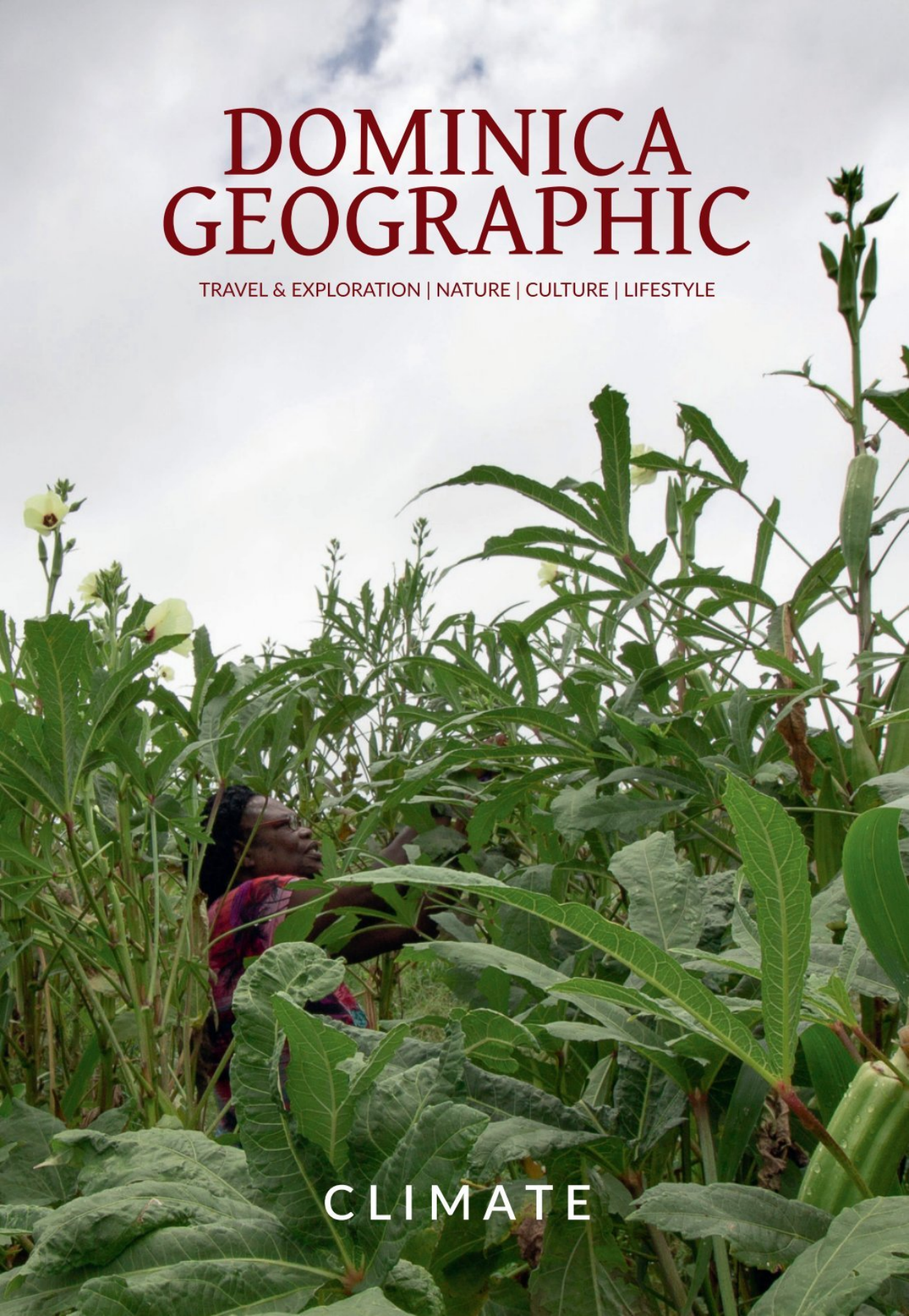
DOMINICA GEOGRAPHIC

TRAVEL & EXPLORATION | NATURE | CULTURE | LIFESTYLE



CLIMATE

DOMINICA GEOGRAPHIC

THE CLIMATE EDITION

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Dominica Geographic is an independent magazine
published annually by Paul Crask (Blue Parrot Consulting)

Printed by Park Communications, UK

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Cover photograph by Samantha King.

EDITORIAL

Welcome to the Climate edition of Dominica Geographic magazine.

Climate change and natural habitat loss are two of the greatest challenges we now face as a global community, and our fragile planet is under threat because of our behaviour, our lifestyles, and our insatiable thirst for wealth. Species are being lost, forests are being burned or cut down for farming, pollution is poisoning the land, the sea, and the air we breathe. Extreme weather events are killing people and destroying communities. Scientists and naturalists show us the evidence, activists scream for our attention. Yet we go on.

In Dominica, in the wake of hurricane Maria, our national aim is to become a 'climate resilient' nation; but this is not enough. We must not only try to protect ourselves from the extremes of nature, we must also protect nature from the extremes of ourselves. Banning single-use plastics is a good start, but it ought to be followed-up with improved attitudes to and methods of waste disposal, we should have recycling facilities, we should ban the use of harmful agricultural chemicals, and build real sustainability into our communities.

The stories in this magazine edition are linked by the thread of climate change, and I am grateful for the contributions of Dr. Lennox Honychurch, Marica Honychurch, Michael Lees, and Samantha King. Thanks also for the expert archaeological input of Mark Hauser and Doug Armstrong, and for a lesson in sustainability and realising a vision by Daniel Langlois.

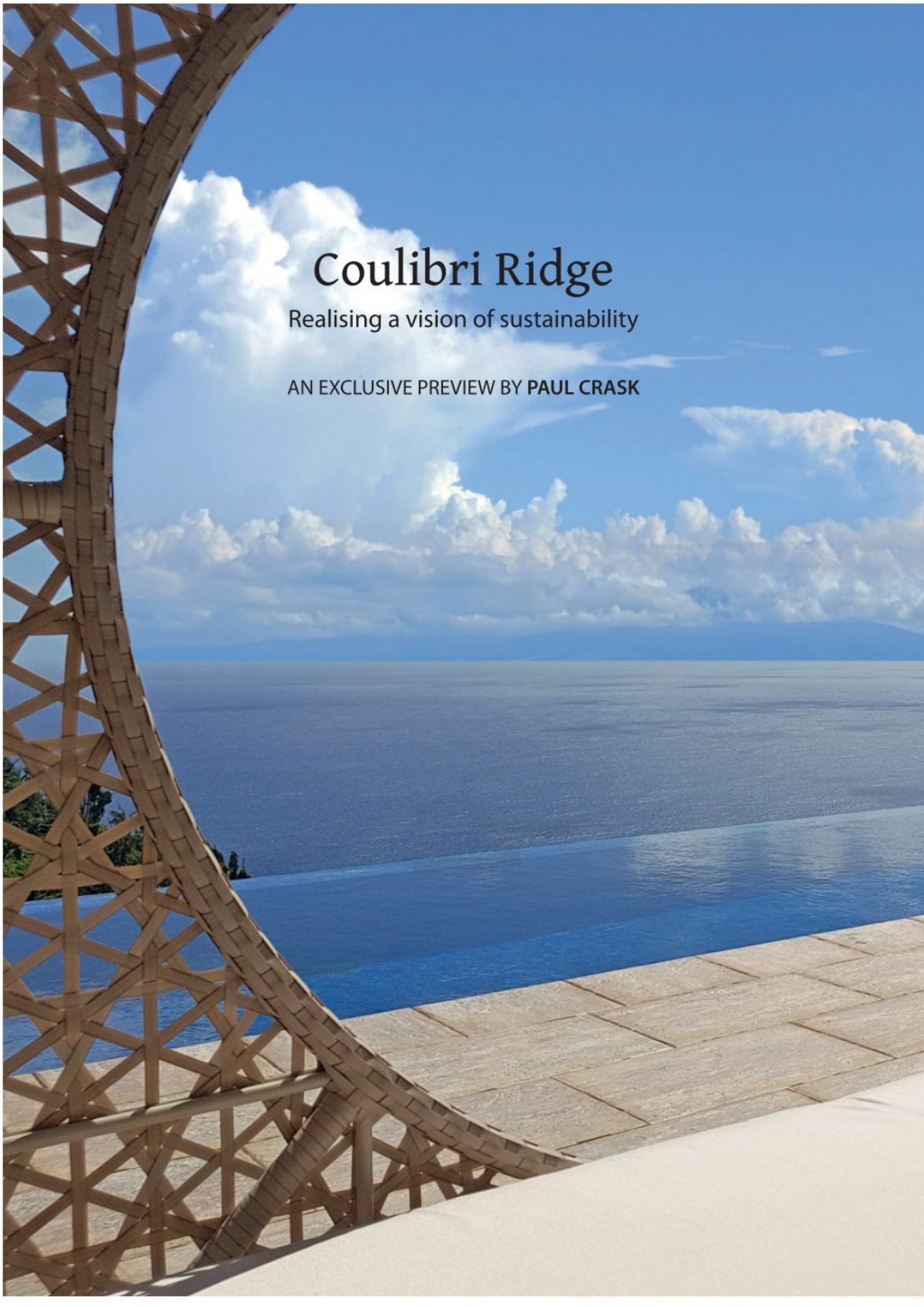
When I research and write articles for this magazine, I love to meet people and listen to stories about what they do and how they live. I will cherish the hours spent chatting with fishermen and backyard farmers; and a November morning in the company of goats, rabbits, chickens and turkeys with musician and homesteader, Michele Henderson.

I have changed the format of the magazine and it now incorporates a section reviving the name, *Dominica Traveller*, which is an independent guide to what I believe is the best of Dominica in 2020.

It is always a challenge to pull all of this together and, each time I produce an edition, I feel like it may be the last one, so I am especially grateful to the sponsors - both old and new - who continue to encourage and support my efforts.

I hope you find this edition interesting.

PAUL CRASK



Coulibri Ridge

Realising a vision of sustainability

AN EXCLUSIVE PREVIEW BY **PAUL CRASK**

I meet Daniel Langlois 14 years after he began his Coulibri Ridge project. He has invited me to come and see it before it opens to the public - most likely in early 2020.

A native of Quebec, Daniel is a successful entrepreneur whose company, Softimage, created groundbreaking 3D animation and effects software for the film industry in the 1980s. Ahead of its time, his company's developments were eventually responsible for special effects in blockbusters such as *The Matrix, Jurassic Park, Terminator 2, Titanic, The Fifth Element,* and many others. Providing the building blocks for Softimage was Daniel's background in art and design. He loves to create things, innovatively pushing the boundaries of what is possible.

His business takes him around the world, and he has always been interested in what could be achieved with sustainable technologies within the tropical and sub-tropical belt, where sunshine can be harvested and converted to energy. The dichotomy between wealthy suburbs and poverty-stricken shanties in such places as Indonesia, for example, caused him to wonder why simple, self-sustainable solutions for such communities were not in place when the technology seemed within fairly easy reach.

He began investigating self-sustainable and small eco-friendly communities and dwelling architecture in the mid-1990s and considered potential places around the world where he could design and implement such projects with the aim of demonstrating their viability. In 1997, he visited Dominica for the first time with his life companion, Dominique, and they fell in love with the island. They explored Dominica looking for locations where they could build a home and experiment with concepts and technologies. In the end, they decided on the very place they stayed, Petit Coulibri Guest Cottages.

Key location factors included an unobstructed south orientation which would be ideal for solar power; at an elevation of 225 metres, it would not be vulnerable to sea damage caused by tropical storms or hurricanes; it has sufficient rainfall and potential for small scale wind harvesting; and it is cool at night, reducing the need for power-hungry air conditioning.

In 1998, Daniel began designing and planning the renovation of the guest house and two guest cottages with the aim of building a limited, self-sustainable, eco-friendly solution. But for a large-scale proof of concept, which was Daniel's main ambition, this would not be sufficient. He wanted to demonstrate what could be done in small communities and therefore decided that a larger and more demanding project was required. A high-end resort development would present a bigger challenge for self-sustainability and environmental sensitivity.

Daniel greets me at the gated entrance of Coulibri Ridge, and we seem to hit it off straight away. His energy and enthusiasm are infectious, and I am eager to see and learn about his project.

It becomes very clear from the outset that in order to fully appreciate what has been achieved at Coulibri Ridge, you cannot go by its outward appearance alone; you have to have an understanding and appreciation for all of the things that you cannot see.

As soon as the expanded project took form on paper, Daniel began to acquire more land in order to have enough space for the construction of new buildings and the technology and infrastructure that would be required to achieve the ambition of self-sufficiency. One of Daniel's early goals was to integrate solar power and water harvesting so well into the design that they would not be noticed by the resort's clientele.

In order to demonstrate how this works, Daniel first leads me underground. Running beneath the floor and walkways of the resort is a combination of tunnels and connected water cisterns. The cisterns have a total storage capacity of 200,000 gallons of filtered, UV sanitised and chemical-free drinking water. The tunnels house cableways, two minigrids, a fully computerised power management system, and a large AGM battery bank that is capable of storing 730kWh of power. Solar power is captured by 275 photovoltaic panels whose hourly production capacity is 70.2 kWh. The panels are attached to all of the buildings' rooftops, each of which has been carefully designed to have a slightly different angle and pitch so that, collectively, the entire array is as efficient at harvesting solar power as possible. The panels, located on the highest parts of the resort, use the roof itself as a racking system with significantly more points of attachment than you would see in traditional installations.

The shared power generation and storage are enough to supply energy to the entire resort which comprises 14 fully equipped and air-conditioned luxury suites, two restaurants, kitchens, offices and conference rooms, spa, multiple swimming pools (including pumps and heaters), resort lighting, and charging stations for electric vehicles. There is enough redundancy built into the system to enable expansion and to cover periods where demand is unusually high.

As a back-up to solar harvesting, the resort has two vertical axis wind turbines that each produce 3.5kWh. It was important to Daniel to find a turbine design that would have the least impact on local fauna (traditional propeller designs are invisible and therefore deadly to birds), that produced a limited amount of noise, and that would blend in with the environment. The wind turbines are located at strategic points to harvest wind blowing from different directions. In the event of extreme weather, they have a mechanism that allows them to be lowered to minimise damage.

Roof design also allows for extremely efficient rainwater harvesting. All of the buildings collect rainwater, either on the rooftop or in specially designed catchment areas. Surfaces are covered in materials that allow the collection of water that is safe to drink, that can be used in the resort's kitchens and bathrooms, and that also supplies the swimming pools. Even the drains and road gutters have been designed to harvest rain and grey water that can be used to supply an irrigation system for the resort's gardens and forthcoming mini farm. Solar panels on the rooftops also provide heated water to rooms, with water tanks located in the loft of each building for both aesthetic and practical reasons.

The resort is designed and constructed like a small community where every building independently produces enough energy and harvests enough rain water for its own needs while, at the same time, producing a small excess to supply the shared common facilities and provide redundancy if guests in some buildings are more resource demanding than others.

Communications are facilitated by underground fibre optic cable that is backed-up by both cellular and satellite systems.

So far, this is all the stuff you cannot see.

We emerge from the tunnels and walk to the 'Downtown' area of the Coulibri Ridge resort where Daniel shows me the main reception, concierge, and business centre. On the other side of the plaza is an informal daytime restaurant for breakfast, snacks and lunches. It has a large kitchen and preparation area. Although the resort will grow some of its own produce, Daniel is keen to stress that he wants to provide farmers and fishermen with a market, extending his project to the nearby communities of Soufriere and Scotts Head, and helping to provide an income to local people. Throughout the years of construction, local labourers were employed and, even now, after construction and before its official opening, the resort employs local people to maintain the buildings and gardens.

The main infrastructure has been designed to resist the shock of earthquakes and so concrete and steel were inevitable and unavoidable construction materials. The stone cladding for the buildings was, however, painstakingly collected and hand-cut from rocks and boulders found on the land. Daniel was determined to not only to make the end product as environmentally

Vertical axis wind turbine

The tunnel that houses the resort's power management system

friendly and self-sustainable as possible, he also wanted to apply this ethic to the construction phases themselves. In order to do this, the first building that was built was a solar power plant that would provide electrical power for the contractors. Fossil fuels were mainly limited to heavy machinery, and the water that was used for mixing the concrete was harvested entirely from rain. The ridge upon which the resort sits was not flattened, which would have made construction so much easier, but instead, the buildings were designed to be integrated into the natural landscape.

Daniel tells me that he hopes that when people stay at Coulibri Ridge, the model of self-sustainability rubs off on and enthuses them. Clearly the kind of people who will stay here will be reasonably wealthy and he hopes that those with means and vision may take the model and apply it elsewhere. And this comes back to his original vison of a self-sustainable community. By proving that a project on the scale and with the demands of Coulibri Ridge can work, he hopes that the model could be extended to communities in Dominica, especially to those people who are particularly vulnerable in the kind of crisis that we experienced with hurricane Maria.

The conference facilities at Coulibri Ridge are not just there for guests to be able to seamlessly conduct their business should they wish to; they are also potential classrooms where people can come and learn about and discuss the possibilities of large and small-scale sustainable social projects. By demonstrating what is possible at an extreme end of the scale, Daniel hopes that people will engage with the possibility of designing alternative, self-sustainable models for housing and schools around the island. But this requires the participation of open-minded people who share the vision rather than those who operate to a narrow, personal agenda. Intoxicating fixed mindsets with the energy and enthusiasm for such opportunities will be a huge challenge. This is, of course, why building something extremely difficult and showing that it can work, is so important.

In the wake of hurricane Maria, the philanthropic Daniel created Resilient Dominica, a non-profit organisation whose aim is to design and possibly implement self-sustainable social projects in local communities. The organisation was responsible for the redesign and construction of the hurricane-damaged primary school in Soufriere which, Daniel felt, was important not only to show how resilient, recycled, and self-sustainable design could work, but also to give young children a feeling of hope and happiness after such a traumatic experience.

With the exception of a few broken windows, Coulibri Ridge was undamaged by hurricane Maria and all of the solar panels stayed in place. Because it is completely self-sufficient, all services remained fully functional.

Daniel shows me a selection of studios and suites, all of which are so capacious and tastefully furnished that they are more like homes than hotel rooms. Because the resort is located on the crest of the ridge, most accommodation enjoys two magnificent views, front and back; one of Morne Des Fous, the ocean, and Martinique; the other of the lush Soufriere Valley and mountains. I am immediately drawn to one of the rooms with a plunge pool overlooking boundless greenery. It is the kind of place I could stay for a couple of months and write my best seller; I remark. Daniel tells me this is exactly the kind of thing he has in mind, where guests will make repeat visits and stay for ever longer periods knowing they can, if they want to, carry out their business or other work, while on holiday.

Materials used for floors, ceilings, doors, furniture, and so on, are from either renewable sources, or are fully recyclable. In many areas, coated aluminium that gives the appearance of finished wood has been used in place of timber. It is termite and mold resistant as well as being durable and fully recyclable. Daniel shows me a table that was made in Indonesia by a company that recycles teak from broken boats and buildings.

We stroll along the walkways above the service tunnel until we reach the second of the restaurants - this one is expected to be a little more formal for evening dining - and a communal infinity pool that visually connects with the ocean and Martinique. The layout, location, and building aesthetics are sublime but, for me, they are eclipsed by the thought, the planning, the research, and the technological and engineering design that went into realising the vision.

The project has taken a long time to get to this point. Conceptual planning, the challenges of constructing such an ambitious development on Dominica, and a refusal to cut corners and compromise, have all been factors. The last remaining challenge is the ancient public road that joins Soufriere with the Bois Cotlette, Petit Coulibri, and Morne Rouge estates. It has always been in poor shape, but it has significantly deteriorated since the hurricane. Daniel hopes the government will be able to rehabilitate it soon. Once done, he can open Coulibri Ridge immediately.

After Daniel and I have said our goodbyes, I drive that bumpy old road feeling like I have just been in the company of someone akin to one of my old university professors; a tutor with so much to give. Daniel has made a massive investment in Dominica with this project, and it may well be the first of its size and scale in the world. It goes way beyond the ubiquitous 'eco' marketing speak; it is the real deal and it should be celebrated and embraced.

Coulibri Ridge

www.coulibriridge.com

Daniel Langlois Foundation

www.fondation-langlois.org

Resilient Dominica

www.rezdm.org

This sixth magazine of the series features nine stories about the impact of climate change on Dominica as well as a 40-page Dominica Traveller section describing the very best of the nature island in 2020.

Independently produced by published travel and feature writer, Paul Crask, Dominica Geographic magazine offers a fascinating and alternative insight into this diverse and beautiful island.

"From the past to the present, Dominica Geographic is the stuff of everyday life on the nature island. It is one of the best mediums to share my research with Dominicans and travellers."

Mark Hauser, Associate Professor of Anthropology at Northwestern University.

"A great publication that gives a stunning insight into the variety of experiences and adventures available in Dominica."

Dr. Lennox Honychurch, Dominica historian and anthropologist.