

How Composites Are Shaping Modern Architecture

When you hear the word 'composites', what is the first thing that comes to mind? Most of us are familiar with things like composite golf clubs and tennis rackets. We are familiar with consumer goods like carbon fiber sunglasses and cell phone cases. What many do not realize is that composite materials are all around us. They reach much further than high-end consumer and sporting goods.

Composites have been used in architecture for as long as most of us can remember. Indeed, concrete is a composite material. So is plywood. Even that manufactured wood floor in your home is a composite floor. Having said that, most references to composites in the modern era relate to things like fiberglass and carbon fiber. According to Rock West Composites in Salt Lake City, these are the composites that drive modern architecture.

Composites in Infrastructure

For the remainder of this post, the composites we are referring to are materials like carbon fiber, glass fiber, Kevlar, materials made with carbon nanotubes, and so forth. Such materials are becoming more popular for infrastructure needs. For example, consider bridges and overpasses.

Steel and concrete are primary building materials for such structures. As good as the two materials are, they do have their limits. Steel degrades over time and eventually needs replacement. Concrete withstands a lot of punishment, but wind and water do a number on it. Enter composites.

Architects and engineers have discovered that certain composite materials are ideal for building bridge columns. Composites offer superior strength and rigidity. They are also weather resistant. Support columns that carry bridges over the water are ideal candidates for composites because water will not bother the materials.

Composites are also used for building bridge spans. Support beams that carry most of the load are as strong as they can be and yet flexible enough to withstand wind and wave. And again, spans made of composite materials are not bothered by moisture.

Composites in Residential Construction

We do not see a whole lot of composites in residential construction right now, primarily because of their cost. But as prices come down, adoption increases. We are starting to see carbon fiber and fiberglass being used as structural elements for residential housing, and such materials are replacing wood and steel.

Carbon fiber has begun popping up as a stronger material for window frames and doors. Carbon fiber and fiberglass roofing materials, while not the norm, are also starting to find their way to market. Architects are looking to composites to create more energy-efficient homes that stand up to the elements better than traditional materials.

Composites in Commercial Construction

Perhaps the most visible examples of architectural composites are observed in commercial construction. The architects of the 21st century are no longer content to design square or rectangular boxes that rise into the sky like so many unoriginal towers. They want sleek, modern, space-age buildings that redefine what architecture should look like.

Curiously enough, their space-age designs often start with traditional skeletons designed as tried-and-true squares or rectangles. The skeletons are concealed by facades that can take on any number of shapes. Composites are what make the facades possible. Advances in composite fabricating now make it possible to design a building that takes on just about any conceivable shape.

This post has just scratched the surface of composites in modern architecture. If your curiosity has been piqued, take a good look around. You will see composites all over your town if you're willing to look for them. From coast-to-coast and across the seas, architects have fallen in love with composite materials. You can see it in their designs.

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