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**THE EXPERIENCE OF THE CHINESE CONSTRUCTION INDUSTRY
IN THE IMPLEMENTATION OF THE 3D CONSTRUCTIONS PRINTERS****M. GUONA****(Presented by: A. Yagubkin)**

In recent years, 3D printing technology has been widely used in machinery manufacturing, aviation, medical and other fields, and has gradually expanded to the construction field. 3D printing technology can effectively solve the problems of manual work, large amount of formwork, and difficult realization of complex shapes in traditional building construction, and has significant advantages in personalized architectural design and intelligent construction.

With the development of the third industrial revolution [1-2], science and technology play an increasingly important role in the process of promoting the development of productive forces, accelerating the transformation of science and technology into direct productive forces. While promoting the interpenetration among various disciplines, scientific research is also constantly developing in a comprehensive direction. 3D printing technology, which integrates mathematics, information, machinery, materials and chemistry [3], as a new type of rapid prototyping technology, has become one of the important technical symbols in the third industrial revolution. The development of manufacturing industry plays an important role. With the increasing improvement of 3D printing technology, the technology has been involved in various fields such as medical [4], automobile [5], construction [6], military industry [7], etc., and has shown its huge productivity and unlimited potential. The emergence of 3D printing technology in the construction industry has demonstrated its superiority in terms of labor, construction period, and resource utilization [8-10], making rapid manufacturing and industrialized production of future buildings possible, and even mass customization of personalized products. Construction, which will inevitably lead to a technological innovation in the construction industry [11-13]. As a new building construction technology [14], 3D architectural printing has innovated the traditional construction methods. While showing its huge production potential, it also inevitably puts forward new requirements for building materials.

3D printing is mainly based on the data model file [15-17]. After the modeling is completed on the computer, the material is extruded through the printer nozzle, and the material is added layer by layer to complete the printing and manufacturing technology of the three-dimensional object. Additive manufacturing. The realization of its technology [18-19] mainly includes 3D modeling, slice processing, printing and spraying and post-processing. It includes various technical knowledge such as three-dimensional modeling, process control, materials, information processing, etc., and there are various printing methods, such as: layered entity manufacturing (LOM) [20-21], selective laser Melting molding (SLM) [22-23], fused deposition (FDM) [24-25], etc. 3D architectural printing is controlled by computer, using large-scale mechanical extrusion equipment, and spraying construction materials layer by layer to construct architectural entities. Compared with the printing of other objects, there is not much difference in principle, but the printing materials used are different, and the printed entities are relatively large. The application of 3D printing in the field of building construction enables us to have higher precision in the construction of some complex-structured building equipment and greater flexibility in choosing the structural form of the building [26].

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1. 3D printing houses.
2. 3D printing bridge main structure and auxiliary components.
3. 3D printing public facilities.
4. 3D printing large landscape components.
5. 3D printing decoration envelope.
6. 3D printing special-shaped sketch components.
7. 3D printing epidemic prevention shelter [27].

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