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"Biomanufacturing the future: 'Let life grow!' manifesto"

Alberto T. Estévez

Natural Intelligence and Artificial Intelligence, Bio-learning and Machine-learning, Bio-manufacturing and Digital-manufacturing, keywords that shape the cloud of BioDigital, of the step-by-step fusion of biological and digital, which must provide us with the architecture and design for a better future for our planet: perhaps the only future for living with dignity.

The urgency that we have been enunciating since 2000, which includes the application of genetics (biological and digital) also to architecture and design, now, 20 years later and under the COVID 19 pandemic, is more evident. Due to the consequences of two months of confinement and the entire world paralyzed and locked up at home, everyone has finally seen the obvious of the matter: a drastic reduction in air pollution, an ozone hole that closes, a nature that has resurfaced like never before. Simply because of human absence, and something as trivial as the fact that no one cuts the grass. Proving that nature is the most resilient thing that we have on our hands.

Parks, sideways, cracks, places where nature was never allowed to grow so much. For the first time now, a whole series of plants, flowers and animals appear in areas never seen before. And recognizing nature's capacity for regeneration, and how it brings us the solution to our problems, the action "Let life grow!" appears: as a manifesto, words written on traffic signs forbidding the mower, placed in every corner of the planet.

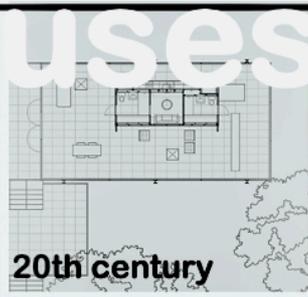
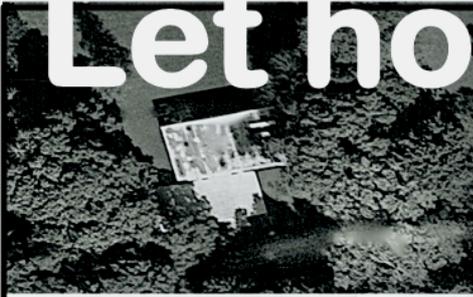
We just have to let nature do its work for us. Nature is the solution. Natural intelligence as a lighthouse of artificial intelligence. Learn from nature first, bio-learning, then helped by the advantages of machine-learning. And biomanufacturing, much more effective than digital-manufacturing, looking for a perfect symbiosis of both. We should not follow the easy way just for comfort. Because at the end, it is much better, faster and cheaper to discover the secret laws of the universe for biomanufacturing the future.

Now it is only a question of will, of funds, of research dedication, in this order. In inverse proportion to the time required to achieve results. We can already think about their application in objects of use, walls and ceilings that grow alone in houses, buildings, cities, parks and landscapes, entire territories, even planets, that emerge, that develop powered by the mere internal force of their DNA. Entire worlds, genetically designed to solve human needs. Nearby, orbiting around the Earth. Or small microcosms, as big as a patio, or as an entire city. Without the need to go to distant and inhospitable planets with an uncertain future.

Let houses grow! Let buildings grow! Let cities grow! Let planets grow! Let life grow!

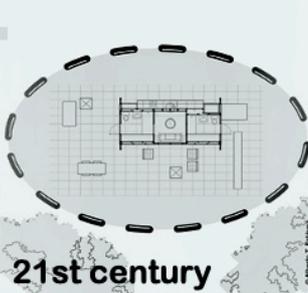
*Barcelona, 04.06.2020, 20 h.
(...in the 20 years, the 2020, which add up to 60.)*

Let houses grow!



20th century

Farnsworth house, 1946-1951



21st century

Sporopollenin house, 2009-2051

Let buildings grow!

Let houses grow!



Let cities grow!



Ruins of the future, housing structure (Cuba), 2009-2010

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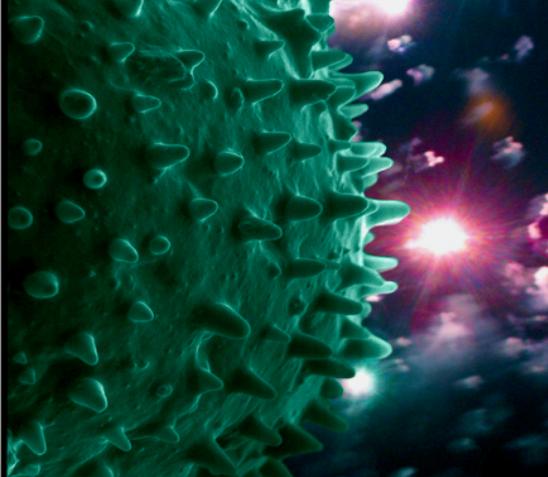
Let planets grow!

Strange planet, planet (Solar system), 2010



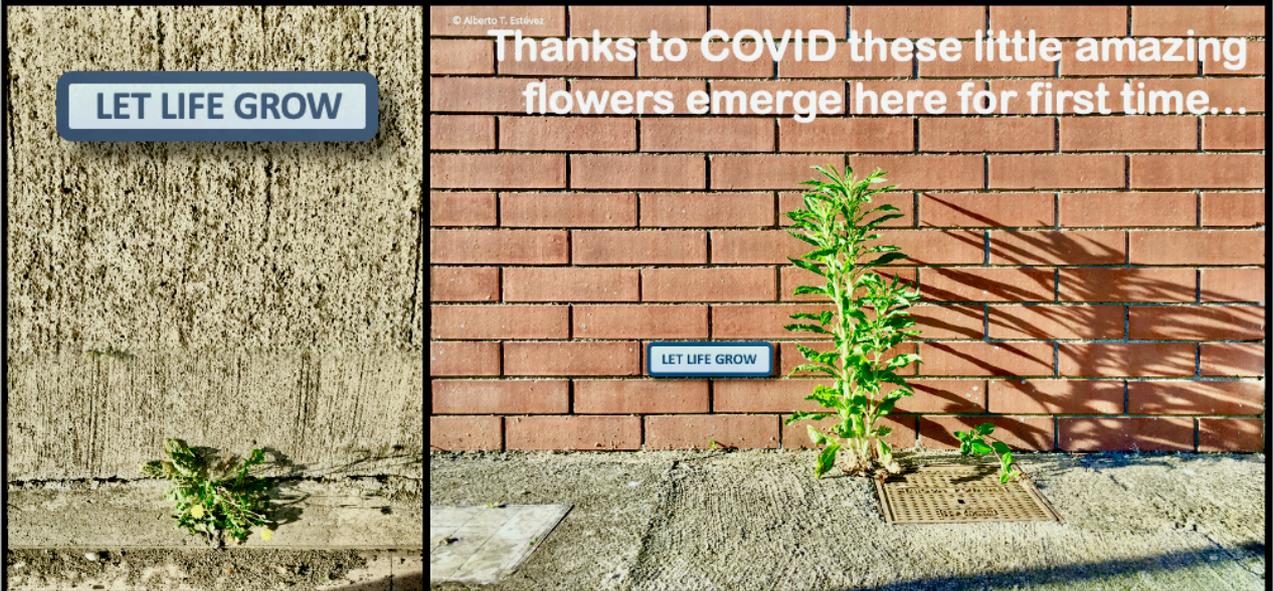
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Built island, Garraf (Barcelona), 2009-2010



Genetic research on growth control, which makes live cells grow for architectural material and habitable spaces.

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Action "Let life grow!", Barcelona, 2020

Alberto T. Estévez, *Action "Let life grow!", Barcelona, 2020*: thanks to COVID these little amazing flowers emerge here for first time...