

BOXES, LITTLE BOXES, BIG BOXES

From stereotomic to tectonic

PUBLISHED IN

La Idea Construida. Ed. COAM. Madrid, 1996

A et A (Architettura et Ambiente) 1. Roma, 1997

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The French writer Colette Jauze wrote a generous text about my architecture under the nearly cacophonous title, "Cajas, cajitas, cajones" (Boxes, Little boxes, Big Boxes). And now I'm borrowing the words and image that, as she tells it, my comments about Lubetkin suggested to her. Lubetkin is the architect of Russian origin who constructed the elliptical ramp in the London Zoo for the English penguins. At the end of his life, when to his surprise he received the RIBA gold medal, he said that in fact he hadn't really done anything other than make shoe boxes in concrete. Well, it's the same for me. Only in my case, I am still very much at the beginning of my architectural life, making boxes, little boxes and big boxes.

REGARDING THE STEREOTOMIC AND THE TECTONIC

We could make an initial reading of these four projects in light of the concepts of the stereotomic and the tectonic in architecture. As if it were a photographic camera, we'll adjust the lens of our analysis with the aperture of the stereotomic and the shutter speed of the tectonic. Isn't architecture also a matter of determining light and distance in relation to man? These two terms, taken from Gottfried Semper by means of Kenneth Frampton, have been an effective instrument for me in elaborating a more precise architecture.

We understand as stereotomic that architecture in which gravity is transmitted continuously, in a continuous structural system in which the continuity of the construction is complete. It is massive, stony, weighty architecture, which sits on the earth as if it had been born from it. It is the architecture that seeks light, that perforates its walls so that light may enter. It is the architecture of the podium, the plinth and of the stylobate. It is, in short, the architecture of the cave.

We understand as tectonic that architecture in which gravity is transmitted discontinuously in a structural system with knots in which the construction is syncopated. It is boney, woody, light architecture, which settles on the earth as if standing on tiptoes. It is the architecture that defends itself from light, that has to veil its openings in order to control the light that inundates it. It is the architecture of the shell, of the abacus. It is, in short, the architecture of the cabin.

And so, in front of this camera with the Semper-Frampton lens, we turn to focus on a few projects.

The design of the Caja General de Granada (the Granada Savings and Loan building) is a large stereotomic box in which, in the maniera of the Pantheon of Rome, there is a determined continuity of vertical and horizontal walls.

What in the Pantheon is the grandiose dome, because of the constructive continuity of a material that can only work under compression, in Granada, is a linteled box, as a result of the possibility of a horizontality that a new material, steel, offers, and with it, reinforced concrete, capable of working in a linteled system of great structural lights. What is resolved “masterfully” in the Pantheon with the only system available at the time, the dome, is resolved “modernly” in Granada with the “linteled” system now available to us.

And while the Pantheon, logically, takes light at the height of its system through the divine oculus, the Caja de Granada perforates its linteled upper horizontal plane from which it must gather the light it needs in what we have called an “impluvium of light.”

Now that the light is trapped within the large stereotomic box of “golden concrete like rock,” another smaller, tectonic, box is situated diagonally. This box is constructed in fine steel and delicate glass and translucent alabaster to contain the functions of the program.

The stereotomic covering, taking in the tectonic.

Seen with this focus, the design of the C.D.E.R. offices of Mallorca is like the negative of the Caja de Granada design. The stereotomic here is the great plinth in travertine, the floor and thick surrounding walls, like a stone box that was opened to the sky. On it, delicately perched, is a light tectonic structure, with fine steel pillars and glass and a thin horizontal sheet of concrete as the ceiling that seems to float on top of them.

The stone box open to the sky, as if it were an inverted podium, rises over the lines of a isosceles rectangular triangle, measuring 100 meters on the side, with powerful three meter high stone walls. Inside, on a 6 x 6 meter plot, the 3-meter high steel pillars are planted on the first band parallel to the borders and support the roof of thin concrete that overhangs on both sides by two meters. Finally, it is glassed in, without carpentry, stressing the desired spatial continuity. The tectonic perches on top of the stereotomic.

While the Caja de Granada created a diagonal space crossed by diagonal light, the box in Mallorca proposes a horizontal space crossed by horizontal light in a precise operation of uninterrupted space.

The Philharmonic of Copenhagen is the translation of a different operation. Here the stereotomic base is a large carved, terraced rock that contains the different auditoriums to hear music inside. The stony, the weighty, the cave houses these halls that, more than light, need perfect insulation and precisely resolved acoustics. The large stone box in gray granite over a square plot of 80 x 80 meters is raised in successive platforms until it reaches a height of 20 meters. These planes on high offer a privileged vantage from which to contemplate the city’s landscape over the canal. And to protect itself from the extreme climate of the Danish capital, it is entirely covered with a tectonic box of steel and glass. The glass in the walls and also in the ceiling of this glass cabin-box allows all the cold light of those latitudes to enter. And in this way, a magnificent and protected belvedere is created.

Finally, the library of the University of Alicante presents another kind of operation. Here the stereotomic stone base, in light limestone, serves to contain all the book collections and the services of this large library. It is also terraced, as in Copenhagen, only there it was done towards the landscape, and here it is done towards the light from the north. The best light for reading. Over that stone plinth, a tectonic box with glass walls is created. And the measures are well fitted and the bases and roofs are staggered so that the distance of the desks from the light is right in each case. It could be said, this time in a more physical sense, that it is like creating a lens with the shutter open to the most appropriate position for reading. Functionally the building is organized with four boxes like the one described, with the 42 x 14 meters of the floor plan conveniently articulated.

BUT WHEN ALL IS SAID AND DONE, BOXES

But as I have entitled this text “Boxes, Little Boxes and Big Boxes,” rather than stereotomic and tectonic architectures, I am going to try to re-focus and explain these architectures by means of the simpler terms of boxes, little boxes and big boxes.

And thus, the Caja General de Granada is a big box put upside down, against the ground, as if trying to trap air within this heavy device, and then to perforate it so that solid light may enter, as in a trap. And since the dimensions, 72 x 72 x 36 m. are very large, four huge columns are placed in the center solving the gravity problem. This semi-cubical box, made up of a mesh of golden concrete of 3 x 3 x 3 m. as if it were a cage, is oriented diagonally in relation to the sun. And so it offers two faces to the south from whose light it protects itself using its perforations like a brise-soleil. Tucking its glazing inside. And in its other two faces to the north, it tightens its glass and stone façade to the exterior like a plenary over that reticule of concrete. The fifth façade, the roof, opens and closes its reticule as needed to trap the sunlight from high and fill the interior space with that solid light in what I have called the “impluvium of light”. This solid light stretching from high makes its movement palpable throughout the day in its intersection with the four large columns, measuring 33m. high and 3m. in diameter.

Inside, another glass box is situated that contains the functions. It is such that it leaves a central cubic void of 33 x 33 x 33 m. that takes in the light coming from high. When it opens to the northern façade, it is lit with the homogeneous and cold light of the north. When it opens to the southern façade, it takes the light that has been nuanced by the afore-mentioned brise-soleils. Since this area is larger, it needs more light and takes the solid light coming from above that is transformed into reflected light as it hits the white alabaster facing. All of this was studied minutely with the corresponding calculation tables, with results that have been proven to be positive.

In short, a box placed upside down towards the ground and full of light.

And what are the offices of the C.D.E.R. of Mallorca if not a big box put upside down? And it is also a box, this time in Roman travertine, open to the sky. The floor plan of a rectangular triangle corresponds to the lot's exact shape. Taking the right angle as a reference and over a 6x6 m. geometric plot, we created something like a forest of thin

pillars. A continuous ceiling rests over the first 6 m. band, a light and thin plane of concrete that overhangs 2 m. on each side, creating a form of set square, a covered space that, once glassed in without carpentry, will house the work spaces. The rest of the pillars are transformed into fragrant orange trees in a “courtyard of oranges” to which, because we are also going to plant grape vines and jasmines, as if it were a temple, turned with the gesture of the Greeks in the Acropolis, a meeting room appears with steps cut into the travertine floor. The sophisticated installations and facilities of this high technology center run through the basement.

In short, a big box put upside down, open to the sky and full of flowers.

And in the same way, the Philharmonic of Copenhagen is a powerful box of grey granite that is closed tight in order to contain the silent auditoriums where music is comfortably heard. And on top of it, on the rock, another box in transparent glass, so that, protected from the cold, one can contemplate the marvelous surrounding landscape. Like a belvedere.

And in a similar way, a glass box on top of a stone box, the Library of the University of Alicante. An elongated glass box open to the horizontal light of the north, with the exact dimension in depth in order to be able to read in perfect comfort. On top of another stone box, in this case the light limestone of the place, that contains the book collections. Since reading is bringing the wisdom contained within books to light.

Of course the designs of the Casa Turégano and Casa Gaspar houses were also boxes, tectonic boxes. The box of Casa Turégano contains a diagonal space tensed by diagonal light, and the Casa Gaspar a horizontal space tensed by horizontal light.

And we could continue in this manner or return to review all the projects. And for that reason, upon analyzing these buildings, one sees that one can speak perfectly well of boxes, little boxes and big boxes.