OF MAN'S MEASUREMENTS

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"...but woe to you if you go too far, if you go too far it's worse."

In the game of "seven and a half", from La Venganza de Don Mendo, a play by Muñoz Seca, these words were used to express the cruel accuracy of the game.

And if accuracy is crucial for a banal game, what can we say about Architecture. Measurement is the basis of the magnificent game of Architecture.

Thus, the height of the horizontal plane of the floor of the Farnsworth house with respect to the ground is exactly 1.70 meters, which is the height of the human eye. Everything would change if that plane were directly supported, or almost so, on the garden floor, which is what Philip Johnson does in the Glass House, with a very different spatial result.

And if that measure is important in that house of Mies, more so is the distance between the plane of the floor and the ceiling, which is 2.70 meters. Slightly higher than Le Corbusier's ideal 2.26 meters. The precise dimension to feel that sensation of horizontality, of continuity that Mies proposes there. The conjunction of the pressure of the two planes between which man moves, and the transparency of the glass that surrounds them, make that continuity a reality. And in the same way we could analyze the plan dimensions of 9x14 meters, the rectangle that defines the house.

And if we were to change any of the dimensions, the space created there would change; of course, it is a box, a sublime box, but with very precise and well-defined measurements. As well defined as the "seven and a half" in the card game we described at the beginning.

For the same reason, the Pantheon, which we have already analyzed on other occasions in the light of the avalanche built and measured of the light that penetrates through the divine oculus, we can see it on the basis of its measurements. Because if instead of the 42.3 meters in diameter, both in plan and in section, of that celestial sphere, for wanting to be more papist than the Pope, we were to double the size of that diameter, the Pantheon, rather than enlarging, would be gigantic and Beauty would escape there through the same door through which it arrived. And the same would happen with the dimensions of the oculus.

THE WORD CONJUGATED WITH THE NUMBER

Many times I have quoted the last text written by María Zambrano on poetry. It is beautifully written and at the same time enormously suggestive and precise. In the last sentence, her last written sentence, she defines poetry as "the word conjugated with the number". And there is a mysterious parallelism between poetry and architecture. Architecture, in short, is nothing more than the conjugation of materials with number. To raise with those materials, with some dimensions, some measures, some precise

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numbers, some spaces that, due to the proportions established through those numbers, are capable of moving man. As poetry moves him.

There are architects who know a lot about history, a lot. Others know everything about structures or installations. Others, very ingenious, capable of designing a handrail-hot water pipe-drainage-handlebars-radiator. Others who know everything about materials. But if we ask any of them about the dimension (more or less exact, or more exact) of a space, they will almost never be able to answer with certainty, nor with certainty. They do not know.

That is to say that architects design with precision and accuracy (see if not the very limited plans full of numbers with many digits), something they do not know. If not, try asking an architect for the exact dimensions (the ones he decided with enormous accuracy!) of any of his built works. They will all doubt. Or almost all, because there is always some maniac. And it is that, they have not specified them, they have never learned it. Or we have not taught it.

In all schools of architecture that are in the world, there is always a first exercise (no matter what is called the "subject" in which they are asked) in which the student is asked to draw with measures, to take them, his room, his house, his class. With that good intention. But, in no school in the world are they ever asked to do anything like that again.

I know a professor of Projects who had the habit of, at some point in the course, to put the exercise of designing a bathroom, with the healthy intention of making the students aware of the reality of the measures, to project something with precise knowledge of the dimension. Impossible sinks, toilet bowls as bathtubs, bathtubs as ashtrays, etc., always appeared.

The arrangement of the parts, of the elements that make up the architectural space, always ends up in a question of number, of measures. And as in poetry, in order to reach the world of dreams to which it leads us, it is necessary to precisely control its elements. Italo Calvino rightly says that "poetry is the great enemy of chance". The same thing happens in architecture. Getting the measure right is the best way to reach the world of dreams.

SIZE. DIMENSIONS. SIZE. DISTANCE

Once the general measurements are known, it is necessary to consider the strategy of proportion. The size of the various parts that will make up the architectural organism. It is necessary to provide the ingredients, as if it were a cooking recipe. It is necessary to know how many diners are going to taste the dish, and what is the dish you want to make. It is not the same to cook for two people as for twelve. It is not the same to cook potatoes with meat than meat with potatoes. Although the people, the potatoes and the meat appear in all of them.

The only fixed measure is man. With his own physical measurements: the dimensions of his body and the area of influence of his movements.

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And just as the knowledge of measurements is immediate (it is enough to measure), the knowledge of proportion and its effects is somewhat more complex. It requires study and experience.

A space of 2.20 meters in height can be overwhelming or not, depending on its dimensions in width and length. It is not cramped if it is a 2x2 meter bathroom. It can be crushing, even claustrophobic, in a large parking lot of 20x20 meters. Always with man at the center.

The proportion of spaces involves the three directions of space. It would seem a truism to write this, were it not for the fact that we so often see spaces conceived as flat, in only two dimensions, with clearly disastrous results.

If the height dimension is greater than either of the two plan dimensions, the space will always be vertical. The greater the difference, the more vertical it is. This is the case in Gothic cathedrals.

PROPORTION

The decision of one measure or another will depend on the "what" and the "for what". They will depend on the function, the construction, the context, the light and the economy.

To propose some measures a priori without having more data, does not make sense. It is impossible to make a complete bathroom in 1 square meter, for example. There is hardly room for a toilet and a sink. Unless it is in a train or an airplane.

To insist that a house with three bedrooms must be fitted into 60 square meters is almost impossible. Especially if it is forced to some ridiculous ordinances that produce caricatures of housing. They are then built as dollhouses. And bad dollhouses. In these cases it is thought that the "proportion" between the dimensions is enough. And we end up with ridiculous homothetic reductions of models that, with other dimensions, work perfectly. When a fork begins to shrink, to be reduced, a toothpick is preferable. It would seem that these laws, very widespread, have been dictated by and for jibaros. Man, the human body only shrinks in size in the coffin. And yet.

FORM

With the same dimensions and proportions, we can arrive at different shapes, with different spatial results.

If we consider a volume of 27 cubic meters of 3x3x3 meters, it will be very different to solve it spatially with the cubic, cylindrical or spherical shape.

In a cubic form, with sufficient distances for man to move in it, to be caught by him (3mx3mx3m are easy to imagine), the references are clear and immediate. A front-back,

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a right-left and an up-down are immediately understandable and relate to the physical constitution of man in his physical-optical grasp of space.

If we move to the cylindrical shape (3 m in diameter and 3 m in height), we will continue to understand the up-down but the front-back-right-left are merged into a continuum that the circle causes an optical-physical perception of man different from the previous one.

And if we move on to spherical space, the three possibilities up-down-forward-backward-right-left would be fused. But since gravity exists, the happiness of the progressive reasoning that was intended cannot be complete. And this leads us to the consideration that this factor, gravity, is an enormously important key in Architecture, and how important it is!

And the fact is that, in relation to these questions of measurement, gravity is always at the center of the quantification and qualification of these measurements. As is man himself.

FINAL

I have repeatedly written that Gravity is not only a question of transmission of loads to the earth, but mainly the structure deals with the establishment of the order of space. For this, the structures, far from being capricious and made "to feel", require a precise calculation, exact measurements. It is along the same lines that we want to defend in this text the need for precision, accuracy, control of measurements, proportion and scale, in the material setting up of Architecture. Measurement, precise measurement, is the basis of this magnificent game that is Architecture.

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