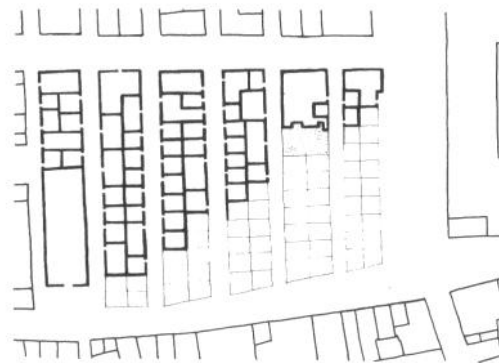
But how is it that a house can have two huge windows just 70 cm from the ridge? Why is it that virtually all the doorways are placed close to the corner of the gable wall?

The staircase which stopped a crack from spreading to a doorway close to a corner is admittedly more elegant than the 19th century tie-beam which supports a building's side wall; but why was the entrance constructed at one end of the facade and not in the middle?

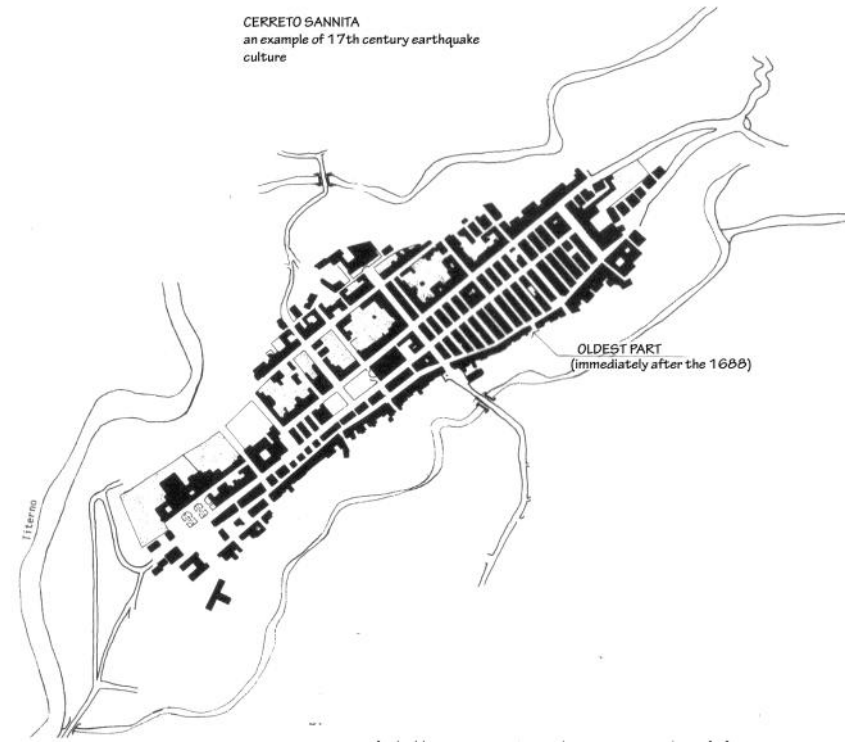
In our search for an answer, and using the methods proposed by the archaeologists, we extended our analysis to neighbouring villages. We found that this feature is very rarely found in other communes (and only in buildings which are 18th-century or later), but that it is a typical feature in Cerreto Sannita.

This village, totally destroyed by the 1688 earthquake, was rebuilt on a rocky spur lower down than the original site, using a plan commissioned by the bishop of the time from an (unknown) architect.

The village plan is cigar-shaped, with three longitudinal streets. The distance between the cross streets is just enough to allow the construction of rows of houses back to back. Each housing unit occupies an area 5 m wide by 7 m deep and is demarcated by two walls which it shares with the adjacent units, a partition wall separating the two rows of houses and, of course, the wall which faces on to the



CERRETO SANNITA
an example of 17th century earthquake
culture



street.

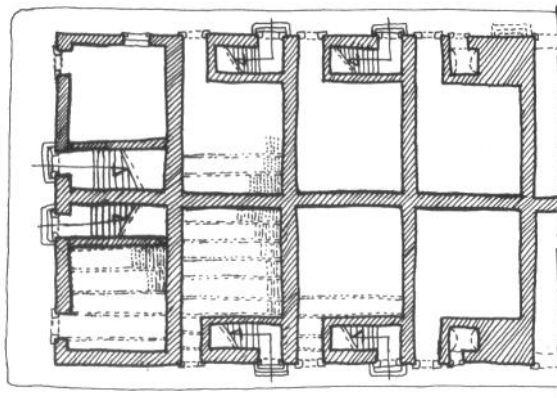
Given that daylight can enter from one side only, dwellings have to be organised upwards. The roof beams and intermediate floors naturally run crosswise.

In order to keep costs down the staircase has to fit exactly into the bay between the facade and the first beam of the upper floor. It thus needs to be up against the facade. But since the plot (as defined in the bishop's plan) is so small, there is not enough room for a staircase going all the way from the stable to the first floor, so some of the steps are constructed outside: 2-3 up to the front door and 5-6 down to the stable.

Thus the houses in the oldest part of Cerreto are all of a well defined "type". The entrance to the stable is at the far left of each unit at street level. At the far right is the front door to the house, reached by the small outside staircase. Just inside the door, to the left, a flight of stairs backed against the facade leads to the first floor, against the left-hand dividing wall. A second stairway running from the right wall to the left wall serves the second floor. The two flights are one above the other and fit into the bay exactly.

The design is thus simple and inexpensive, but it means that all the openings are close to - and very often in - the dividing walls. So the openings are at one end of the property and not at the end of the "dynamic group". Though off-centre in relation to the structure of the individual unit, they are solidly within the group. And it was noted that buildings at the end of the block often have openings not at one end but in the main facade.

This proves once again that earlier cultures understood the way in which the overall building fabric behaves and that cheaper solutions were only adopted if they did not constitute a danger.



At the time of the earthquake Cerreto was an influential regional centre due to its spinning mills, ceramics industry and its status as a bishopric. It thus stands to reason that its style was copied. The mixed-style stone and tuff windows and corner doorways of San Lorenzello were imported from Cerreto.

But the situation in San Lorenzello is somewhat different. The destruction here was not total. Its structures have developed over centuries and do not follow any one rule. New buildings reflect the needs and gradual changes in the capacities of the system and are not built all of a package (as in Cerreto where reconstruction was carried out by an affluent system which was shaken but not ruined by the earthquake).

Because it is not restricted by the size of the plot, the staircase develops freely inside: it is at right angles to the facade and loses its outside steps. But the characteristic feature of the facade - the off-centre doorway - remains.

Consequently the opening is often at the corner of an individual building or structure which, if it is part of a row in the process of being built, will have a blank wall for some time.

In this way a formal feature which certainly reflected the earthquake culture of the community of Cerreto and its architectural context becomes a factor of vulnerability when it is transplanted as a simple architectural convention to a different context.

Does this mean that the community earthquake culture of San Lorenzello is rather poor? This appears to be the case from our summary analysis and from the historical facts.

It would make sense, for example, if the workmen who worked in Cerreto were guided by "technical experts" (perhaps the architect who drew up the

plan?), whilst in San Lorenzello only the external aspect was kept because skilled craftsmen were not directly involved in the reconstruction work.

But that will be a matter for a further and more detailed research project.