

Construction Innovation: Support for 3D Printing House

Authors : Andrea Palazzo, Daniel Macek, Veronika Malinova

Abstract : Contour processing is the new technology challenge for architects and construction companies. The many advantages it promises make it one of the most interesting solutions for construction in terms of automation of building processes. The technology for 3D printing houses offers many application possibilities, from low-cost construction, to being considered by NASA for visionary projects as a good solution for building settlements on other planets. Another very important point is that clients, as architects, will no longer have many limits in design concerning ideas and creativity. The prices for real estate are constantly increasing and the lack of availability of construction materials as well as the speculation that has been created around it in 2021 is bringing prices to such a level that in the future real estate developers risk not being able to find customers for these ultra-expensive homes. Hence, this paper starts with the introduction of 3D printing, which now has the potential to gain an important position in the market, becoming a valid alternative to the classic construction process. This technology is not only beneficial from an economic point of view but it is also a great opportunity to have an impact on the environment by reducing CO2 emissions. Further on in the article we will also understand if, after the COP 26 (2021 United Nations Climate Change Conference), world governments could also push towards building technologies that reduce the waste materials that are needed to be disposed of and at the same time reduce emissions with the contribution of governmental funds. This paper will give us insight on the multiple benefits of 3D printing and emphasise the importance of finding new solutions for materials that can be used by the printer. Therefore, based on the type of material, it will be possible to understand the compatibility with current regulations and how the authorities will be inclined to support this technology. This will help to enable the rise and development of this technology in Europe and in the rest of the world on actual housing projects and not only on prototypes.

Keywords : additive manufacturing, contour crafting, development, new regulation, printing material

Conference Title : ICTDCPSH 2022 : International Conference on Three-Dimensional Construction Printing and Sustainable Houses

Conference Location : Amsterdam, Netherlands

Conference Dates : December 02-03, 2022