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Rooftop Pools To Make Your Head Swim

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Even in the world of luxury [real estate](#), there's an amenity reserved for the highest of high-end residences: the rooftop swimming pool.

For the fortunate few who can indulge in luxury homes and favor a swim hundreds of feet in the air, good news. Thanks to engineering advances and increasingly demanding consumers, rooftop and balcony pools are proliferating. And the newest pools are fancier than ever.

What's behind the demand? Some buyers want the rooftop pool for exercise. Some just want to show off to guests. Either way, these pools add an air of serenity to big-city living. But constructing an elevated pool, especially one over a livable area, remains a challenge for designers and engineers — albeit an intriguing one. I say so because I've recently seen the technical side up close. My colleagues and I are developing a building in Miami, called Brickell Flatiron, with an open-air [pool](#) on its 700-foot roof.

First, the building structure must support the weight of a pool. After all, water is very heavy. A single cubic foot contains 7.48 gallons and weighs more than 62 pounds. So just the water alone in a standard lap pool — in feet, figure 75 long, 15 wide and four deep — weighs nearly 281,000 pounds. The pool must be shaped in a way that evenly transfers the weight of the water to the supporting walls and columns. The pool vessel can then be placed within what engineers call a ring truss, keeping the building top well-connected. A series of steel posts carry the load of the pool onto the level below.

[Next](#) comes the decision of what material to use for the pool vessel itself. The proper material must be selected so as not to cause leaks. Concrete, for the pool in your backyard, is prone to cracking and not a wise choice. Perhaps it's good enough when you're building over a parking garage — but not when there are people living below.

