Graduate Biologist, Undergraduate Architect

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Submitted by Edlyn García La Torre [2] on 2 April 2014 - 8:05am

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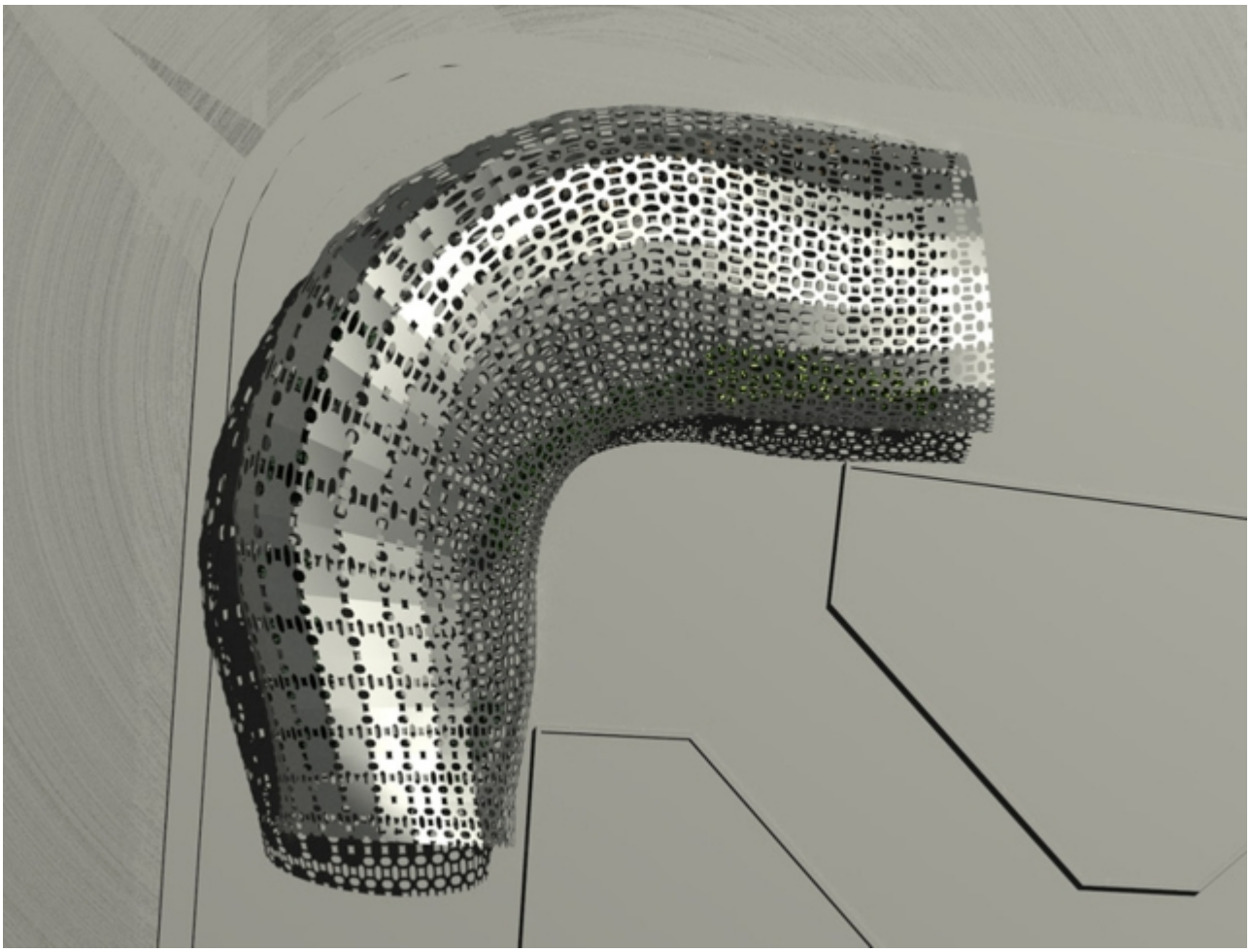

Structure to cover a garden

We are pleased to share with you a guest essay by **Glorimar Irizarry Delgado**, architecture student at the Pontificia Universidad Católica de Puerto Rico

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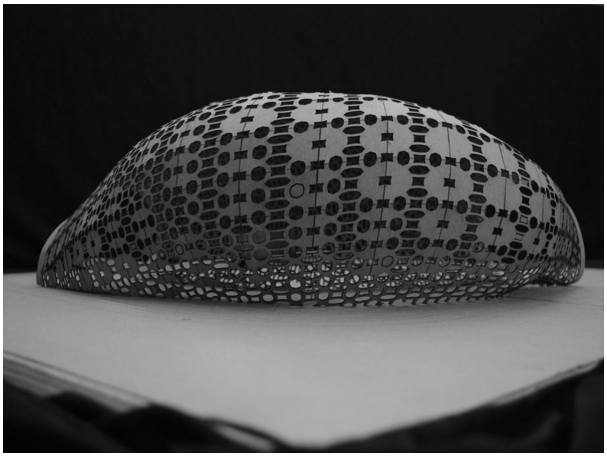
“A scientist must take the liberty to raise any question, to doubt any assertion, to correct errors” – J.R. Oppenheimer

There is much of a scientist in the resolution of design and architecture. As with the scientific method that is emphasized at the baseline of any field in science, it all begins with a question. From this, a series of steps leading to its response is triggered. This research method that proposes science to obtain answers consists of (1) a problem, (2) a hypothesis or possible solution, (3) a prediction, (4) repeated experimentation until (5) obtain and analyze information to (6) prove or disprove the hypothesis. Most of the predictions made in this method are guesses of causality that through experimentation we prove or disprove in order to correct. It is a process that, implicitly, I travel constantly during the design process, adapting to a new background.

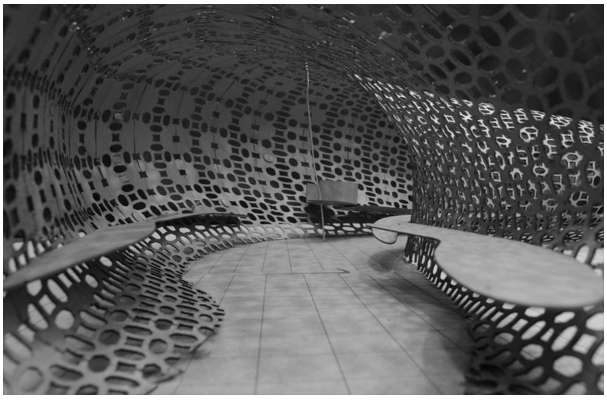
The designer proposes solutions to problems of different scales, micro / individual and macro / collective, based on existing models. The design is a cyclical process involving steps of the Scientific Method, though lacking formal structured methodology and assumptions; they can be used in the same way. In this creative development there is a constant reasoning, or investigative thinking where every problem that arises as part of the process leads to a solution that probably generates a new question. As in science, ideas are being reformulated and improved.



The architecture also seeks to rethink and improve to adapt to the changing world. For this, knowledge of a multiplicity of fields necessary. For example, the rate of population growth and lack of land in some parts of the world suggest a need for vertical growth in order to save the little land available and put at the service of nature. This vertical growth has led to the development of mega structures that can only be possible through an understanding of the physical sciences to foster the foundation for the development of methodologies and systems for this type of building structures. These respond to the new needs of vertical and lateral loads of buildings such as the BurjKhalifa, the tallest skyscraper in the world with a maximum height of 828 meters.

“Having studied biology gives me sensitivity toward the natural environment which is essential”

Another need to which contemporary architecture must adapt is the problem of climate change that results from the exploitation and misuse of resources of planet Earth. As architects, we have great responsibility in our hands to minimize the carbon footprint left by the human being, much of which has been the product of large-scale constructions. A biologist does not only have an idea of the damage and how it affects various biological systems, but to also understand that the parameters of their ecology can protect and promote their survival. Having studied biology confers in me a sensitivity to the natural environment that is essential for consistent and will always be introduced as a pattern in the development of my designs at a large, medium and small scale. An understanding of the principle theories of Gaia, which presents the idea of the Earth as the oldest, largest and complex living being, promote the empathetic thinking and consequently the development of critical thinking at the time of design.



Nature is resilient, and is constantly evolving to find its balance. Everything that makes up an ecosystem co-evolves and interacts for growth and prosperity. The contemporary architect should consider the idea of imitating our environment or at least consider the impact we have on it to minimize it. The ideal would be to establish a symbiosis, a dual relationship between artificial space or "architecture" vs. natural space, where each other react positively. A quote from E. W. Sinnott inspires the idea that our buildings could interact with the environment.

“The specific form of a plant or animal is determined not only by the genes in the organism and the cytoplasmic activities that these direct but by the interactions between genetic constitution and environment. A given gene does not control a specific trait, but a specific reaction to a specific environment.” – E.W. Sinnott

To ask me how science has affected me as a student of architecture is a question whose answer encourages hours of discussion, however I conclude this editorial with the following response; to reduce my scientific knowledge to a conceptualized method would be underestimating the wealth of that knowledge. Not to rule out the method and I am aware of its force and effect, but it's the same knowledge about science that serves as my guide for design. I continue thinking like a biologist but the idea is reinterpreted, is contextualized and adapted to a situation that involves the interaction of the living, the inert and the artificial. If the architect is able to project and imagine what does not exist, with some additional information about your environment can also deal more responsible their impact on the natural environment.

Proposal of technology of construction reusing solid waste [3] by Glorimar Irizarry

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We would like to thank Glorimar Irizarry Delgado for this contribution. Born in Ponce in 1988, achieved his Bachelor of Biology from the University of Puerto Rico in Mayagüez in 2011. Glorimar also has excelled as filmmaker and even coordinates “Cine Urbano”, a monthly cultural event that promotes the use of public spaces in Ponce as areas of cinema. Glorimar currently attends the fourth year of Bachelor of Architecture at the School of Architecture of the Pontifical Catholic University of Puerto Rico.

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