



Alyssa-Amor Gibbons

Lives: In Saint George, Barbados.

Occupation: Architectural designer.

Education: Master of engineering, MEng, Structural Engineering and Architecture (Dual Hons).

Works: At own design business and Spinnaker Group.

Other activities: Leads FutureCITY project, a smart city initiative.

Left:

Alyssa-Amor Gibbons uses ancient techniques in her designs to withstand tropical storms and hurricane threats.

BUILDING ON PAST LESSONS

Storms, floods, landslides and heat waves – the challenge of climate change calls for buildings that can withstand a new reality. In Barbados, architectural designer Alyssa-Amor Gibbons is convinced that part of the solution can come from time-tested techniques.

TEXT DANIEL DASEY PHOTOS STEPHAN TYREL

We live in a world where extreme weather events are becoming more common. According to the World Meteorological Society, the number of natural disasters due to extreme weather has grown fivefold over the past 50 years, with climate change as the leading driver. To help manage this evolving threat, the world needs dwellings and buildings that can cope with severe storms, flooding, landslides and extreme heat. Many architects are looking to modern materials and techniques to provide solutions, while others are taking lessons from architecture's past – with promising results.

In the Caribbean country of Barbados, architectural designer Alyssa-Amor Gibbons is a strong advocate for borrowing from endemic (traditional, local) built

forms to address climate change challenges. With her home country subject to increasingly wild tropical storms and hurricane threats, she says the old ways of managing high winds and driven rain have never been more relevant.

“If you look at many of the designs from the past, there's this built-in ingenuity,” she says. “People built homes that, for security's sake, could be packed up and moved at a moment's notice. But at the same time, they were resilient enough to withstand extremely bad weather. So, referencing indigenous, or endemic, designs just makes sense.”

Gibbons says some examples of traditional approaches that are relevant in the era of extreme weather are shutters that reduce the pressure on building facades by allowing air to pass through buildings, and roof shapes that reduce





PHOTO: ALYSSA-AMOR GIBBON



Left:
Houses with jalousies designed by Alyssa-Amor Gibbons. In Barbados, integrating practical solutions like jalousie windows with aesthetic designs can help a home withstand harsh conditions.



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Alyssa-Amor Gibbons

the surface area exposed to high winds. These traditional ways of dealing with moisture and dispersing extreme heat also have modern applications.

Gibbons recently shared her enthusiasm for this approach in a TED Talk, attracting interest not only from people in tropical climates but also from those in more temperate areas where violent storms are increasingly becoming the norm.

“As time goes on, I think the precedent that we’re setting here with these designs will become relevant in other countries as they experience similar extreme conditions,” she says.

Gibbons, who runs her own design practice and also works as a sustainability adviser, says her childhood growing up in Barbados shaped her approach to design. Her home country lies in Hurricane Alley, a stretch of warm ocean heavily prone to hurricanes between northern Africa and Central America’s east coast.

“As a child, I knew that summer meant both school break and hurricane season,” she says. “You would go out to the hardware store, buy plywood and duct tape, and then duct tape up your windows. You get your batteries; you make sure you have a kerosene lamp in case the electricity goes off.

And you hear and feel the house reverberating as the hurricane systems pass. For me at least, it was terrifying.”

When she graduated with a master’s degree in engineering, Gibbons wanted to honor the strong survival skills of the early inhabitants of Barbados and began studying traditional architectural features with potential modern applications.

An example of one of these features from the past relevant in this era of climate change is the jalousie window, a wooden shutter with horizontal slats sloping down to the exterior. “One purpose of the shutter was to keep peering eyes from seeing into your home,” Gibbons says in her TED talk. “But the shutters also allowed the wind to filter through while keeping rain out. The apertures would permit you to open all the slats on the windows and doors to let a hurricane pass through, channeling that wind through the building’s interior instead of building up destructive pressure on the facade.”

Incorporating features modeled on jalousie windows in a modern house can create better resilience to violent storms while also helping to control internal temperatures and occupant comfort.

“If you look at things like the shape of a roof, a lot of older houses had high-pitched gable roofs, which deflected wind up and over them, helping them to survive strong winds. They also had deep verandas to keep the sun off the porch and to control how the wind moves around the space, creating a breeze.”

Gibbons says each project she

Below:

The traditional jalousie window lets the strong winds pass through instead of building intense pressure on the facade.



PHOTO: ALYSSA-AMOR GIBBONS

Extreme weather the new norm

The nature of weather on our planet is rapidly evolving as global temperatures continue to rise. At the time of writing, 2023 was expected to be the hottest year globally since records began, with July 2023 the hottest month on record. These higher temperatures are, in turn, driving extreme weather events, such as more intense heat waves and longer and broader wildfires. As ocean temperatures rise, warmer water is fueling more intense hurricanes, while droughts are becoming more persistent in some areas. The buildings that architects and designers create today need to be able to address these changes as well as others, including higher rainfall and rising sea levels.



works on is unique. She examines the site, looks at traditional and modern solutions and materials, and discusses options with the client.

Some of Gibbon's past projects include works on post-disaster redevelopment of residential and commercial properties in the Caribbean, such as Secret Bay, Dominica, as well as a social innovation mixed-used project at TEN Habitat in Barbados. In her latest prospective project – the adaptive reuse of an iconic building in the capital city of Bridgetown, Barbados.

While her ideas on endemic design have generally been well received, she says there remains a stubborn belief in some sectors that buildings in Barbados should function like those in Stockholm in Sweden or New York in the US.

“Not everyone lives in the same climate,” she says. “A lot of successful architecture from parts of the world other than Barbados has an emphasis on keeping the building cold and keeping moisture out, because that’s important in those climates. But trying to do that in a tropical climate is unnecessary and often doesn’t work. We don’t have to close nature out in the way that other places might need to, and we need to design accordingly.”

Gibbons encourages building designers across the planet to take a close look at traditional designs when solving design challenges. “Just because something is usually done a particular way doesn’t mean it’s the best way. There’s often endemic design that has survived decades, maybe even centuries. That should be your starting point.” ■

Above: Alyssa-Amor Gibbons at the Builders of Barbados Wall in the Golden Square Freedom Park in Bridgetown, which was inaugurated in 2021.

Endemic design

Endemic design refers to a design approach or philosophy considering the local or regional context, culture, and environment when creating products, buildings, or solutions. It aims to create designs that are uniquely suited to a specific geographic location or cultural setting. The term “endemic” typically refers to something native or specific to a particular area, so endemic design seeks to incorporate and celebrate the local identity, materials, and traditions.