# INNER DIALOGUES WITH THE LIGHT

STORIES | PROTAGONISTS | PROJECTS

gruppo tecniche nuove

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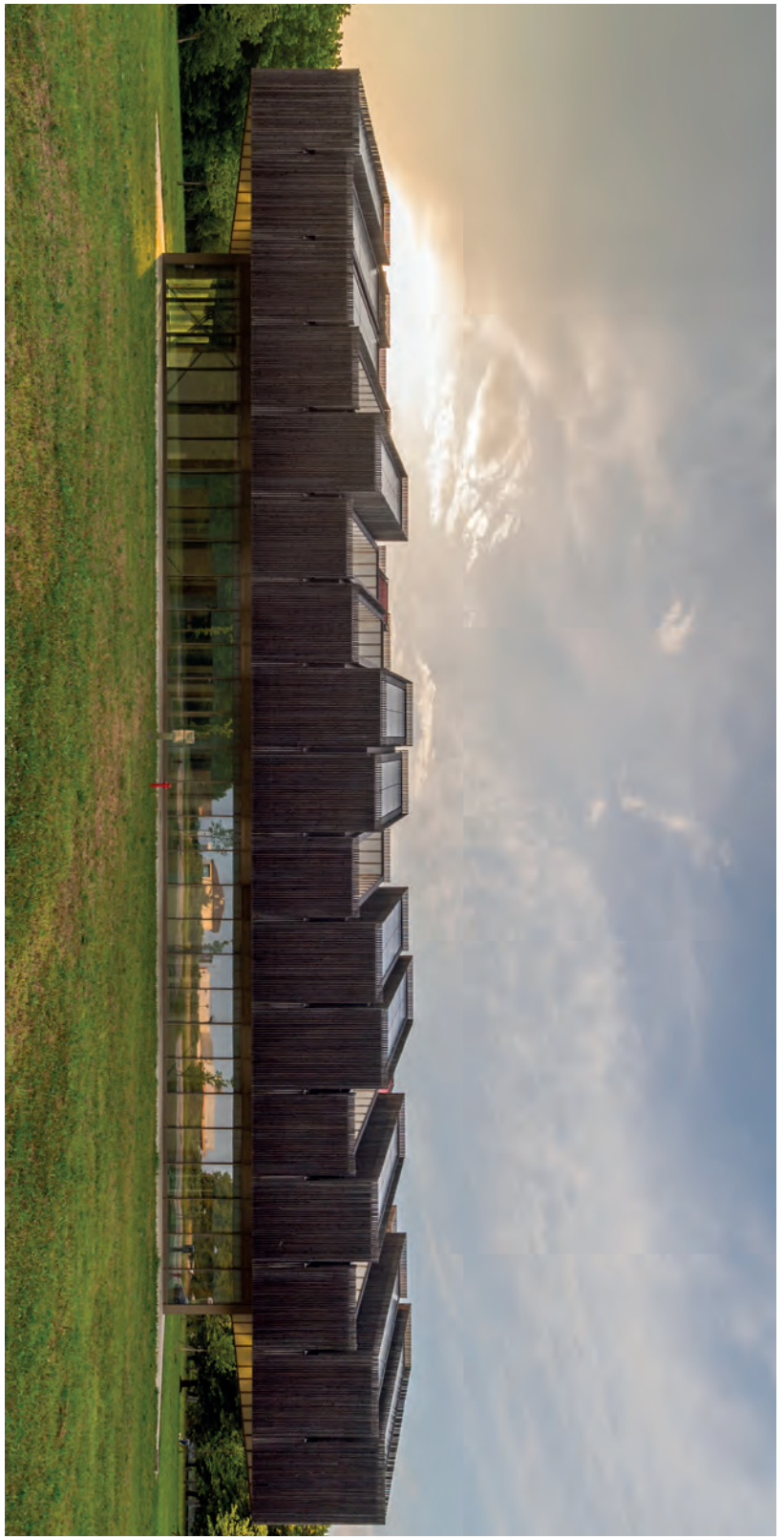
# Mario Cucinella
## IN DIALOGUE WITH MARCO IMPERADORI

We met Mario Cucinella in his Milan office on a beautiful spring day. The spaces of a former historic uniform factory have been converted into an architectural studio; the central light well radiates out onto all the operating floors where, in a three-dimensional open space, the community that works with Mario carries out its activities in harmonious silence. Models of the most iconic buildings and of various awards welcome the visitor on a beautiful sinuous metal table, while other models of ongoing designs (some top secret...) hang on the walls, along with boards, sketches and notes of current competitions. MCA (Mario Cucinella Architects) has two working floors, while the SOS (School of Sustainability) spaces are in the basement, which visually communicates with the large central void. The spatial Climax culminates in the terrace on the top floor, used for events and moments of relaxation. Mario welcomes us on the third floor, next to one of the models of the installation he is going to create for the Salone del Mobile 2022.

ARPAE headquarters ©Moreno Maggi



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**Who is Mario Cucinella?**

I was born in Palermo, I lived in Genoa and then in Paris and Bologna, and today I divide my time between Bologna and Milan. Who am I? An architect.

I carry within me the culture, the life but above all the light of all these cities, which is very different. In Paris I had my studio in Le Corbusier's Maison Plainex, on Rue Masséna, which has always been partially rented out to architects or artists. The light there is typically Nordic, colder and more diffuse, and in fact painters from those countries have always been struck by the Mediterranean light, which is further amplified in seaside towns that also benefit from the reflections generated by the water surface. Genoa gave me this light.

**How do you use natural light and can you consider it a "material" to be designed?**

You have to govern natural light, manipulate it. There are usually two main requirements for architecture: light and the quality of the air. Both are entities without depth, without mass, ethereal. So they need to be carefully controlled because they are defined by geometries and physical parameters of the built environment, not their own. The objective is clearly user comfort.

In the ARPAE building in Ferrara (2016), light is literally "captured" and, in so doing, shapes the building itself, whose main façade is the roof, made up of a dense series of solar collectors. It is a volumetric light, where the "chimneys" are lined internally with wood to "warm up" the colour spectrum and soften, diffuse indoor luminosity.

So I created a geometric environment starting with light and natural ventilation and arriving at the form inductively, not the other way around.

Architecture is life and light and air are life.

When the quality of these two entities is poor in an environment, we immediately realise this and suffer. In ARPAE, zenithal light is the protagonist and is filtered, interpreted... transformed.

**As a designer do you handle a daylight design phase? How do you manage the relationship between the outside and the inside, and therefore the quality, intensity and effects of light?**

The daylight design is done in-house at MCA. We used to use artificial skies and reduced physical models because of the scalability of the phenomenon. Analysing architecture and its light using models is a form of learning. All the values of the visual spectrum are quantified and interpreted. Today we use Radiance, we calculate daylight factor, illuminance, glare and so on.

Once, in a competition in France, the client asked for an average of 300 lux of natural light in the call to tender. It is clear that this request has a major influence, a priori, on morphological choices. You have to be quantitative to achieve the required level, but this has repercussions on the very quality of the plastic-compositional choice.

**How do you aesthetically visualise light, through virtual models or through intuition?**

In the Church of Santa Maria Goretti in Mormanno (2021), for example, I started from the observation of the chapel of San Carlino alle Quattro Fontane by Borromini in Rome. Although it is small, it is characterised by a magical, round, enveloping light. I therefore imagined a central plan because my building was also small, little more than a chapel at a

La Balena Nursery ©Moreno Maggi

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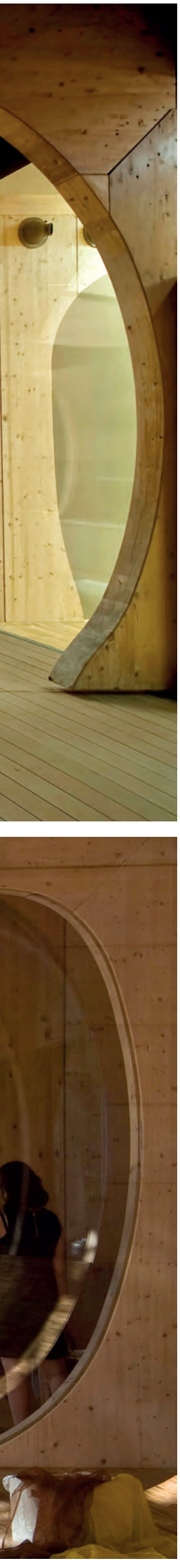

closer look, and I added a “baroque” sinuosity to the walls. In a religious space, the effect of light should not be domestic but ritualistic, mystical. The velarium is also a kind of baroque drape that literally captures the sun’s rays from the zenithal openings. These are made of “solid”, powerful light, and the velarium softens, diffuses and conducts it into space. The result is a more fluid, almost ‘gaseous’, ascetic light. This effect is also a tribute to the very purity of St. Maria Goretti’s vocation, which is embodied in the purity of this veil of light.

**How do you bring the outside into the inside of your architecture?**

The in/out relationship is always strongly symbiotic. In the case of the Guastalla nursery (2015) school, the relationship is with the surrounding nature because the transparency of the shell and the rhythm of the plywood portals are in fact a filter towards it. At the same time, however, I am looking for a dialogue with what is outside, which is not a hostile space from which to defend oneself.

Over time this relationship has been lost, and a lot of contemporary architecture creates environments that are alienated (and alienating...) from the external context.

For me the building should not be a perimeter but a diaphragm capable of relating by “osmosis” with a wider space.

In the Guastalla nursery school, for example, the space, the sinuosity of the portals, the tactile aspect of the materials, but also the greenery outside, are certainly pedagogical: inside I have protection, outside I have nature of which I am part.

In the Unipol Tower in Milan, currently being completed, the relationship with the outside is with the artifice, the city. The uniqueness lies in having created an enormous 17-floor tall cavity that acts as a ventilation chimney in summer, while in winter the space accumulates sunlight, acting like an immense bioclimatic greenhouse. This enormous chimney-pool of light also acts as a buffer between the open and “breathing” space and the physical position of the people working there, who are not directly hit by the sun’s rays because they are “filtered” by the structural elements and the various components of the façade.

The ethereal and transparent dimension has also been defined by an innovative design process (which is also ethereal) thanks to innovative Building Information Modeling (BIM) methods, also developed in synergy with the company (CMB in this case) and the various consultants and players in the entire process. In fact, this tower is a “phygital” building where the physical and digital portions dialogue in the various phases of the project and in the future in its management.

**SOS, School of Sustainability, is an important training and research academy. How do you approach the topic of natural light design?**

Light design is one of the cornerstones of SOS. Artificial light too, because the light fittings are physical entities that are clearly visible in daylight and not negligible in the internal spatial composition. Part of the work these people do is to quantify the design of air and light quality, and for us the concept of porosity in architecture is very important. They learn real tools and take home some “tricks of the trade”. For my studio it is a pleasure to interact with these young people because this is not the time to close ourselves off but to open up and share.

UNIPOL Group Headquarters ©Engram Studio

**We conclude with TECLA, the 3D-printed house resulting from the collaboration between MCA and WASP. Can we talk about a pure synthesis of matter and light?**

TECLA (2021) is an experiment that combines an ancient construction material such as earth with highly advanced production methods such as the 3D printer and digital processes. We have therefore combined a material having a very long construction tradition with an extremely contemporary digital technology. However, the dome morphology and the use of fluid moulding posed a physical, static limitation imposed by the force of gravity: the closing of the vault.

Hence the positioning of the zenithal skylight, which is equipped with a ventilation grille and sunshades. The external zenithal light is in fact “solid” and concentrated, intense, but its permeation from above is diffused into the canopy which enhances and highlights the mottled texture generated by the various layers of moulding. The mass, which has a profound physical-technical sense and provides thermal inertia, is not perforated except at the entrance and in the top oculi, and ultimately dialogues with the energetic immateriality of light and its effects. In the bedroom one has the feeling of sleeping under the stars, a reminiscence.

In this sort of miniature “Pantheon 4.0”, which leads us to reflect on the past in order to interpret the present and the future, the zenithal light, day and night, is truly magical.

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