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Build a 3D home? Florida could be a prime market to click 'print' | Opinion

As building material prices spike to impact Florida's new housing construction, a new form of construction looms as a potential avenue for ensuring home buyers have access to the new homes they need — and can afford.

From Florida to California, 3D-printed homes and communities are being constructed as proof-of-concept residences to demonstrate the alternative construction capabilities.

In Riverhead, N.Y., a two-bedroom, two-bath printed home has been listed through Zillow at \$299,999 and at one point was the most-viewed home on the internet. Start-up companies and developers eager to disrupt the industry envision a community in a desert landscape near Palm Springs, where they anticipate building what they call the nation's first neighborhood of 3D-printed houses.

In a first for Mexico, a 3D-printed neighborhood is emerging for families who live on as little as \$3 a day.

Not surprisingly, these companies have their eyes on Florida as a prime target for 3D-printed neighborhoods of the future. As the nation's third-most populous state and one of the fastest growing in the country, Florida is a preferred landing spot for this emerging technology. In July, the first 3D-printed home began construction in Tallahassee. The three-bedroom, two-bathroom house is expected to be sold for between \$175,000 and \$200,000.

Additionally, the speed and ease of the 3D printed homes could be useful in rapid rebuilding campaigns as a result of hurricanes or other natural disasters. To be sure, the economic benefits of 3-D printed homes are enticing.

An added benefit of 3D-printed homes is the cost. The companies developing and building 3D homes assert the cost of building a home can be cut by anywhere from 30% to 40% versus traditional construction methods. Interiors and exteriors can be printed between 12 and 24 hours; labor costs are also reduced as fewer workers are required. Overall, concrete printing slashes production time from months to days and streamlines the construction process.

Yet, the law must catch-up.

Building a 3D-printed home is quite different from the standard methods of construction. The Florida Building Code and the real estate industry must take this fact into account.

During the 3D process of the current and most prevalent method, concrete and various additives are premixed, to be laid in a foundation pattern that would be similar to toothpaste coming out of a tube. The mix then hardens into a concrete structure.

In one current prototype, the 3D printer is an oversized, movable printer, ranging anywhere from 10 X 10 feet to 100 x 100 feet in size, sitting in the middle of the construction site, fabricating concrete walls and the roof from within. In another prototype, the printer is on a metal scaffold over the construction site and moves in a two-dimensional square printing the structural walls.

Miami Herald

The process is straightforward; it is already being used to build smaller structures such as barbecues and fountains.

However, to be a truly viable construction alternative in Florida, it must have the static strength to withstand hurricanes as required by the Florida Building Code or must evolve to be poured with rebar structures similar to current construction methods.

To this end, the entities seeking approval for building 3D-printed homes in Florida, the Florida Building Commission and the real estate industry all need to understand the process and work to implement relevant codes, guidelines and rules for approval of this process. Additionally, to have meaningful regulations for this technology, attorneys will have to understand the additive and printing process.

Like any other new construction process, the promise of better and cheaper construction will need to be weighed against the risk of construction defects or other construction methods that may be cheaper but easier to implement, such as prefabricated houses that are created offsite but installed onsite.

Although still in the prototype stages as an emerging technology, 3D-printed homebuilding feels like an inevitability as the process becomes more advanced, easier, cheaper, stronger and more consistent. The creativity and ingenuity of these start-up companies will eventually stake a claim in the home-building process.

However, it will be up to professionals in the private and public sectors to ensure home buyers will gain not only from the homes' price benefits but benefit from the oversight of the process to ensure the safety and efficiency of the 3D printed homes.

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