

# CLIMATE INTELLIGENCE UNIT



## OUR CLIMATE INTELLIGENCE UNIT'S MISSION

The architecture, engineering, and construction (AEC) industry makes up 38% of global carbon emissions, but at ARGO we partner with our clients to protect our planet by accelerating the transition to a net-zero world.

ARGO's Climate Intelligence Unit (CIU) is a team within ARGO, leading the drive to climate-positive construction by 2030. The unit is led by Asli Nur Timur Yordanov, an architect who has a MSc in Building and Architectural Engineering from Politecnico di Milano and is LEED Accredited Professional and One Click Life Cycle Assessment (LCA) Certified.

ARGO's digital design and construction process allows us to intelligently analyse a building's performance in a virtual environment to produce more sustainable, resilient, cost-effective and net-zero energy buildings. Our team also work with LEED, WELL and BREEAM certification requirements to reduce greenhouse gas (GHG) emissions.

By using this technology and process, we create a digital twin of our buildings, controlling their climate impact and helping our clients qualify for green and transition finance.

ARGO's CIU services are available to our clients and to other AEC professionals.

## TEAM MEMBERS



**DAVID CAMPION**  
MANAGING DIRECTOR



**ASLI NUR TIMUR YORDANOV**  
CIU LEAD / SUSTAINABLE  
ENERGY ARCHITECT



**KEVIN MCNULTY**  
DIGITAL MODELING LEAD



**MIGUEL MENDIETA**  
CIU SUSTAINABLE  
ENERGY ARCHITECT



**ROSS MILLANEY**  
DESIGN DIRECTOR



**ANDREINA ACOSTA  
CASTRO**  
ARCHITECT / DESIGN LEAD



**ADAM CAMPBELL**  
DIRECTOR - IRELAND



**MARSHA-ANN  
CADOUGAN**  
STUDIO LEADER - BARBADOS



**ANTONIO RODRIGUEZ  
TOLEDO**  
STUDIO LEADER - DOMINICA



**KILLIAN CAMPION**  
INVESTMENT AND  
EXPANSION



**TRISTAN SANDIFORD**  
MARKETING AND BUSINESS  
DEVELOPMENT MANAGER



**KEITH BEHAN**  
ARCHITECTURAL  
TECHNOLOGIST

## SUSTAINABLE DEVELOPMENT GOALS

Sustainability is a journey. Emerging understanding, changing priorities and increasing urgency challenges us to constantly evolve and improve our approach. Sustainable design, which stands at the core of our services, is the philosophy that guides every step we take.

ARGO's Climate Intelligence Unit (CIU) is a new initiative undertaken by the company to drive climate positive change and respond to the need identified by the UN and the Paris Agreement for society to be carbon-neutral by 2050.

We at ARGO believe that digital modeling will be one of the major processes utilised in all construction projects of the future, with highly technologically sophisticated design and production processes used to help achieve the goal of net-positive effect on our environment. This 3D virtual environment technology also allows ARGO to achieve savings of up to 20% over conventional 2D delivery.



## SYSTEMATIC THINKING

ARGO's Climate Intelligence Unit (CIU) developed its own language by using semiotics. These symbols were crafted over years of developing insights into sustainable construction. We have standardized this visual approach by connecting our language to the UN Sustainable Development Goals to make our expertise clear and coherent for everyone.

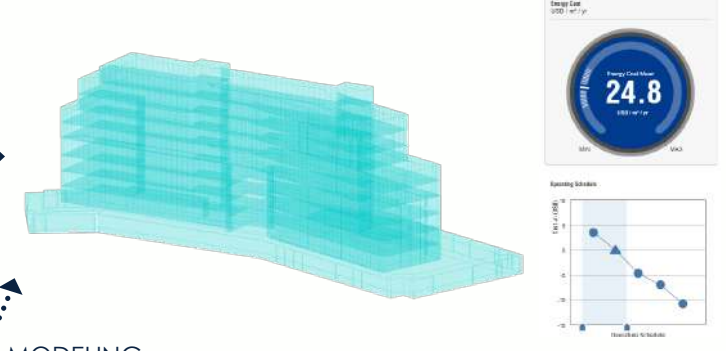
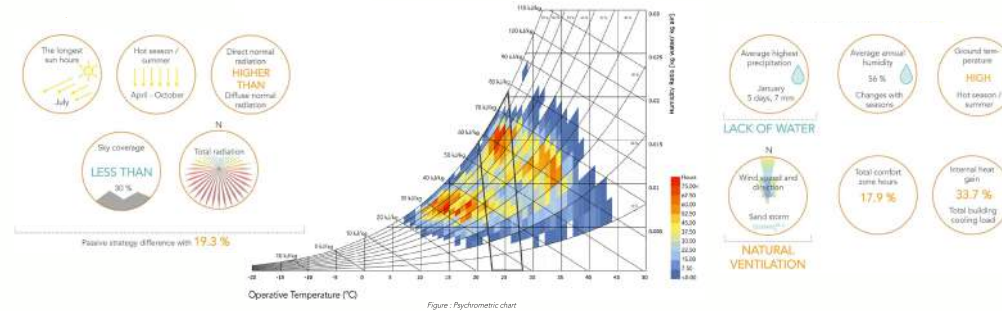




## ARGO's CLIMATE INTELLIGENCE UNIT SERVICES

- Research and Development
- Net-zero Carbon Strategy Design
- Environmental Simulations
- Climate-Adaptive Design
- Sustainable Strategy Advisory
- Energy Efficiency Simulations
- LEED Certification Pre-Checks and Consultancy

## ARGO's CLIMATE INTELLIGENCE UNIT PROCESS



### INTRODUCTION

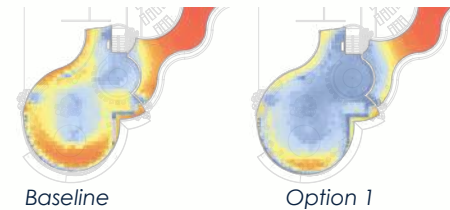
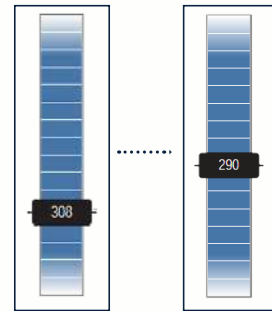
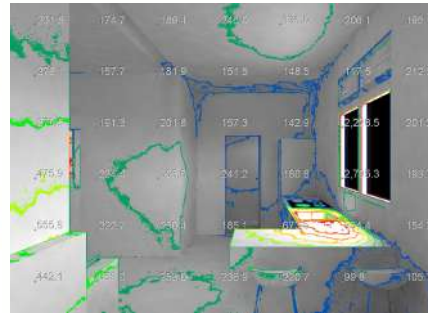
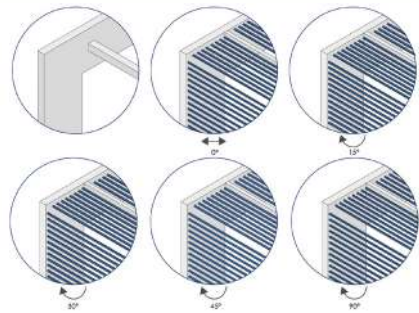
We meet with our clients to understand your needs, project, scope and budget with design resilience as our additional focus.

### BASELINE

We then gain an understanding of the location and its climate, collecting scientific data and researching passive strategies accordingly.

### MODELING

We begin the BIM process by energy modelling to understand elements such as carbon footprint, energy efficiency and solar radiation.



### DEVELOPMENT

We develop multiple approaches, selecting from a breadth of the latest in sustainable design and construction in order to arrive at the most optimal solution for your specific projects, allowing for flexibility and safeguarding your budget.

### BENCHMARK

We compare real-world scenarios by using our sustainability tools and calculations that incorporate climate-based benefits, energy efficiency, flexibility of design and your budget to exactly measure the benefit to both you and the climate.

### MONITORING

We remain fully engaged with your project right through to delivery to ensure our design process is honoured by contractors and external parties to ensure the best possible execution of our solution.



# PORTFOLIO

The projects showcased here highlight the work we have delivered to demonstrate sustainable development and delivering innovative solutions to meet today's challenges. Sustainable development goals were targeted in each selected project.

The projects represent the sustainability actions we take across daylighting, wind, waste, energy, solar radiation, water, economics, materials, environmental impacts, planning and management that will help us to build a green world for everyone.



**BERMUDA L.F. WADE INTERNATIONAL AIRPORT , BERMUDA**



**INTERNATIONAL MOTORS SHOWROOM, TORTOLA**



**PARK HYATT, ST. GEORGE, ST. KITTS & NEVIS**



**THE CONVERSION OF MONEENATIEVE NATIONAL SCHOOL, IRELAND**



**ZING ZING RESTAURANT, SECRET BAY RESORT, DOMINICA**



**WELCOME PAVILLION, SECRET BAY RESORT, DOMINICA**



**PALISADES RESTAURANT, FORT YOUNG HOTEL, DOMINICA**



**ART BARN, SECRET BAY RESORT, DOMINICA**



**ARGO'S CORPORATE OFFICE, DOMINICA**



**PORTSMOUTH SMART HOSPITAL, DOMINICA**



**CARTON HOUSE HOTEL, IRELAND**



**MARRIOTT HOTEL, HAITI**



**TRINITY HALL STUDENT RESIDENCES, DARTRY, IRELAND**



**MANDARIN ORIENTAL , GRAND CAYMAN, CAYMAN ISLANDS**



**APES HILL PERFORMANCE CENTER, BARBADOS**



**APES HILL VILLA AND HALF-WAY HOUSE, BARBADOS**



**IDB PROTOTYPE MODULAR HOMES TO COMMUNITY, BARBADOS**



# BERMUDA L.F. WADE INTERNATIONAL AIRPORT

BERMUDA



TRANSPORTATION | COMMERCIAL | CONSTRUCTED



Large scale rainwater harvesting



Low-e glazing, solar comfort



Low energy lighting solutions, reduced energy consumption

Related UN SDGs:

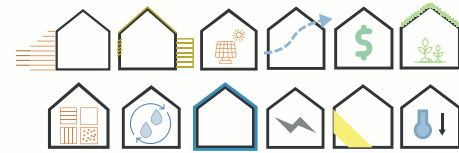


ARGO provided BIM consultancy services in the construction and redevelopment of Bermuda L.F. Wade International Airport project. Water management and affordable energy were the main sustainability considerations within our BIM consultancy scope. The use of BIM greatly decreased abortive works on site which significantly reduced construction waste.

Large scale rainwater harvesting was implemented. Low-e glazing solutions and low energy lighting solutions with a fully integrated BMS system to optimize operations and energy consumption were considered. Through analysis, the best results in terms of daylighting and solar comfort were determined and the solar exposure was decreased.



# INTERNATIONAL MOTORS SHOWROOM TORTOLA



COMMERCIAL | CONSTRUCTED



Resilient structure, reduced construction time and waste



Flood risk analysis and simulations



Low energy lighting solutions, reduced energy consumption

Related UN SDGs:



**RENEWABLE**  
ENERGY SOLUTIONS



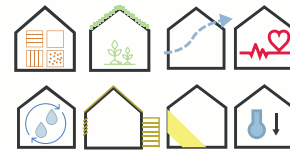
**INDOOR**  
TEMPERATURE REDUCTION

ARGO Development Studio delivered the Tortola Car Showroom in the British Virgin Islands. The structure of the showroom is climate resilient while carefully reducing construction time and waste, with a pre-manufactured construction system. Historic flooding records from previous weather events and hurricanes were used to simulate hurricane events and determined the building levels, location, infrastructure and drainage.

A high performance double glazing system with low-e coatings was selected. The insulated external envelope and roof created and controlled an airtight internal environment which allowed for an efficient use of AC and optimized indoor temperature. The sun's rays are reflected by 70% with help of the solar reflective roof membrane. The development benefits from rainwater harvesting. PV panels at the roof level support the electrical needs of the facility.



**PARK HYATT**  
ST. GEORGE, ST. KITTS & NEVIS



HOSPITALITY | LEISURE | CONSTRUCTED



Green living walls



Biophilic design approach



Quality views to give building occupants a connection to the natural outdoor environment

Related UN SDGs:

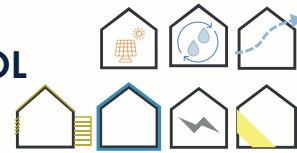


ARGO provided construction consultancy services during the construction of the Park Hyatt Resort in St. Kitts. The hotel comprises a total of seven green living walls and 7000 various plants. The vertical gardens are made to reflect the island's tropical location and to continue biodiversity. The green living walls are found in the main reception, the spa area, and presidential villa area. The use of filtered and treated clean rainwater for the resort pool areas helped to save potable water sources.

Local stone excavated from the site was reused to connect local vernacular architecture and to clad the amenities, pool areas and buildings. Certified hardwood was used to develop an environmentally conscious building. Designing for quality views involved the consideration of building orientation and site design, facade, and interior layout. Guests can visually integrate with outdoor environments, while achieving greater health and well-being.



**THE CONVERSION OF MONEENATIEVE NATIONAL SCHOOL**  
COUNTRY LEITRIM, IRELAND



RESIDENTIAL | CONSTRUCTED



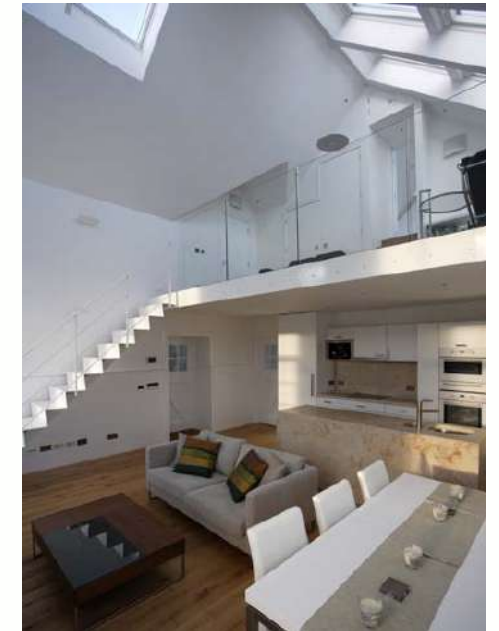
*Renovation of a structure, reduced waste and greenhouse gas emission*



*Controlled daylight with window dimensions and performance*



*Passive house standards*



*Indirect light usage, increased daylight*

Related UN SDGs:

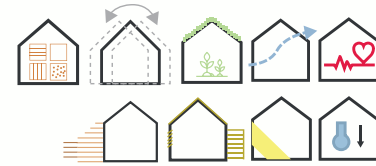


This schoolhouse was falling to ruin when rescued, restored and reinvented. By renovating the school building and repurposing spaces and materials, the amount of carbon associated with new materials is decreased and the amount of debris and waste going into landfills is reduced. According to the U.S. Environmental Protection Agency, deconstruction rather than demolition of a building can save 90% of a building's materials.

The Passive House Standard is composed of several strict performance requirements. Daylight, shading and ventilation – together with high levels of insulation and airtightness to achieve a pleasant interior environment that uses up to 90% percent less energy than a traditional building. An automated lighting and shading system is implemented as a smart house technique. Solar charged energy system with heat recovery is applied and recycled rainwater is used throughout.



# ZING ZING RESTAURANT, SECRET BAY RESORT DOMINICA



COMMERCIAL | CONSTRUCTED



Natural elements included biophilic design



Related UN SDGs:



**LOCAL, NATIVE**  
PLANTING



**INDOOR**  
TEMPERATURE REDUCTION

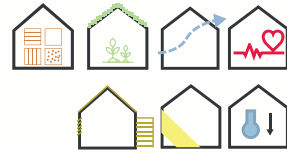
ARGO is working on the expansion of the Resort by focusing on amenity buildings. The Zing Zing is a sit-down restaurant converted after Hurricane Maria hit Dominica. Through the distribution of the spaces, use of materials and resilient systems like the canvas sails, the building is able to provide controlled indoor - outdoor temperatures ideal for its use. The size and placement of openings such as: doors, windows, vents and louvres were designed to guide fresh air through the property.

A combination of steel and timber frames with infill timber rainscreen walls were used to deliver low impact to the site, to reduce the material content effecting positively on the environment and to elevate the building amongst the three canopies. Protective timber screens with glazed openings are implemented together where required to safeguard the glass from the impact of debris during storm events.



# WELCOME PAVILION, SECRET BAY RESORT

DOMINICA



LEISURE | CONSTRUCTED



Local materials selection



Commune with nature

Related UN SDGs:

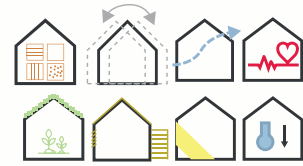


Climate intelligent technologies were used to maximize natural ventilation and daylight usage. A combination of regional materials were implemented to the project. The materials chosen were sustainable in their production, assembly, and maintenance regimes. The structural core was comprised of steel and timber frames with infill timber walls designed to achieve the minimum quantity of material and maximum efficiency and performance.

Prioritizing resilience goals at the start of the project is the only way to achieve resilient, carbon neutral outcomes. The extended roof canopies were used to provide shade and protect guests from Dominica's rain showers. The exterior skin made of reclaimed and sustainably sourced hardwood enables the building to breathe, keeping the exterior and interior spaces at an ideal temperature and humidity rate. To illuminate the building at night, low energy consumption lights were implemented.



**PALISADES RESTAURANT, FORT YOUNG HOTEL**  
DOMINICA



COMMERCIAL | CONSTRUCTED



Before and after images of Fort Young Hotel



Palisades Restaurant, reinvented and redesigned



Palisades Restaurant, indoor and outdoor relation

Related UN SDGs:



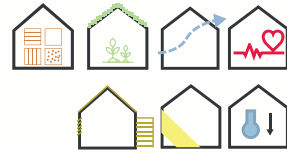
ARGO's brief was to rescue, reinvent and redesign the Palisades restaurant after the damage caused by Hurricane Maria in 2017. Our vision was to deliver a fine-dining experience that was influenced by the rich Creole architecture of Roseau. Palisades was designed to allow quality views of the natural surroundings, and to acknowledge Dominica's unique geology in the form of a volcanic stone solid surface servery.

The interior carcass of recycled hardwood timber was introduced within the salvaged building structure to integrate old and new building forms. The interior design approach involved the use of hardwood fins with backlit lights and concrete floor tiles which serve as a calming grounding to the rich interior finishes. Hurricane resistant glass and timber bifold door sets were used to convert the air conditioned interior to an open-air passively ventilated restaurant with dining, bar and lounge experiences.



# ART BARN, SECRET BAY RESORT

## DOMINICA



COMMERCIAL | UNDER CONSTRUCTION



Use of canvas shading materials



Solar panels to reduce electricity consumption

Related UN SDGs:



**RENEWABLE**  
ENERGY SOLUTIONS



**LOW ENERGY**  
LIGHTING SOLUTIONS

The Art Barn is a multi-purpose building hosting a restaurant, gallery, brewery, projection room and bar. The shape and location of the building were coordinated to minimize its impact on the surrounding environment. Passive ventilation with optimized temperatures is achieved, through the location and size of the window openings in combination with high ceilings. LED lights are used to minimize light pollution and to save energy.

The solar gain of the building is regulated through the orientation and materials implemented to keep the interior at an optimized temperature. PV panels are located on the roof to reduce the energy consumption of the building. Retractable awnings at roof level provide shade and shelter to the guests and help prevent solar gain on the facade. Sliding timber window shutters act as barriers to protect the glass during storm events and control daylight.



# ARGO'S CORPORATE OFFICE

DOMINICA



COMMERCIAL | CONSTRUCTED



Upcycling shipping containers



Related UN SDGs:



**ADAPTABLE**  
DESIGN



**REDUCED**  
CARBON FOOTPRINT

Post Hurricane Maria, ARGO wanted to lead by example in the rebuild effort. We chose a site in the middle of Roseau, Dominica for our corporate offices. A number of shipping containers were salvaged from during the hurricane. Shipping containers are structurally very strong and virtually hurricane and earthquake-proof. ARGO upcycled these to create studio space, offices and facilities. We created a cafe and bar at street level to help reactivate this street of Roseau.

The project took three months to complete. Upcycling shipping containers reduce construction waste, minimizes the use of natural resources, and is cost-effective. When an upcycled shipping container's useful life cycle ends, it can be recycled and reused as a raw building material. As a result, construction waste and carbon footprint are reduced.



# PORTSMOUTH SMART HOSPITAL

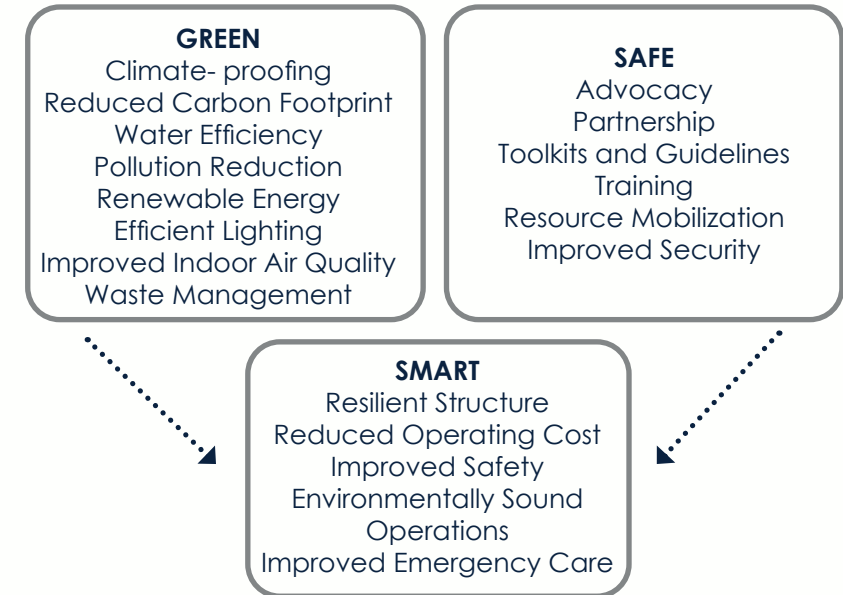
## DOMINICA



HEALTH | CONSTRUCTED



### MAKING SMART HEALTHCARE FACILITIES IN THE CARIBBEAN



The Smart Hospital, Partnership between PAHO and FCDO

Related UN SDGs:



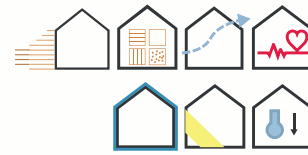
Portsmouth Smart Hospital retrofit project was completed by ARGO in September 2020 in the commonwealth of Dominica. Smart Hospitals, funded by PAHO and FCDO are strategically built to resist disaster events, to provide services under emergency conditions, and to reduce environmental footprint. Healthcare facilities are smart when they link their structural and operational safety with green interventions and at a reasonable cost-to-benefit ratio.



More than 67% of hospitals in the Caribbean and Latin America are located in high-risk disaster areas. The partnership between PAHO and FCDO aims to provide safer and greener health facilities in these high risk locations. Portsmouth Smart Hospital utilizes PV panels to reduce the electricity consumption, water tanks to harvest grey water and government-approved roofing system to resist hurricane events.



# CARTON HOUSE HOTEL IRELAND



HOSPITALITY | LEISURE | CONSTRUCTED



Reduced carbon emissions by integration of conservation and conversion of build elements



Quality views to give building occupants a connection to the natural outdoor environment



Indirect light usage, increased daylight



Related UN SDGs:



**CONSERVATION**  
OF BUILT ELEMENTS AND MATERIALS



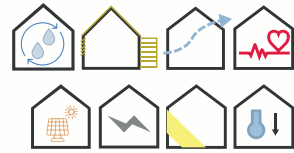
**QUALITY**  
VIEWS

ARGO's Managing Director led the development of Carton House. This project involved the mix of conservation and conversion of the original Carton House and integration of contemporary new-build elements. Reusing the original structure and materials was the most important sustainable element of this project. Existing stone facades and roofs were repaired and reused throughout and lined internally with a sophisticated insulated skin.

The building opens to quality views all around by designing transparent connections throughout the site. The approach to the conservation of the timber sliding sash windows was one of minimum intervention, with the majority of the damaged timber being retained and repaired using a specialist resin, rather than being replaced with new timber. The existing glass was protected and retained where possible.



# MARRIOTT HOTEL HAITI



HOSPITALITY | LEISURE | CONSTRUCTED



Daylight and solar radiation controlled outdoor and indoors



Related UN SDGs:



The Marriott Hotel was sustainably designed and constructed as part of the rebuild after the magnitude 7 earthquake, in 2010. This project prioritized the creation of local employment and social equality as part of its socially responsible development goals. A wastewater treatment plant and a space cooling plant with all building services controlled by a central building management system were introduced.

The building envelope is densely insulated, solar gain is reduced with additional direct sunscreens and an off-site solar farm is used to produce electricity by a high-efficiency energy plant. On-site water storage and treatment systems provide for a five-day water supply; 60 percent of the hotel's hot water supply is provided through thermal solar panels installed on the roof.



# TRINITY HALL STUDENT RESIDENCES

DARTRY, IRELAND



HOSPITALITY | CONSTRUCTED



Reduced greenhouse gasses by applying innovative building envelope solutions



Vernacular architecture techniques

Related UN SDGs:



ARGO's managing director led the development of Trinity Hall. This project was a task in innovation in a historical area in the context of economic and time constraints to create a unique architectural, environmental, historic, social and economical project. The new development project includes the refurbishment and renovation of Trinity Hall.

Vernacular architecture techniques were applied and the biodiversity on the site was preserved. Intelligent building materials and techniques such as the combined use of insulated brick panels were employed. The project supports the implementation of critical new planning, local tree protection, development, conservation and building control legislation.



**MANDARIN ORIENTAL**  
GRAND CAYMAN, CAYMAN ISLANDS



HOSPITALITY | LEISURE | RESIDENTIAL | UNDER CONSTRUCTION



*Nature considered and included biophilic designs*



*Local plantation, solar controlled and turtle-friendly facades*



*Daylight and solar radiation controlled outdoor and indoors*

Related UN SDGs:



**BIM** BUILDING  
INFORMATION MODELLING

**RAINWATER**  
HARVESTING

The design and development team through the use of Building Information Modelling introduced integrated design approaches and innovative construction methods. Hotel tower facades were designed according to the solar radiation and daylight analysis. Sustainability elements such as vertical fins, overhang systems and turtle friendly glazing were introduced to control solar gain. This sustainability approach provided thermal comfort of outdoor and indoor spaces for an improved guest experience.

The project's water requirement will be reduced by implementing rainwater harvesting and storing the water in irrigation tanks. Hurricane resistant shutters are used to protect interiors from storm events. Horizontal louvers are placed on facades at opposite directions at high level to achieve cross ventilation and to increase the amount of fresh air to indoor space.



# APES HILL PERFORMANCE CENTER

## BARBADOS



LEISURE | UNDER CONSTRUCTION



Solar control by large overhangs, louvers and fins



Light color and intelligent material use

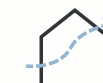


Passive ventilated training rooms

Related UN SDGs:



**RENEWABLE**  
ENERGY SOLUTIONS



**PASSIVE**  
VENTILATION

The Performance Center was designed with maintenance free materials which are durable and climate responsive. The spatial variety offered within the building is reinforced with an expansive entry breezeway which provides passive ventilation. This strategy was designed by considering wind directions to deliver fresh air, to ensure safe, healthy and comfortable conditions for guests. PV panels at the roof level support the energy needs of the building.

The large cantilevered roofs provide shade and shelter which are inspired by local vernacular architecture and create pleasant outdoor experiences for guests. Double height vertical louvers protect indoor spaces and outdoor circulation areas from wind driven rain but, allow for passive ventilation through the facade into the training rooms. Building orientation and location were influenced by the driving range design and wind direction which is mostly blowing from the East in Barbados.



# APES HILL VILLA AND HALFWAY HOUSE

## BARBADOS



HOSPITALITY | RESIDENTIAL | LEISURE | UNDER CONSTRUCTION



Golf Villa - Increased passive ventilation with open plan layout



Townhouse Villa - Increased comfort of people



Halfway House - Light color and intelligent material use

Related UN SDGs:



 **LOCAL MATERIAL**  
SELECTION

 **INDOOR**  
TEMPERATURE REDUCTION

The minimalist design was achieved through a system-build technology that provides increased passive ventilation. Cantilevered roofs and sheltered spaces were designed by radiation and daylight analysis to control solar gain and create a better guest experience. Reflective membrane on the roof and low-coating glazing were used as additional supports to decrease solar gain. PV panels were designed to be located at the roof level to support the villas energy requirements. Electric vehicle charging was offered in the villa cart ports.

Tall plant species are included strategically as a buffer zone to provide shade and a comfortable environment and to emphasize the connection between people and nature. Insulated building envelopes create airtightness and help to reduce heating and cooling costs which improves building durability and the health of occupants. Full height sliding screens were used as a response to the changing wind driven rain to protect guests.



# IDB PROTOTYPE HOMES - COMMUNITY BARBADOS



RESIDENTIAL | DESIGN



Modular housing to community design approach



Agricultural and communal lands



Modular and prefabricated off-site construction

Related UN SDGs:



ARGO developed a prototype of low-cost, self-sufficient, climate-resilient and environmentally friendly housing units that will provide residents with a central community hub containing the necessary amenities and conveniences of a city/town. The vision for achieving this concept was to take a modular approach of the overall design with the main focus on versatile/flexible expansion.

The proposed designs for prototypes focused on living in effective compact living units. This approach allows the use of shipping containers as the structure of the housing units with the advantage of repurposing them, recycling after their life cycle ends, reducing construction waste and carbon footprint with the goal to become more eco-conscious and eco-friendly.



## ADDITIONAL PROJECT REFERENCE IMAGES

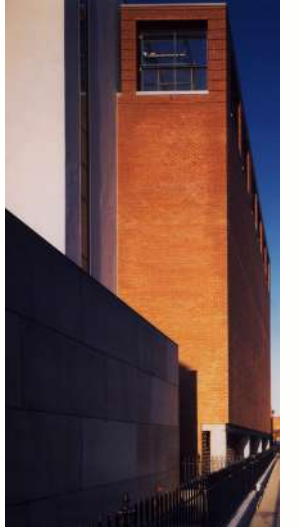
PARK HYATT, ST. GEORGE, ST. KITTS & NEVIS



JACKO'S BAR, FORT YOUNG HOTEL, DOMINICA



BUCCAMENT BAY RESORT, BUCCAMENT, ST. VINCENT & THE GRENADINES



BUCCAMENT BAY RESORT, BUCCAMENT, ST. VINCENT & THE GRENADINES



THE RESIDENCES AT SECRET BAY RESORT, DOMINICA

BELVEDERE COLLEGE, IRELAND





## CONTACT US

### BARBADOS

115 Seaside Drive  
Atlantic Shores  
Christ Church

**T** +1 246 537 2746

**E** [administration@argo-ds.com](mailto:administration@argo-ds.com)

### DOMINICA

Hillsborough Street,  
Roseau

**T** +1 767 613 5126

**E** [lp@argo-ds.com](mailto:lp@argo-ds.com)

### IRELAND

23 South Great George's Street,  
Dublin 2

**T** +353 1 5635342

**E** [ac@argo-ds.com](mailto:ac@argo-ds.com)

**E** [info@argo-ds.com](mailto:info@argo-ds.com)

**W** [www.argo-ds.com](http://www.argo-ds.com)

### JAMAICA

60 Knutsford Boulevard,  
9th Floor, Panjam Building  
Kingston

**T** +1 876 545-7069

**E** [tc@argo-ds.com](mailto:tc@argo-ds.com)

### ST. VINCENT & THE GRENADINES

The Flintoff House,  
Grenville Street,  
Kingstown

**T** +1 784 457 1834

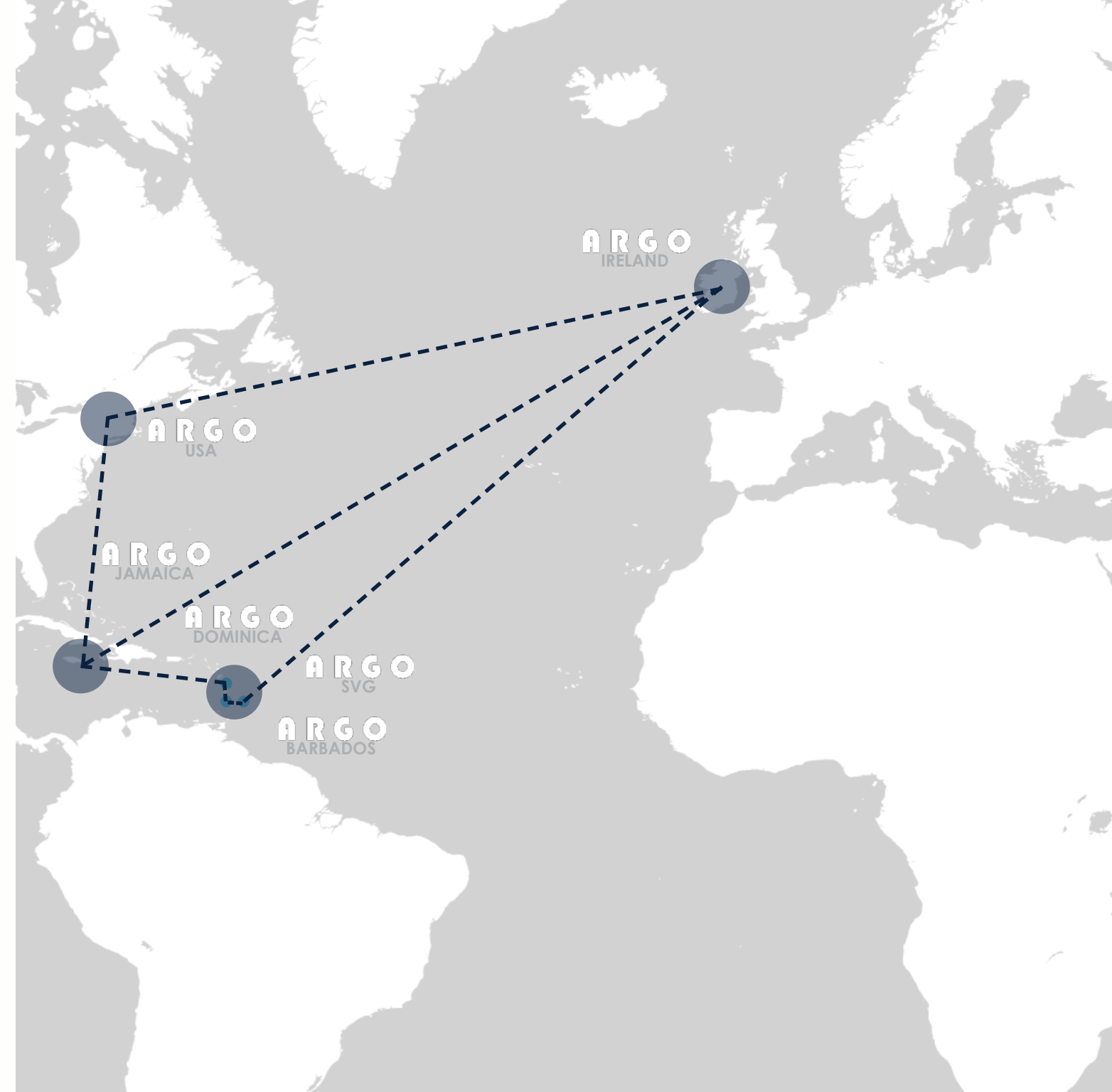
**E** [tb@argo-ds.com](mailto:tb@argo-ds.com)

### USA

345 Park Avenue, 17th Floor,  
New York

**T** +1 917 517 6919

**E** [mpc@argo-ds.com](mailto:mpc@argo-ds.com)





**ARGO**

development studio

**IRELAND**

**BARBADOS**

**ST. VINCENT &  
THE GRENADINES**

**DOMINICA**

**JAMAICA**

**USA**

e: [info@argo-ds.com](mailto:info@argo-ds.com)

|

[www.argo-ds.com](http://www.argo-ds.com)