



AIA
Continuing
Education
Provider

Hotel & Resort
Projects



**34 YEARS & 1200 PROJECTS
LATER...**

**OPENAIRE BUILDS
RETRACTABLE ROOFS
AROUND THE GLOBE**

IS YOURS NEXT?

What we do



How to Work with Us

- We work with architects, developers, investors, contractors, construction managers, general contractors, independent builders, property owners and more...
- OpenAire can participate in your project from design to manufacturing, to construction / installation and hand-over plus can provide architectural and engineering services, operations support, financial/investment planning, business planning etc.
- We are typically included in projects at the Concept Design or Schematic Design Phase. We work with your team to implement your vision.
- The best warranty in the industry: minimum 5 year full parts and labour warranty, training, worldwide support and maintenance

Collaborative Design

- In-house design and engineering
- Certified fabrication & welding facility
- Dedicated customer support and project management
- Revit, Solid Edge, CAD

Engineer Standards

- Minimum L/200 deflection criteria in every design
- Free span enclosures of over 180' (55 m)
- Free-span dome configurations more than 300' (91 m)
- Custom Engineering for all climates & geographies including:
 - High snow/rain loads
 - Seismic zones
 - Hurricane/tornados

Aluminum Construction

- Thermally broken aluminum frames/extrusions
- Baked on paint finish prevents corrosion making them Maintenance Free
- Proven Lower Lifecycle Costs for aluminum buildings
- Key component in energy efficient LEED certification



Salinas Municipal Aquatic Center, CA
LEED GOLD RATING



Roger Carter Community Center, MD
LEED SILVER RATING

8 BENEFITS OF ADDING A RETRACTABLE ROOF

TO YOUR DESIGN OR FACILITY



1 PROMOTES HEALTH AND HYGIENE

Opt for fresh air circulation and daylight for a healthier environment, a new standard in future design.



2 MAXIMIZING SPACE AND REVENUE

Convert unused space or extend "usable" space to turn it into a year-round revenue generator.



3 LOWER LIFECYCLE COSTS

Reduced operating costs add up to drastic savings.



4 NATURAL LIGHT AND ILLUMINATION

Welcome the outdoors inside with a retractable solution that allows for flexibility.



5 PERFECT CONDITIONS YEAR-ROUND

Rain or shine, your space converts to an indoor or outdoor space in minutes.



6 CREATE A PLACE PEOPLE WANT TO VISIT

Attract people to your bright, airy, stunning venue any time, any day.



7 MAINTENANCE-FREE

Never repaint again, means no more extended closures for downtime.



8 ENERGY EFFICIENT

Natural ventilation allows heat to escape and for reduced use of mechanical air-handling equipment.



1. Promotes Health and Hygiene

Ventilation is required to achieve and maintain good air quality, as well as thermal comfort levels for the occupants of any space.

There is little evidence that ventilation directly reduces the risk of disease transmission, but many studies suggest that **insufficient ventilation increases disease transmission.**¹

In this time of a global pandemic, the health of guests in your business is critical. New studies demonstrate the correlation between the transmission of COVID19 in closed environments vs. open air circulation.

In a recent Japan study, the odds a primary case transmitted COVID-19 in a closed environment was 18.7x greater compared to an open-air environment.²

2. Maximizes Space and Revenue

If you have a patio, rooftop or any space that is seasonal, you can enclose it (lot coverage permitting) giving you additional footprint for year round programming. You can also add a retractable skylight and retractable walls (to some building types) to areas that may be under-utilized or purpose specific, turning these into more flexible/programmable environments

Adding an amenity with lower maintenance costs and operating costs allows business owners to focus capital on other areas, and reduce overhead.

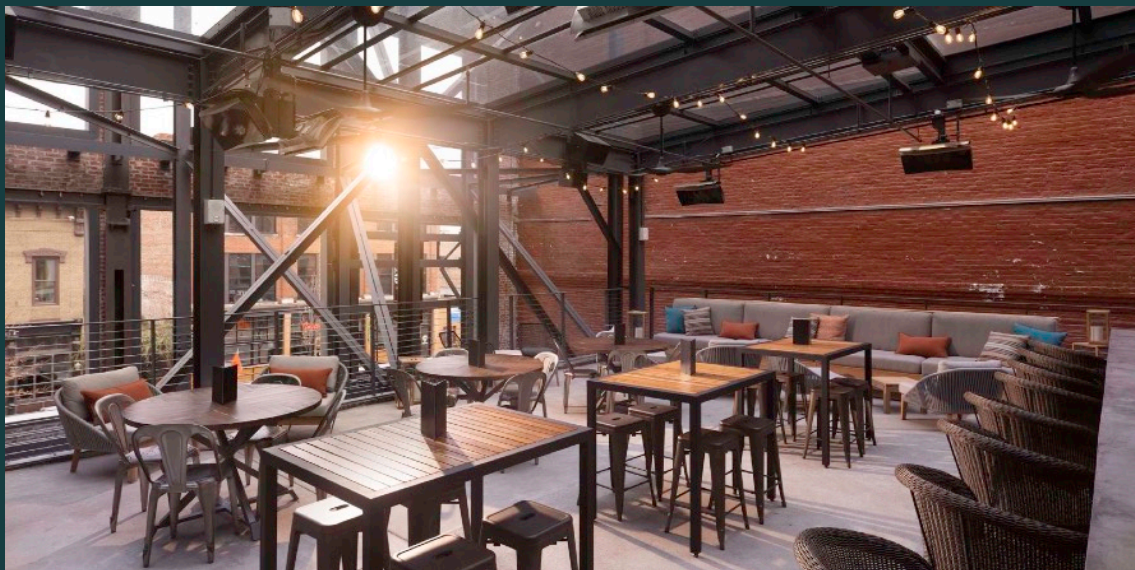


3. Lower Life-Cycle Costs

Savings when operating a retractable roof (translucent or transparent) enclosure include both the cost of hydro, gas and reduce your reliance on electrical lighting during the day.

In a nutshell when the roof is open, you turn off the mechanical systems and lights in the space. This is the intent of all global energy codes. To use less energy.

Using outdoor air as a dehumidifying source when it is cost effective, rather than using a mechanical dehumidification system, can greatly reduce total operating costs, provide better indoor air quality, and improve system reliability.³



4. Natural Light and Illumination

There is undeniable evidence first, that daylit spaces hold the potential to yield substantial benefits, including increased energy savings, increased revenue in retail applications, and improvements to human health and productivity.⁴

There are a variety of studies showing that daylight is the third most important factor in improving retail sales, behind hours of operation and years since last renovation.⁵

In other words, a day lit space with good hours and a clean, new environment will make more money.

Lighting loads can be reduced by incorporating natural lighting into the envelope design and by using efficient lighting options.⁶

5. Perfect Year Round Conditions

Open and Close the roof at the push of a button. Turn your space into one that can be used for events, parties, an indoor/outdoor rentable venue. Mother Nature will no longer have an impact on any use of your space. The roofs of our largest facilities close in minutes. So with the addition of optional rain sensors the enclosure will do the work for you.



6. Create a place people want to Visit

To compete in towns and cities across the country, all hotels, restaurants, bars, etc, must stay ahead of the trends to attract new guests. This is called improving your marketability.

Offering upgraded facilities that are safer and healthier, to compete with other venues, is critical. Ensuring that these can be open year round enhances their value and ROI via programming opportunities.

A retractable roof ensures you are free from weather related concerns. In addition, the 'peace of mind' associated with being in a bright, open and naturally ventilated space is appealing and "marketable" to attract guests.

7. Maintenance Free Facility

Aluminum is lightweight, high-strength, corrosion-resistant and widely recycled. It maximizes building efficiency by balancing the functions of heating, cooling, lighting, shading and ventilation. In addition, aluminum in buildings has been proven to last for multiple decades with minimal maintenance, lowering the lifecycle footprint of a building.⁷



8. Energy Efficient

All energy codes, globally, require new or renovated structures and buildings to use less energy. Aluminum is superior to steel and iron in its ability to reflect the infrared (heat) rays of the sun. ***Properly coated aluminum roofs can reflect up to 95 percent of the solar energy that strikes them, dramatically improving energy efficiency. This makes aluminum is a key component in LEED-certified green buildings should you be looking for that designation.***⁹

In addition when the roof is open and the walls are open, your space becomes a naturally “chimney”. This is a low cost alternative to expensive energy consuming mechanical ventilation systems.

TOP QUESTIONS ABOUT RETRACTABLE ROOFS ANSWERED...

Here are some snapshots of
solutions for other clients:

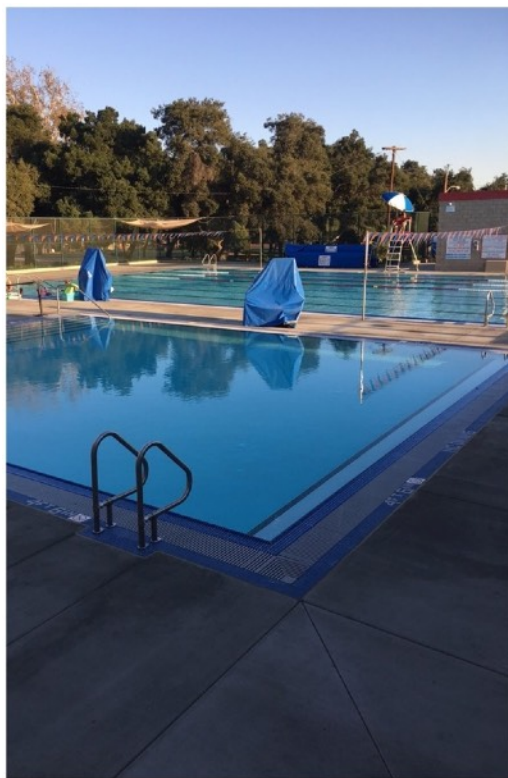
Our Most Asked Question... Can I cover my pool?



YMCA Upland California

YES you can cover an existing pool!

NOTE: this also requires upgrading of mechanical equipment (from your pool guy) and possibly refinishing of decks and pools by that same team.



Before



During



After

Is a retractable skylight double the cost of a fixed skylight?



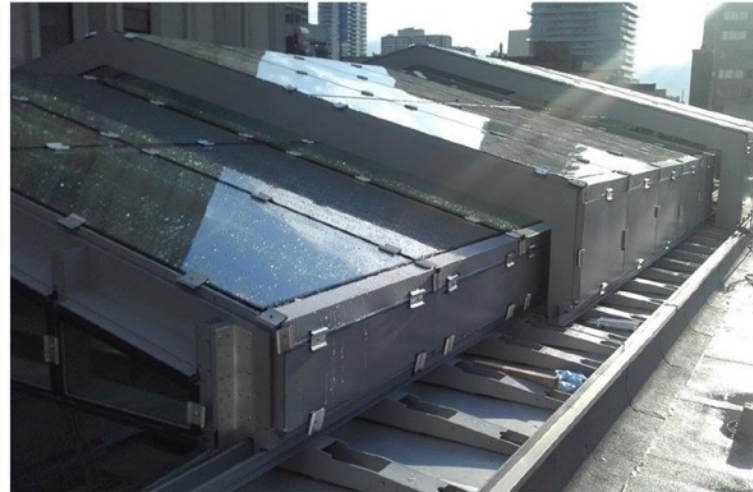
Kellys Landing Restaurant

The skylight is the same size fixed or retractable. If it opens we add tracks and Motors.

Incremental cost added to open (aka add tracks Motors): 10% +/-

Savings on Energy Bills:
(Hydro (lighting) and gas)
15-20% non aquatic
20-30% Aquatic

How long does it take? Small project

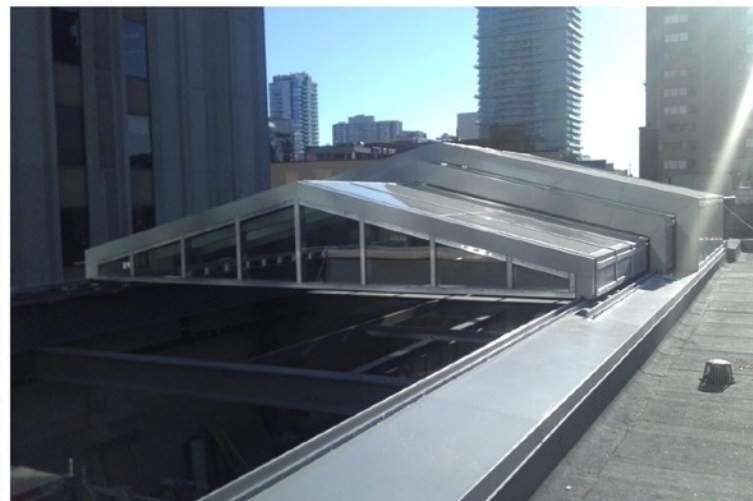


Boston Pizza

27' x 50'

Telescope, glass skylight

Install: 1 month*



** timeline for reference all projects vary*



How long does it take? Large project



Epic Waters Waterpark

162' x 382'

Ground Breaking:

October 2015

OpenAire Start:

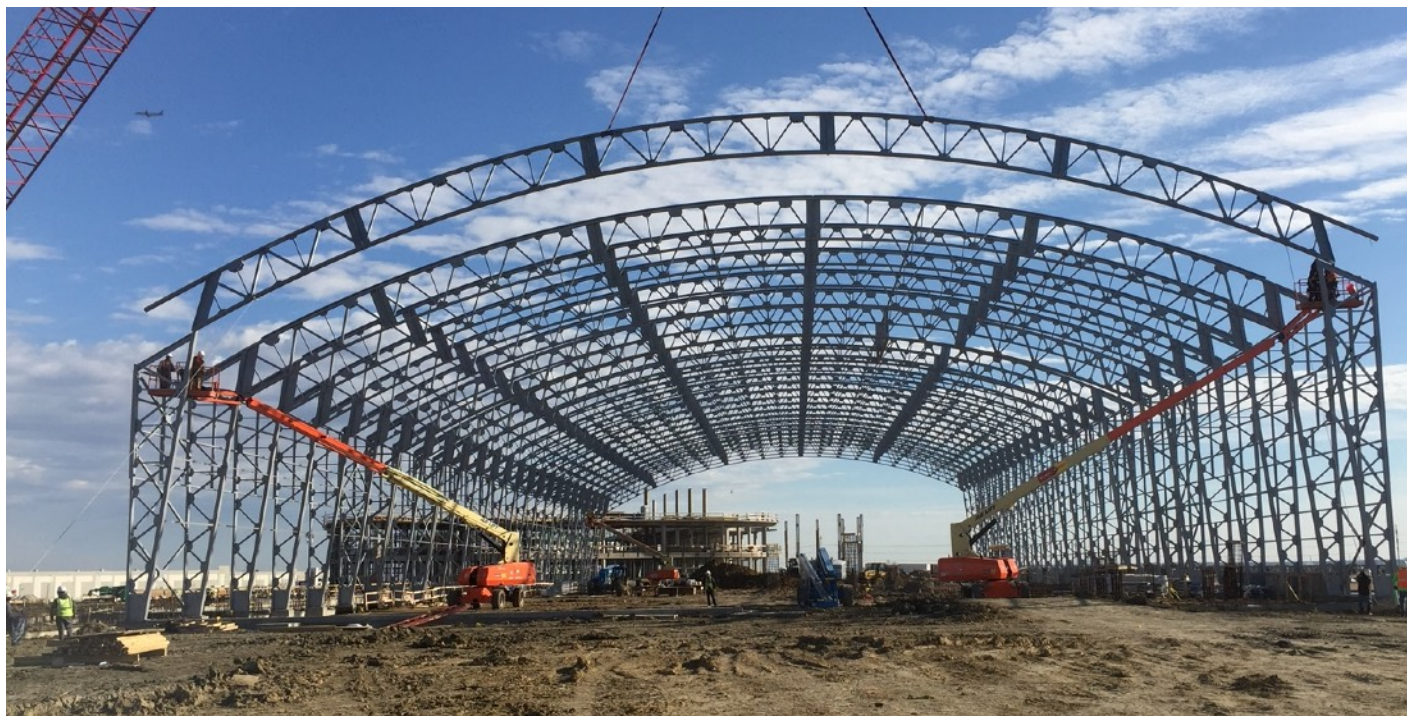
Dec 2016

Last Truss:

Jan 24 2017

Open to the Public:

January 12, 2018



** timeline for reference all projects vary*

I want to keep my patio but use it year round!



Before

After

Gusto 101

Rooftop patio was subject to weather related closures. Now, same patio, open year round

I don't want to lose my best views!



Hyatt Jersey City

Facing Manhattan, this rooftop has one primary view. This solution not only enhances it, but allows it to be seen year round.

My venue is aquatic, what about Corrosion & Mold?



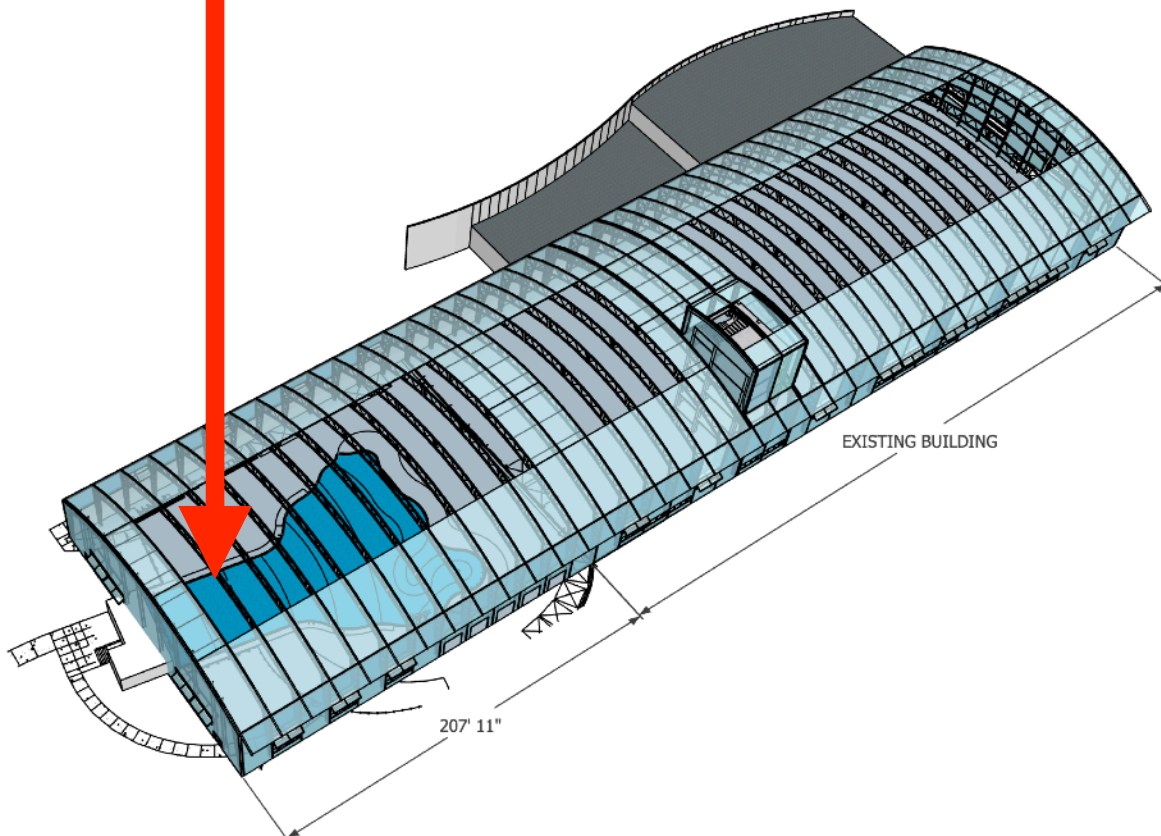
Zehnders Splash Village

During minor gas line maintenance, a hole in a wall led to the discovery roof and wall black mold. The existing glulam structure was in salvageable condition but all other surfaces needed replacement.

Roof was replaced with retractable. Walls replaced with glass.



Can I make it bigger down the road?



Epic Waters Waterpark

This municipal waterpark was designed to grow.

Starting in 2024, the outdoor wave pool will become an indoor wave pool.

The gable end will be removed, the building will get longer and the gable end will be reinstalled in the new location.

Learn & Earn

OpenAire now offers a
Continuing Education Credit
for Architects = 1 AIA LU-HSW

LEARN:

- How they can be added to new & existing buildings
- The health, safety, benefits for occupants
- How retractable roofs can save energy costs \$\$
- The benefits of a Naturally Ventilated Space
- How large volumes of air will potentially reduce the load of airborne disease pathogens
- How retractable roofs are a sustainable and can reduce the carbon footprint of a building
- How they can your reduce building yearly operating costs

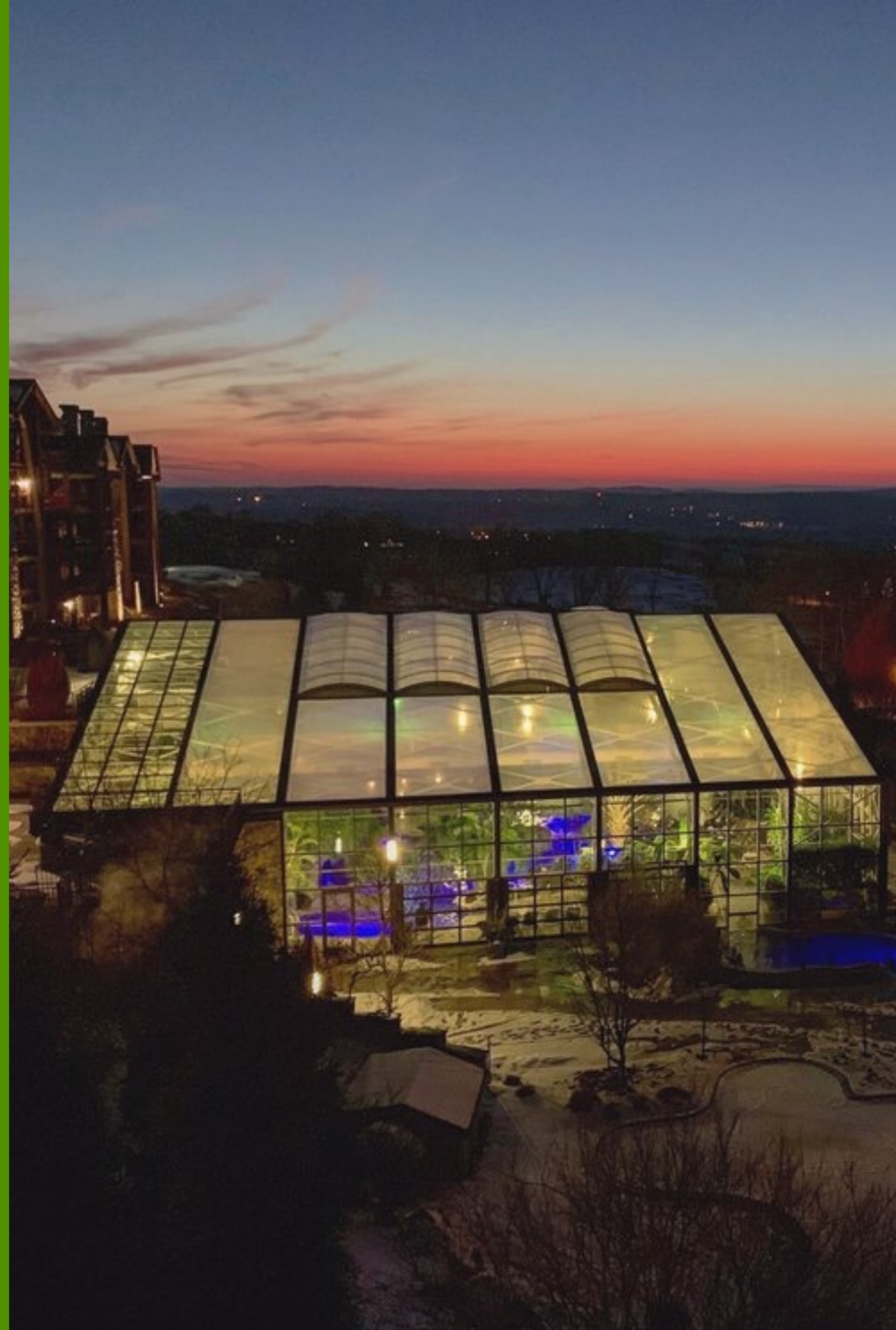
<https://openaire.com/continuingeducation/>

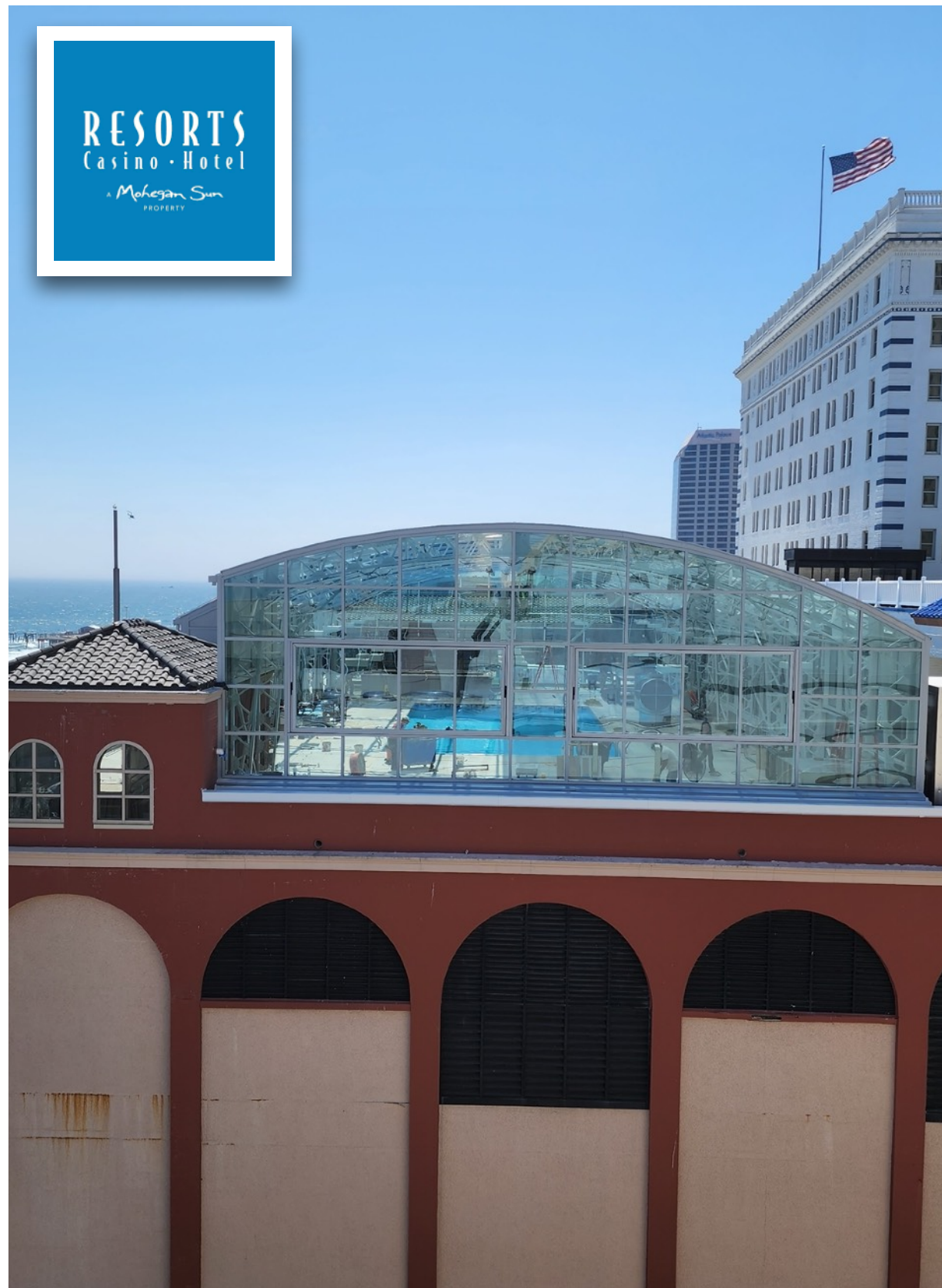
AIA
Continuing
Education
Provider

Credits:

 0.1 IACET CEU*	 1 AIA LU/HSW	 1 AIBD P-CE	 AAA 1 Structured Learning Hour	 AANB 1 Hour of Core Learning	 AAPEI 1 Structured Learning Hour
 MAA 1 Structured Learning Hour	 NLAA 1 Hour of Core Learning	 NSAA 1 Hour of Core Learning	 NWTAA 1 Structured Learning Hour	 OAA 1 Learning Hour	 SAA 1 Hour of Core Learning

Hotels/Resorts
Casinos
Camp Grounds
RV Parks





Resorts Casino; Rooftop Pool
Atlantic City, New Jersey



Resorts Casino; Rooftop Pool
Atlantic City, New Jersey



Resorts Casino; Rooftop Pool
Atlantic City, New Jersey

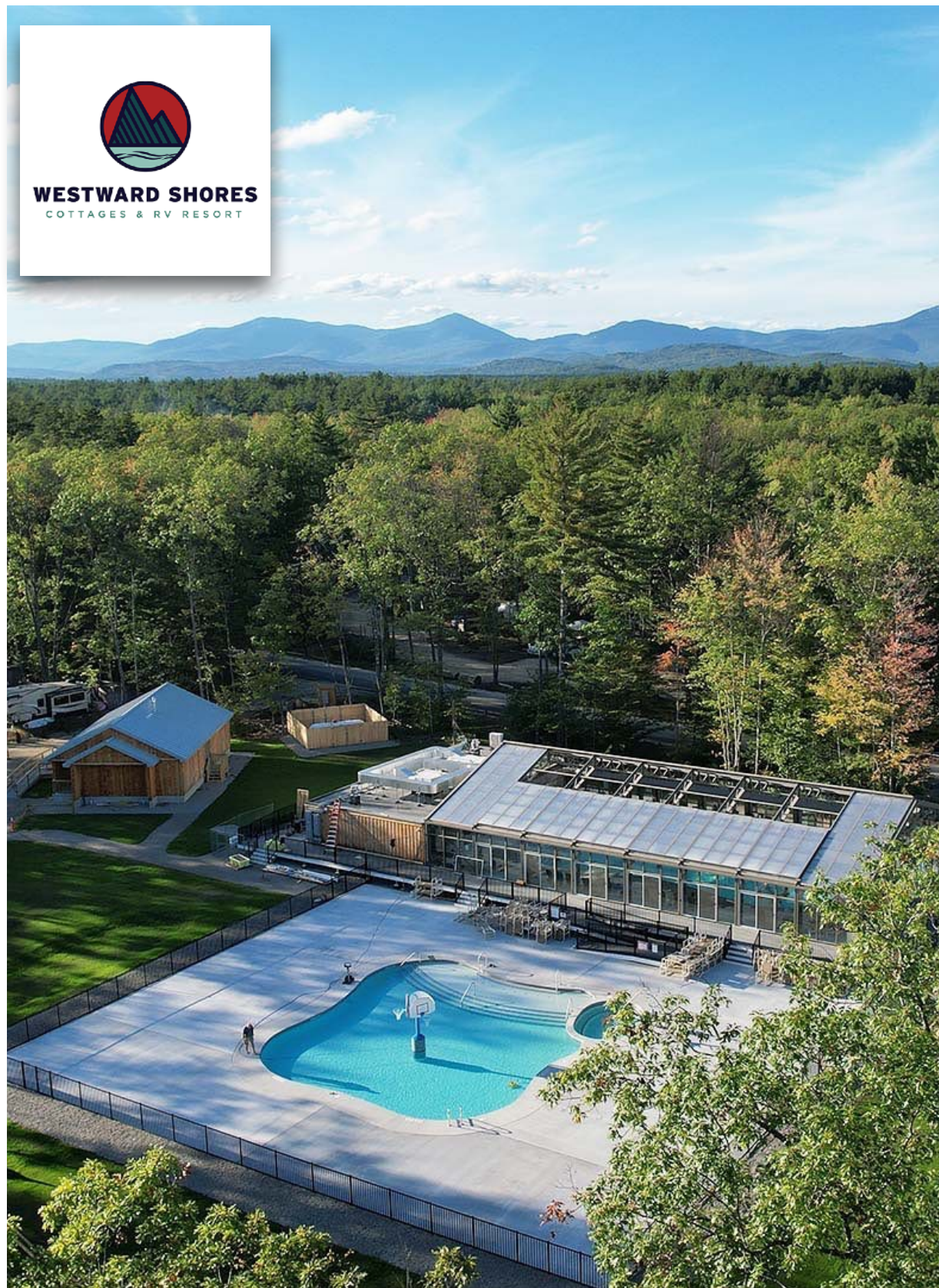


Sites: 179



Sites: 179

Duck Creek RV Resorts
Muskegon, Michigan



Westward Shores Cottages and RV Resort
Ossipee NH



WESTWARD SHORES
COTTAGES & RV RESORT



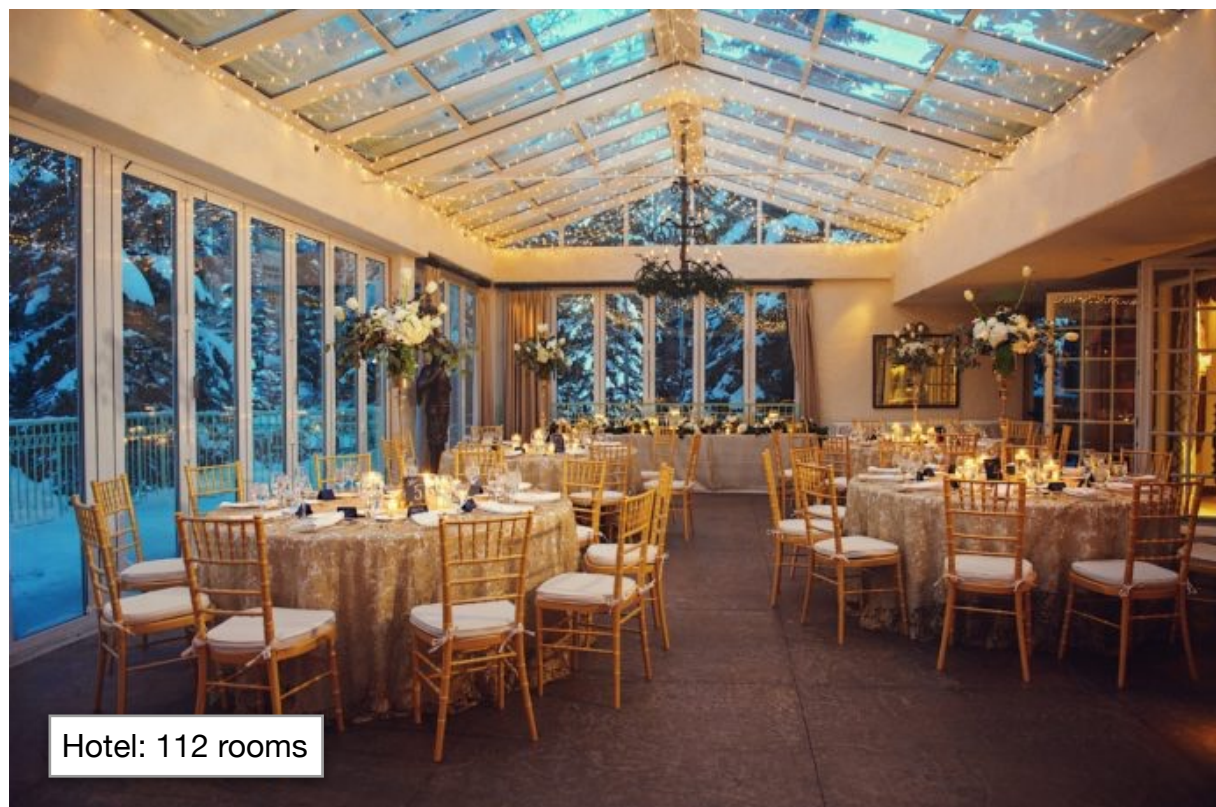
Westward Shores Cottages and RV Resort
Ossipee NH



Hotel: 112 rooms



Ludwig's at Sonnenalp Hotel
Vail Colorado



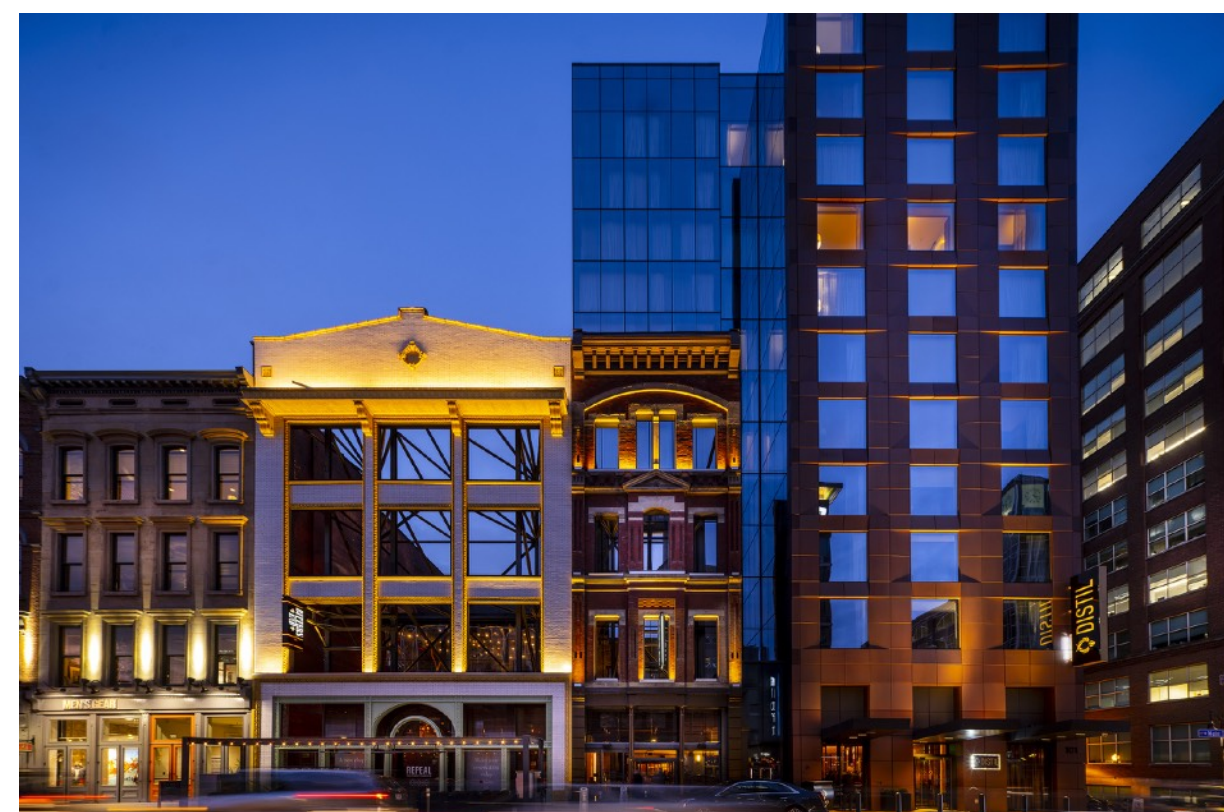
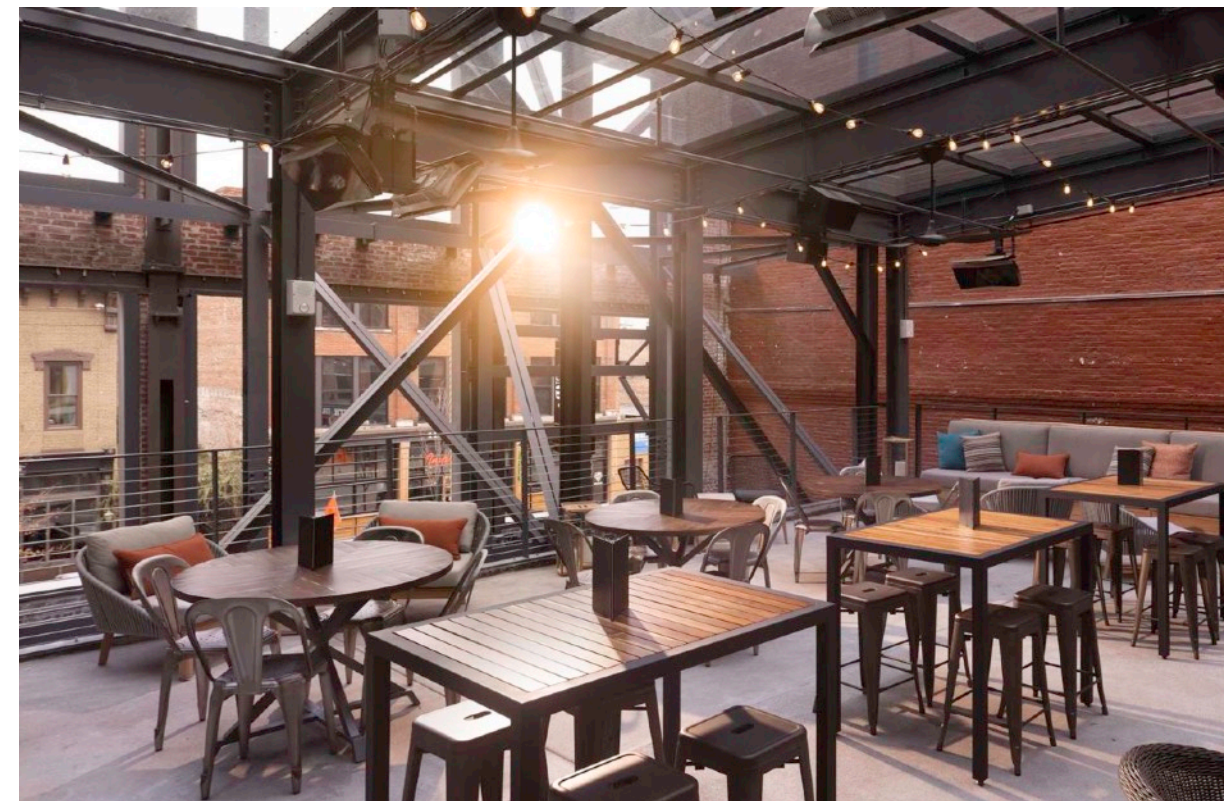
Ludwig's at Sonnenalp Hotel
Vail Colorado



Hotel: 156 rooms



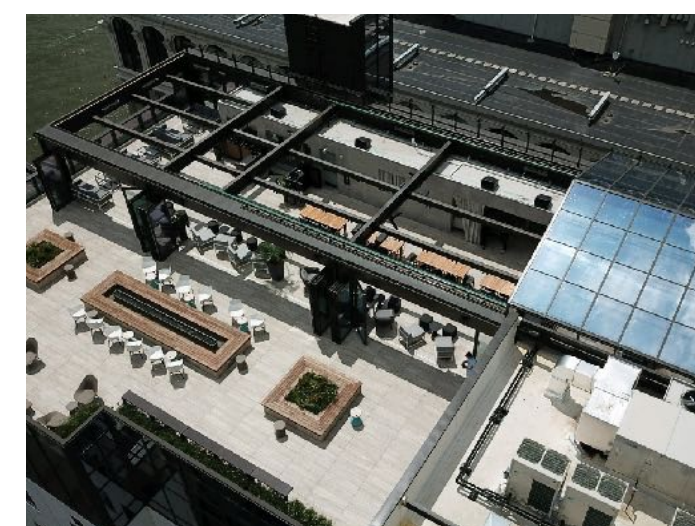
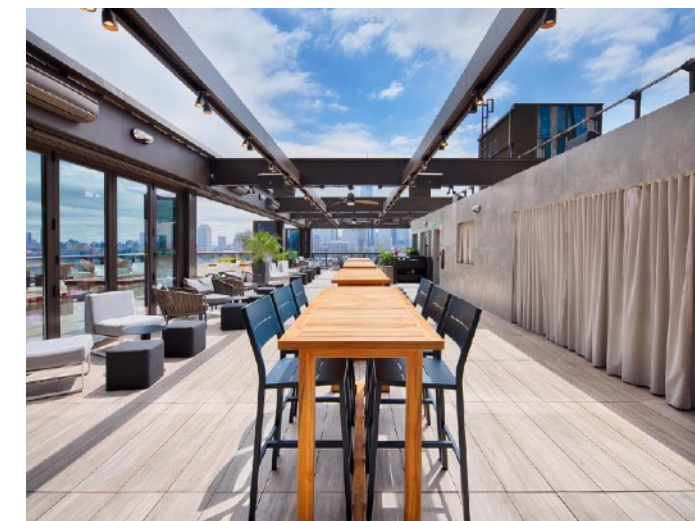
Westin Bear Mountain Resort
Victoria BC



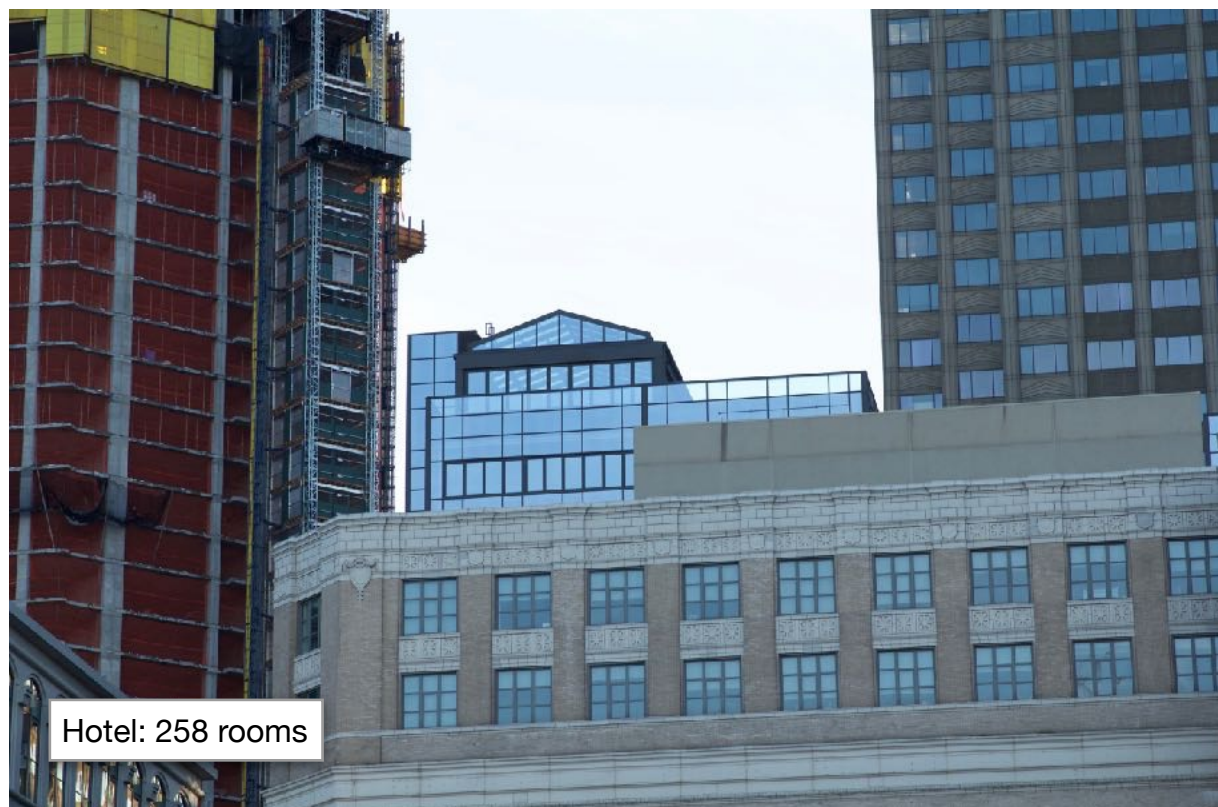
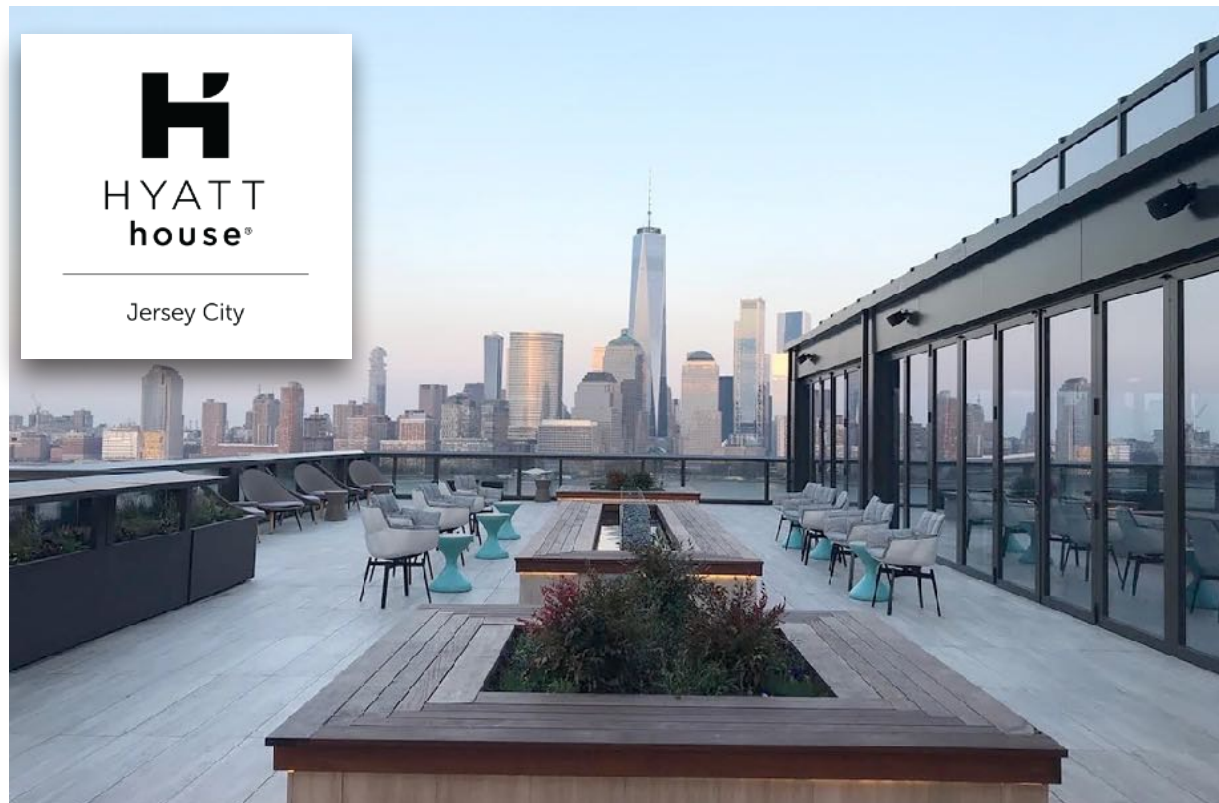
Bitters End @ Hotel Distil and Moxy Louisville
Louisville, Kentucky



Bitters End @ Hotel Distil and Moxy Louisville
Louisville, Kentucky



Hyatt House Rooftop Bar/Lounge
Jersey City, New Jersey



Hyatt House Rooftop Bar/Lounge
Jersey City, New Jersey



Refinery Hotel: Rooftop Patio
New York City, New York



Lucha Rosa @ Moxy DC by Marriott
Washington DC



Lucha Rosa @ Moxy DC by Marriott
Washington DC



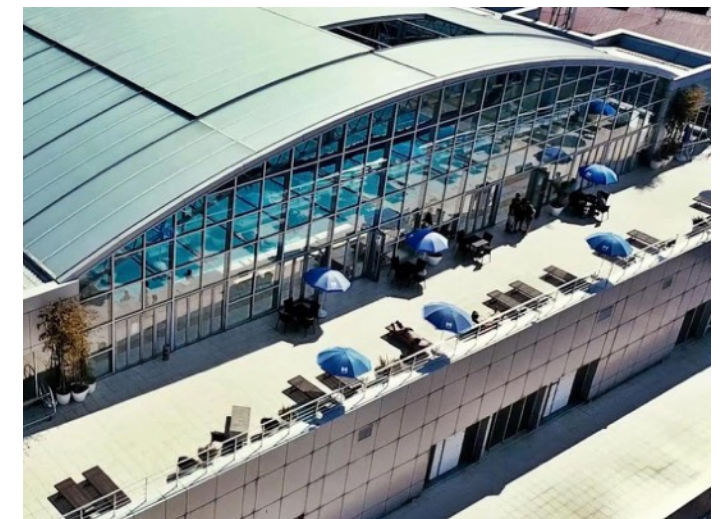
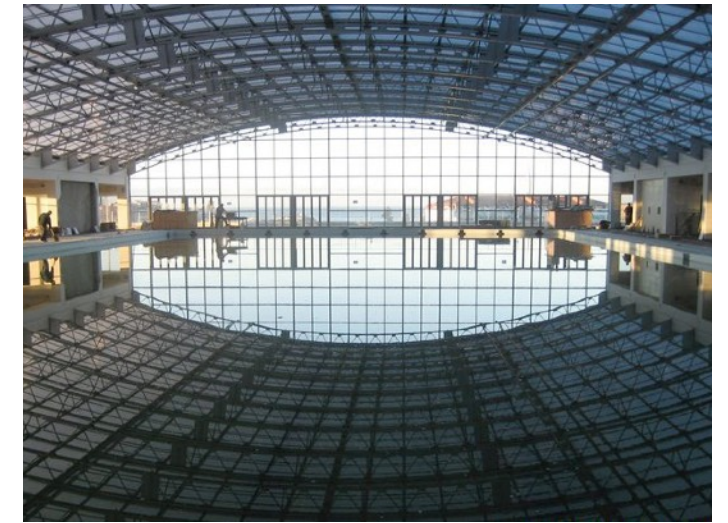
Lucha Rosa @ Moxy DC by Marriott
Washington DC



Lucha Rosa @ Moxy DC by Marriott
Washington DC



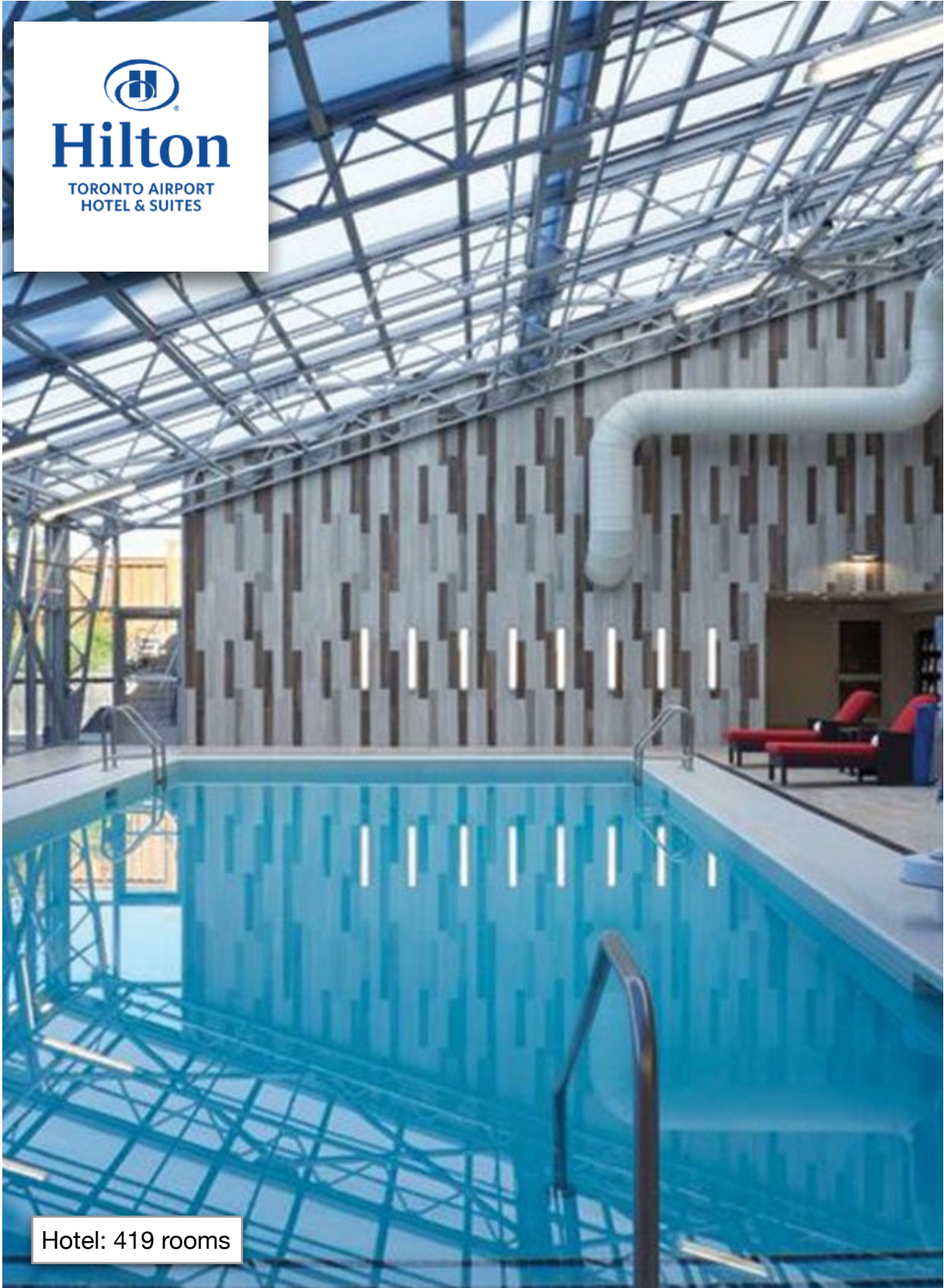
Hotel: 42 rooms



Mardi Plaza Hotel; Batumi Plaza
Adjara, Republic of Georgia



Mardi Plaza Hotel; Batumi Plaza
Adjara, Republic of Georgia



Hotel: 419 rooms



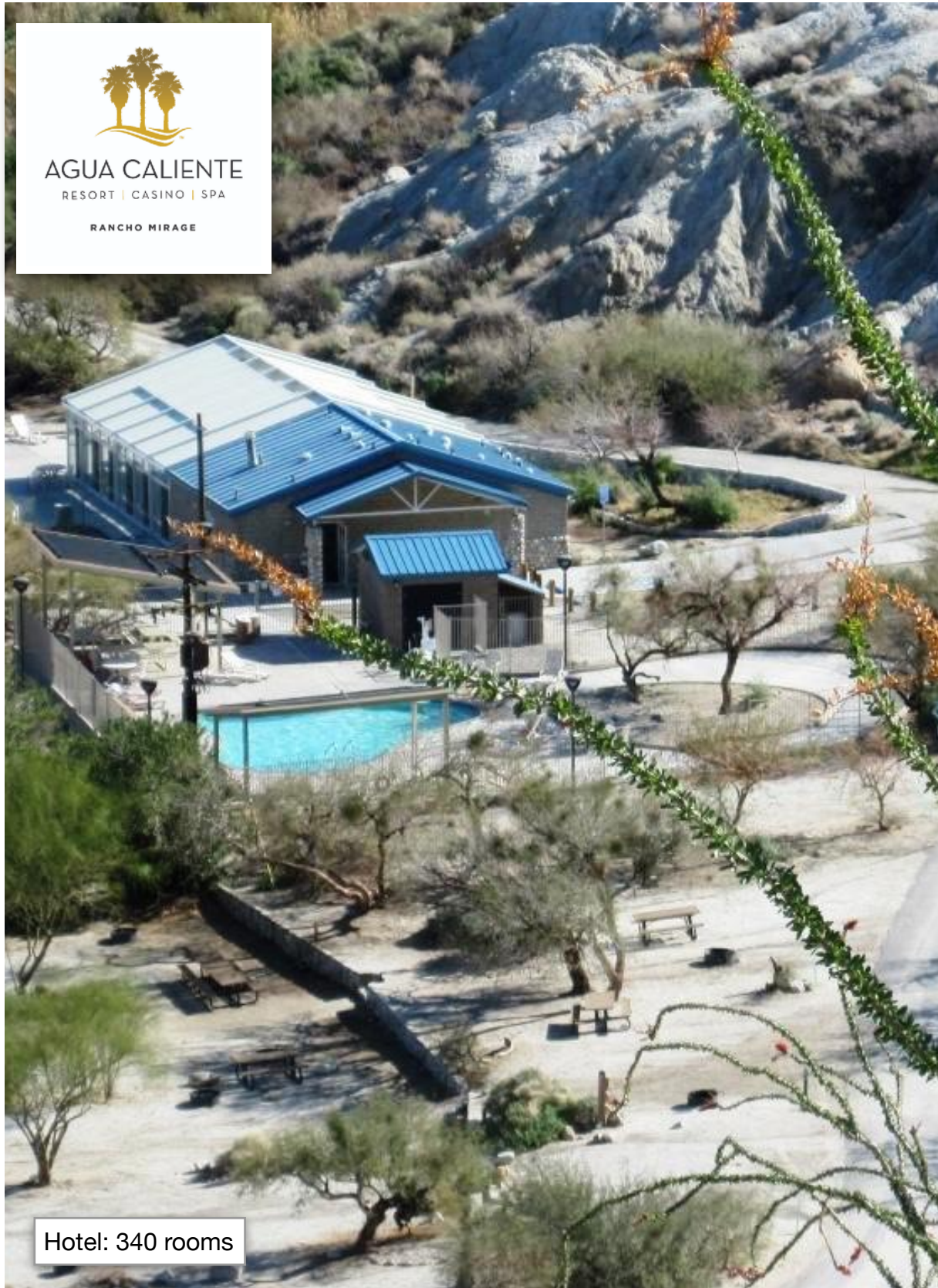
Hilton Hotel
Toronto



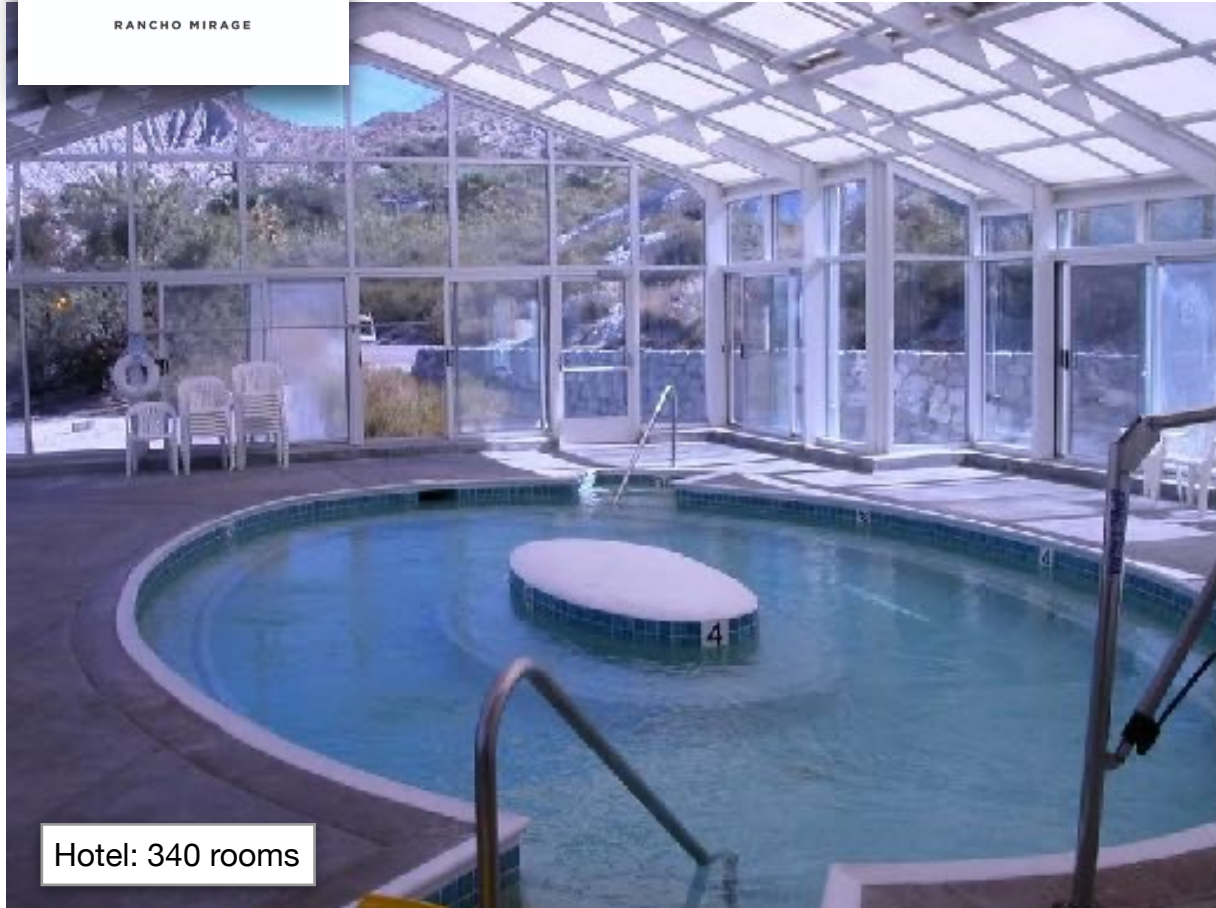
Grand Cascades Lodge - Crystal Springs Resort
Hamburg NJ



Grand Cascades Lodge - Crystal Springs Resort
Hamburg NJ



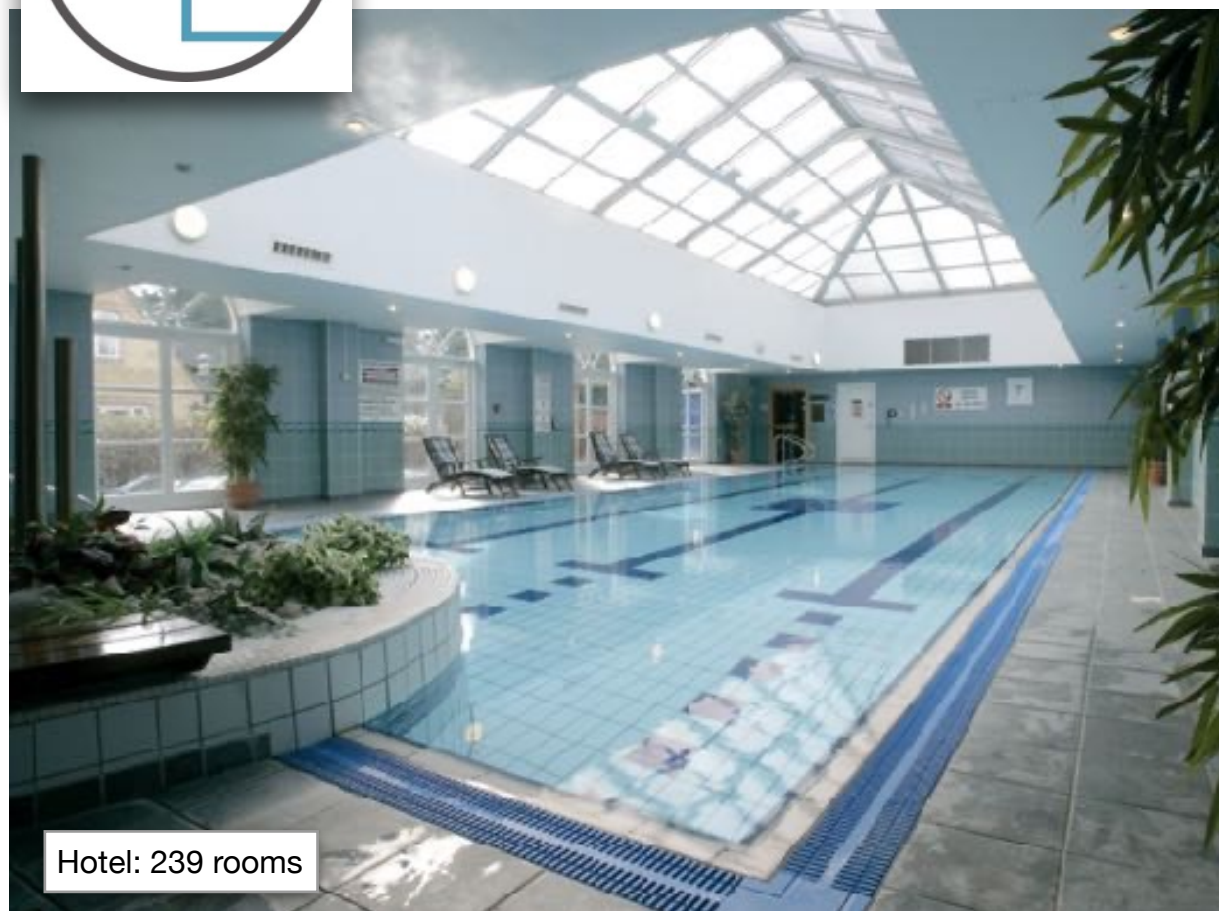
Agua Caliente Casino Resort
Rancho Mirage, California



Agua Caliente Casino Resort
Rancho Mirage, California



Cricket St. Thomas Hotel and Leisure Club
Somerset, UK



Cricket St. Thomas Hotel and Leisure Club
Somerset, UK

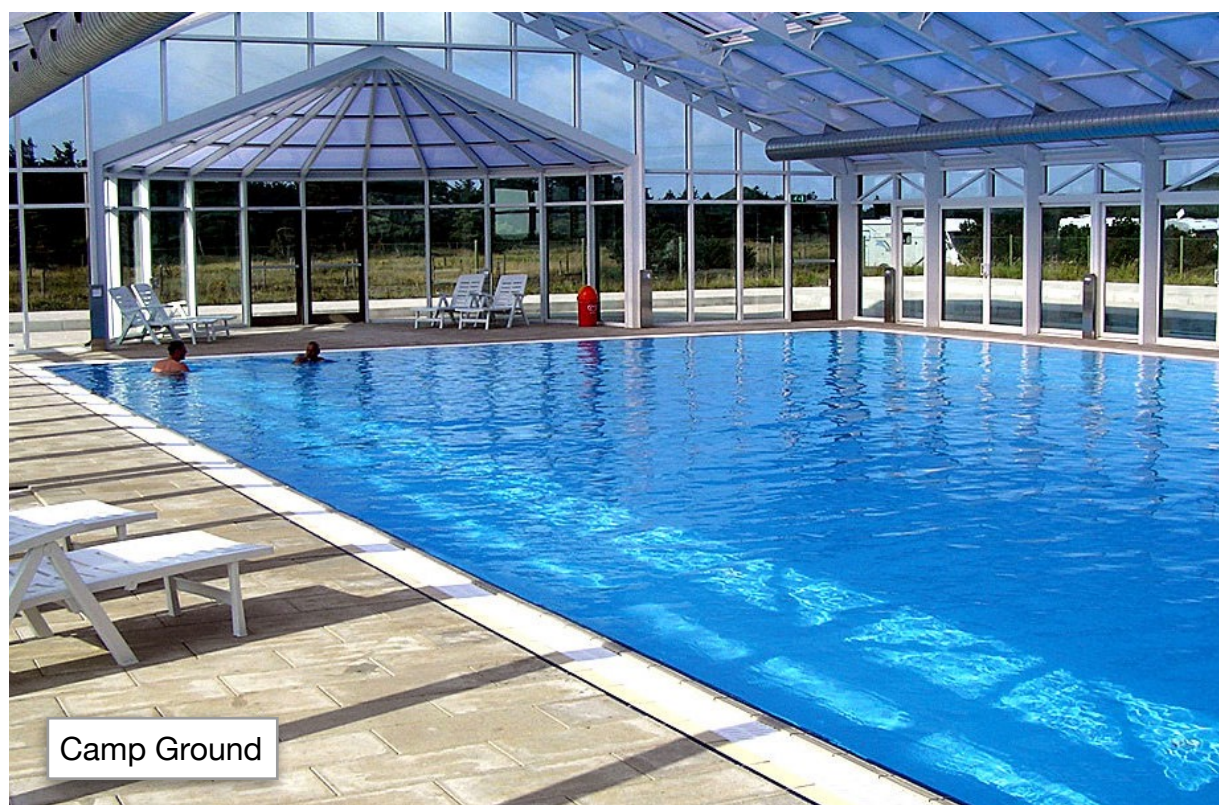



Lamplighter Inn
& Conference Centre



Best Western Plus Lamplighter Inn
London Ontario





Norre Lyngvig Camping
Hvide Sande, Denmark

Hotel Waterparks



Waterparks



Listed are just a few of the many waterpark projects that OpenAire has completed.

- Watiki Waterpark Rapid City, SD
 - 30,000 sf
- Water-Zoo Waterpark, Clinton, OK
 - 30,000 sf
- Pump House Waterpark, Jay Peak, VT
 - 50,000 sf
- Aquapark Terminal, Kiev, Ukraine
 - 220,000 sf
- Silverleaf at the Villages, Tyler, TX
 - 19,000 sf
- South Dakota, Rapid City, SD
 - 8,100 sf
- Americana Waterpark, Niagara Falls, ON
 - 25,000 sf
- Epic Waters, Grand Prairie, TX
 - 62,000 sf
- Kalahari Poconos, Pocono Mountains, PN
 - 220,000 sf
- Pirates Cay Waterpark (Fox River), Sheridan, IL
 - 19,000 sf
- Cape Codder Waterpark, Hyannis, MA
 - 30,000 sf
- Zehnders, Frankenmuth, MI
 - 50,000 sf
- Big Splash, French Lick, IN
 - 40,000 sf
- Aqua Sferra, Donetsk, Ukraine
 - 70,000 sf
- Tropicana Waterpark, Stadthagen, Germany
 - 70,000 sf
- The Cove at Lakefront, Little Elm, Texas
 - 40,000 sf

COMING SOON

- OWA Waterpark, Foley, Alabama
 - 65,000 sf
- ShowBoat Waterpark Atlantic City, NJ
 - 100,000 sf





Hotel: 1331 rooms

100,000SF
LARGEST BEACHFRONT
SINGLE RETRACTABLE
ROOF WATERPARK IN THE
WORLD



Hotel: 1331 rooms

Island Waterpark @ Showboat Resort - COMING SOON
Atlantic City, New Jersey





Island Waterpark @ Showboat Resort - COMING SOON
Atlantic City, New Jersey



Hotel: 1331 rooms

Island Waterpark @ Showboat Resort - COMING SOON
Atlantic City, New Jersey



Island Waterpark @ Showboat Resort - COMING SOON
Atlantic City, New Jersey



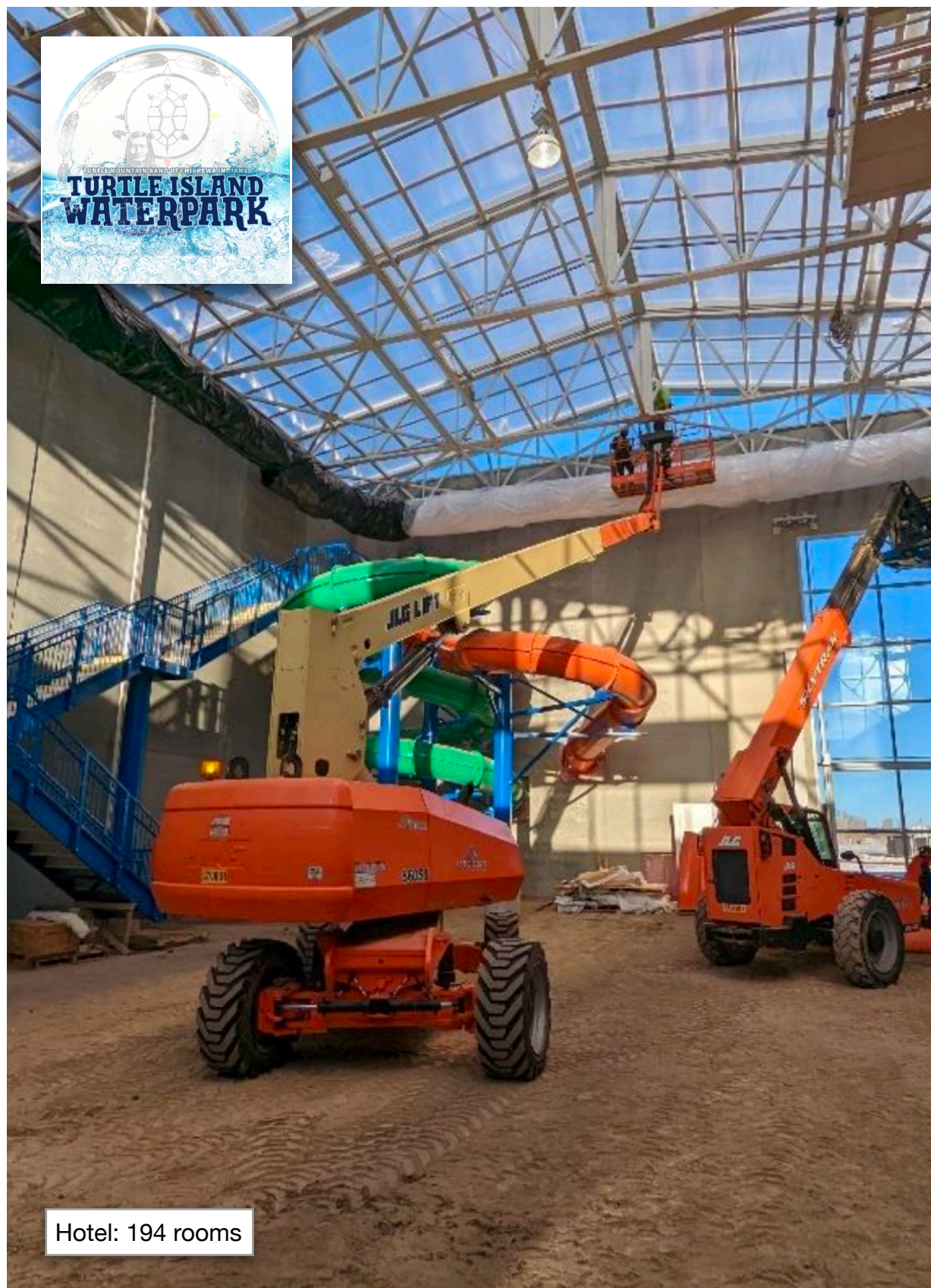
Island Waterpark @ Showboat Resort - COMING SOON
Atlantic City, New Jersey



WATERPARK @ SKY DANCER CASINO



Turtle Island Waterpark @ Sky Dancer Casino
For the Turtle Mountain Band of Chippewa Indians, Belcourt, ND



Turtle Island Waterpark @ Sky Dancer Casino
For the Turtle Mountain Band of Chippewa Indians, Belcourt, ND

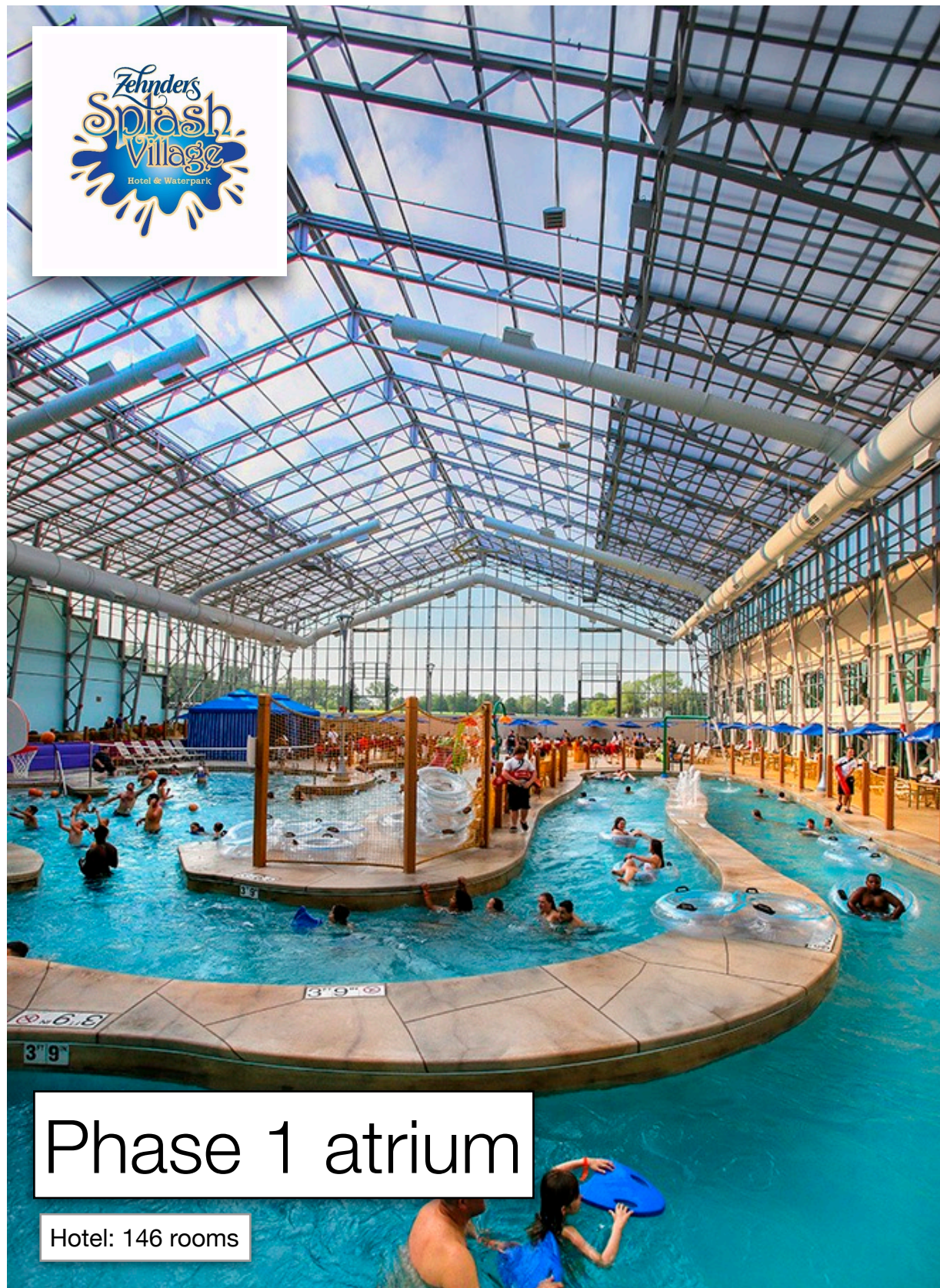


OpenAire continues to work with Zehnder's ownership to renovate their facility.

2014- In Phase 1 a 30,000sf Atrium was added to the resort.

2020 - In Phase 2 the ROTTEN roof and walls were ripped off and replaced with a NEW retractable roof and operable walls





Zehnder's Splash Village Waterpark
Frankenmuth, MI



Phase 1 atrium

Hotel: 146 rooms





Phase 2a ROOF

Hotel: 146 rooms

Zehnder's Splash Village Waterpark
Frankenmuth, MI



Phase 2a ROOF

Hotel: 146 rooms



Phase 2b WALLS

Hotel: 146 rooms

Zehnder's Splash Village Waterpark
Frankenmuth, MI



Phase 2b WALLS

Hotel: 146 rooms







Kalahari Resort Poconos, Biggest Indoor Waterpark in the USA
Pocono Mountains, Pennsylvania

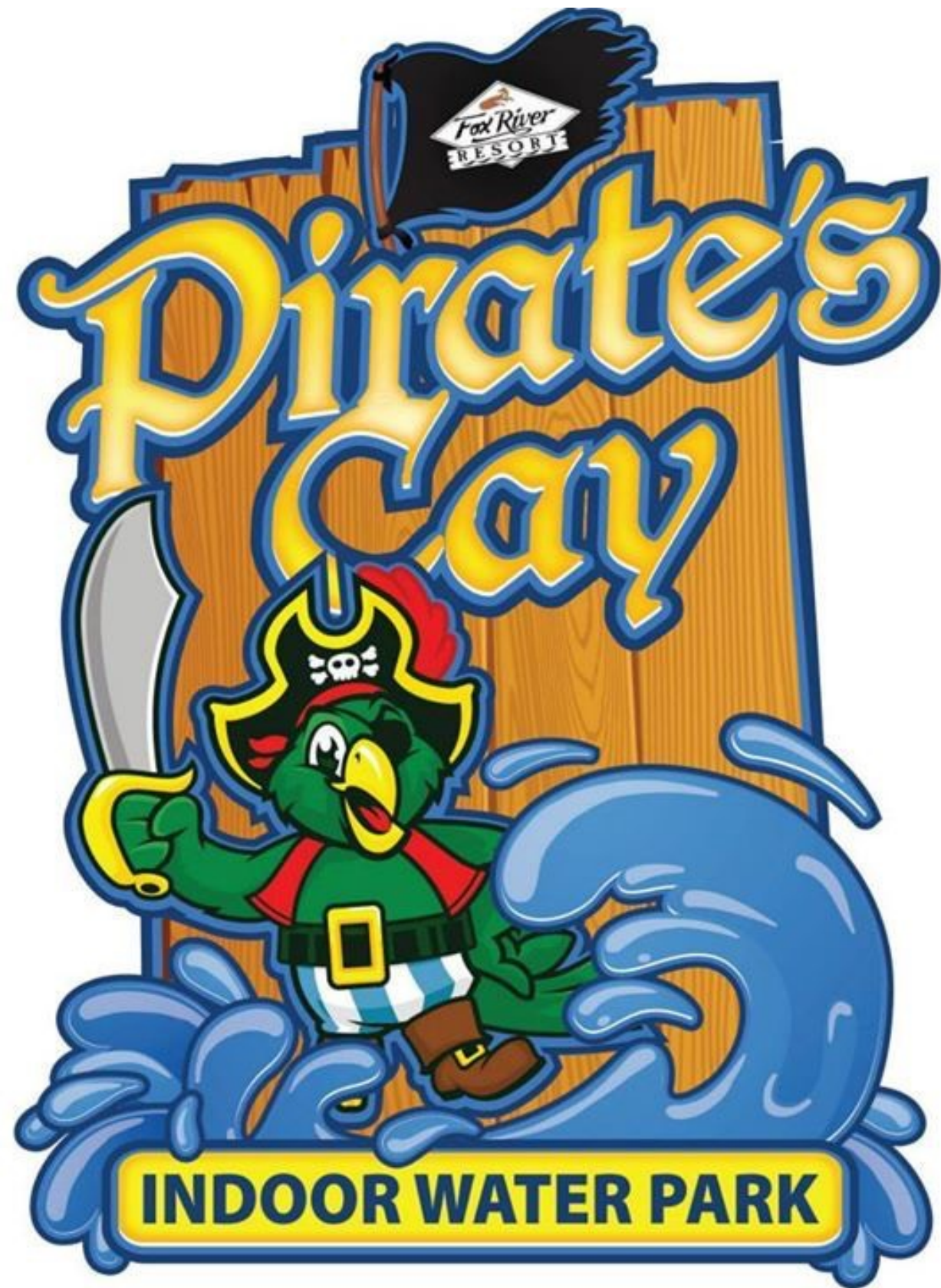


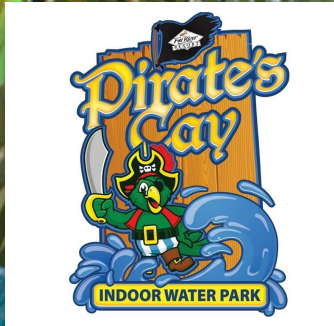
Kalahari Resort Poconos, Biggest Indoor Waterpark in the USA
Pocono Mountains, Pennsylvania



Hotel: 884 rooms

Kalahari Resort Poconos, Biggest Indoor Waterpark in the USA
Pocono Mountains, Pennsylvania



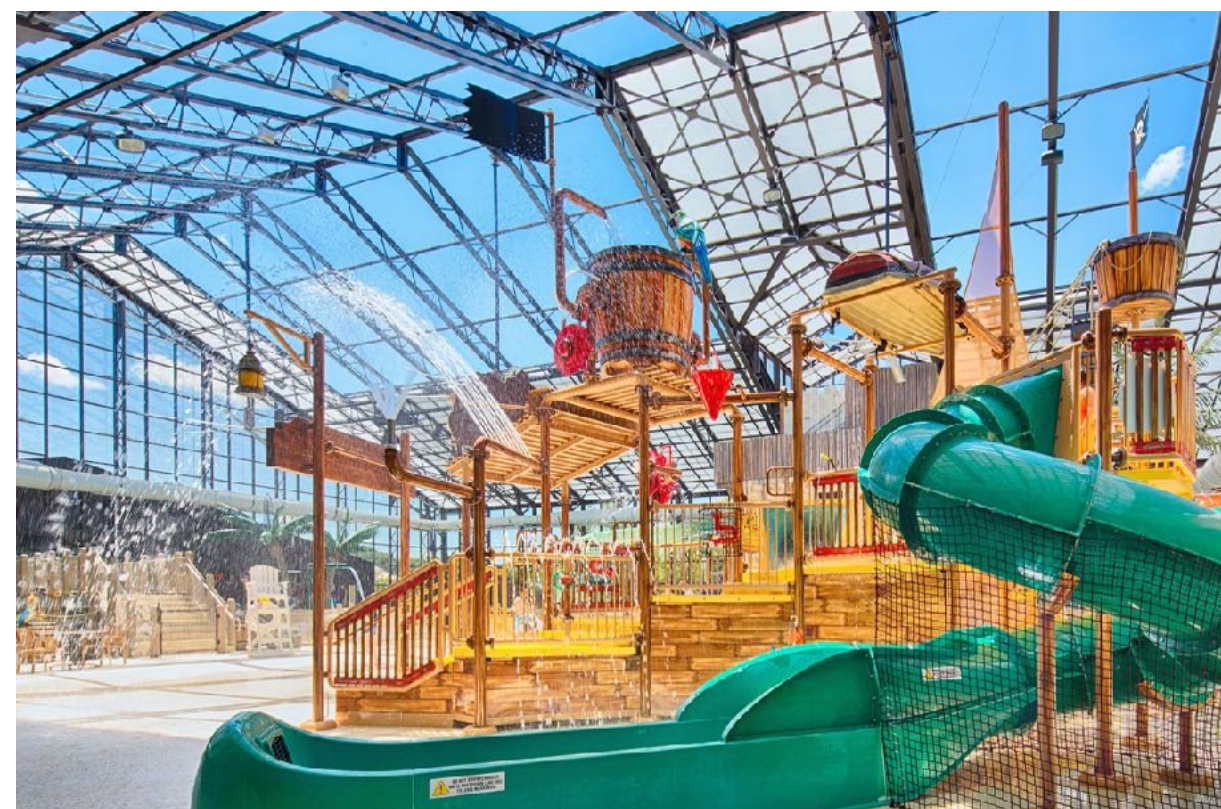


Hotel: 332 rooms

Pirates Cay Waterpark at Fox River Resort, Holiday Inn Club
Sheridan, Illinois



Pirates Cay Waterpark at Fox River Resort, Holiday Inn Club
Sheridan, Illinois



Pirates Cay Waterpark at Fox River Resort
Sheridan, Illinois

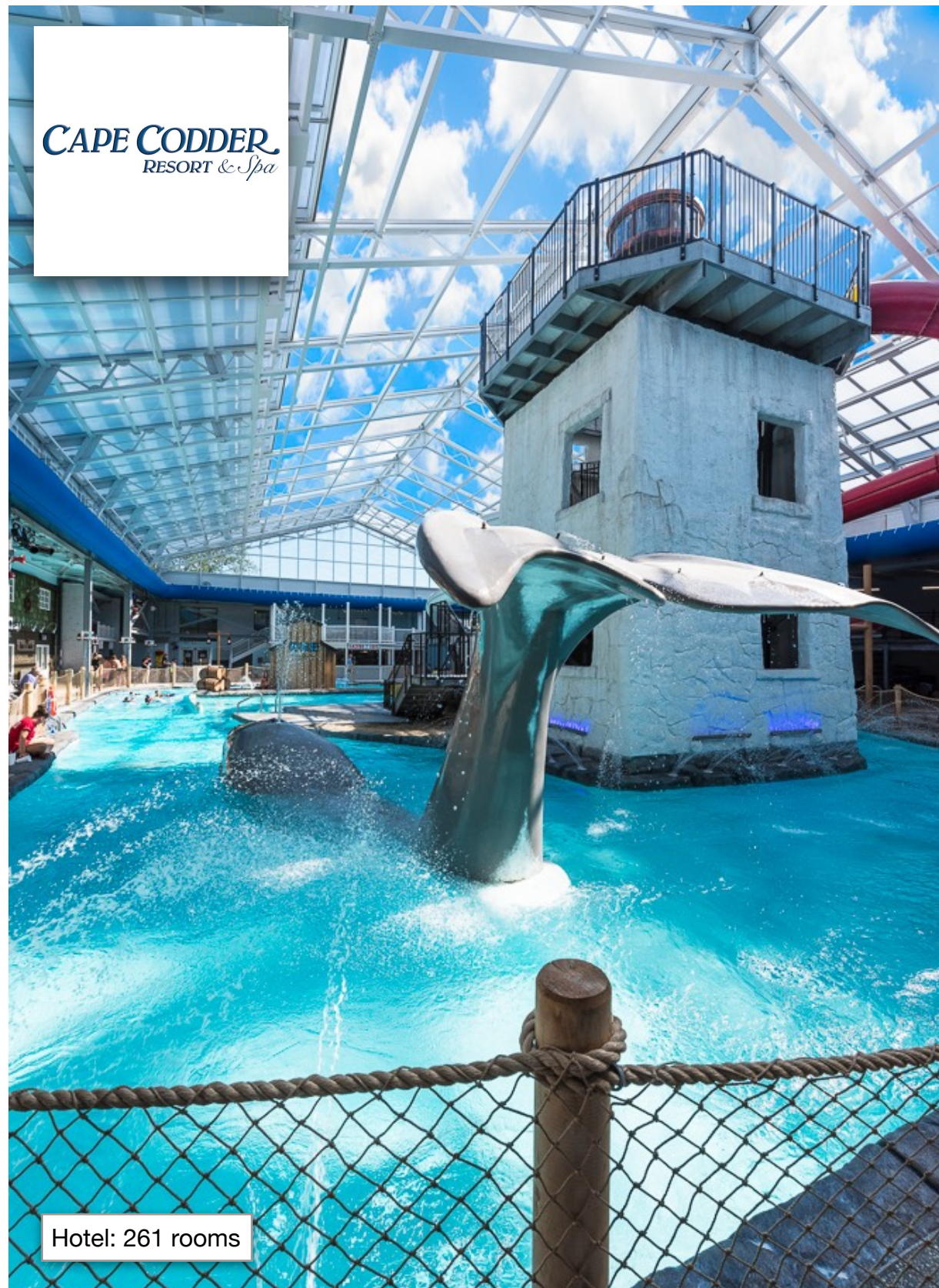
CAPE CODDER

RESORT & Spa

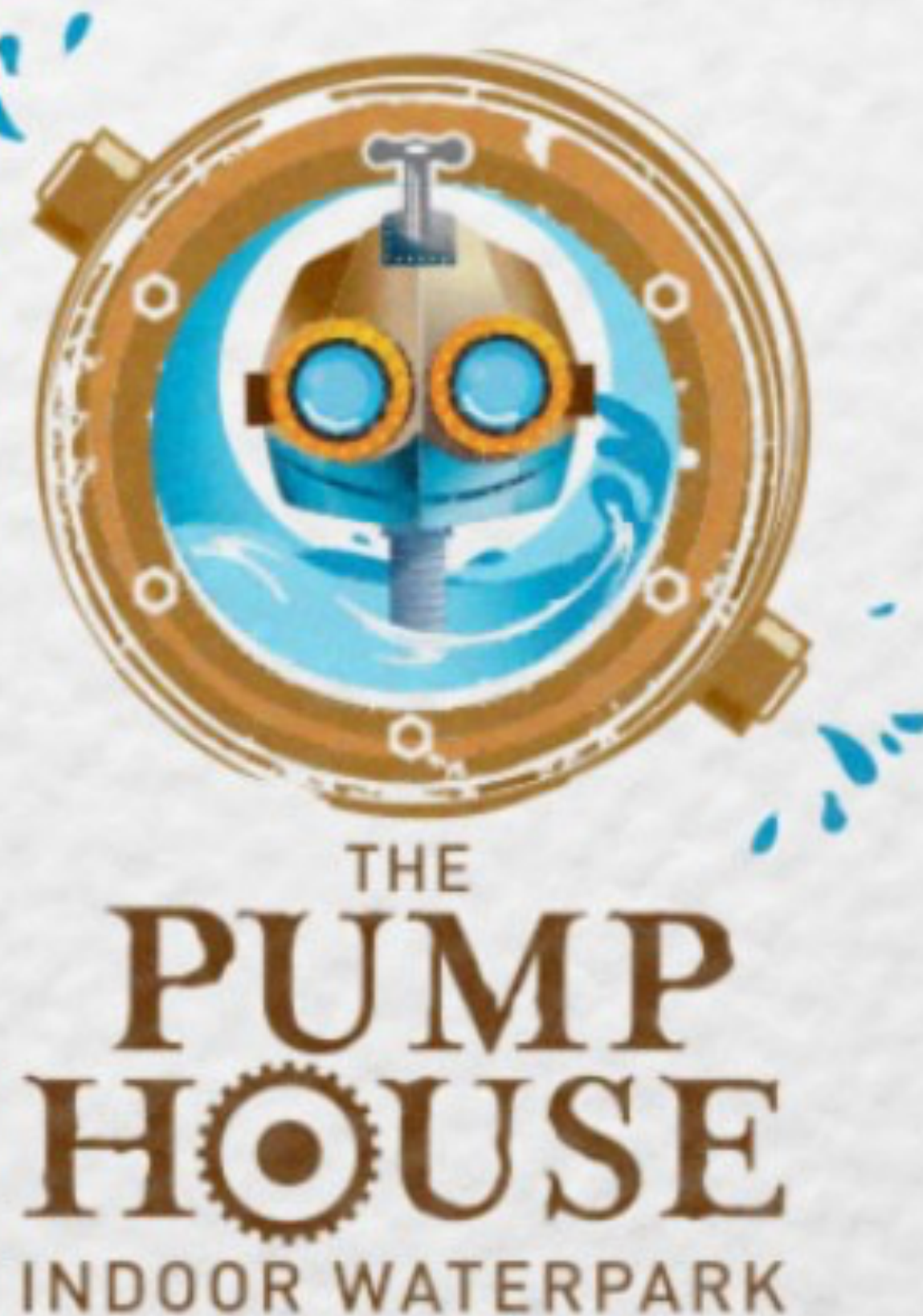
CAPE CODDER
RESORT & Spa

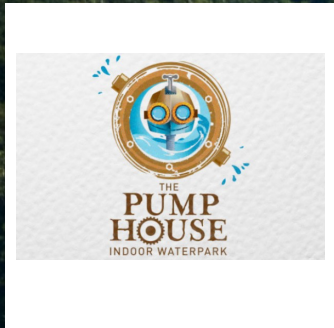
Hotel: 261 rooms

Cape Codder Resort and Spa Waterpark
Hyannis, Massachusetts



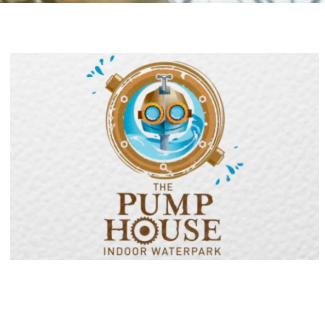
Cape Codder Resort and Spa Waterpark
Hyannis, Massachusetts





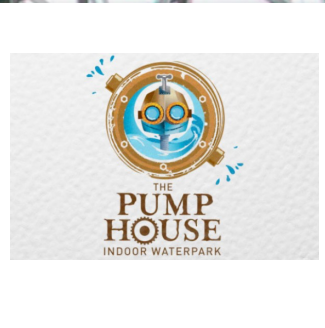
Hotel: 261 rooms

Pump House Indoor Water Park
Jay Peak Resort, Vermont USA



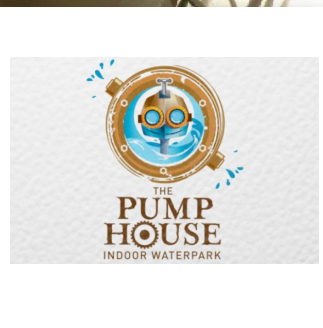
Hotel: 261 rooms

Pump House Indoor Water Park
Jay Peak Resort, Vermont USA



Hotel: 261 rooms

Pump House Indoor Water Park
Jay Peak Resort, Vermont USA



Pump House Indoor Water Park
Jay Peak Resort, Vermont USA





Hotel: 154 rooms

Big Splash Adventure Waterpark
French Lick, IN, USA



Hotel: 154 rooms

Big Splash Adventure Waterpark
French Lick, IN, USA



Hotel: 154 rooms



Big Splash Adventure Waterpark
French Lick, IN, USA



*Holiday Inn
Club
Vacations®*

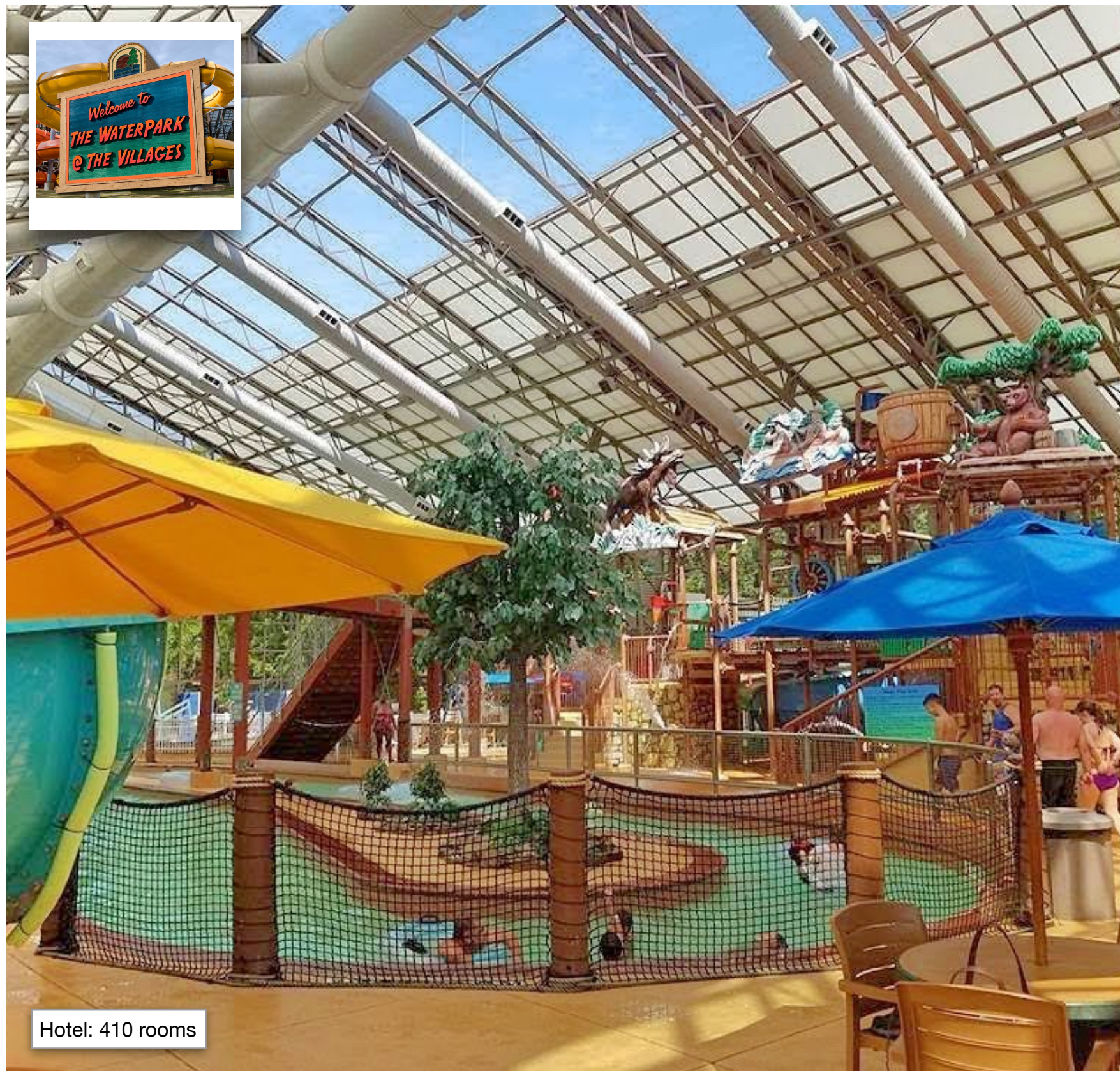


WATERPARK RESORT



Hotel: 410 rooms

The Waterpark at the Villages, Silverleaf Resort Holiday Inn Vacation Club
Flint, Texas, USA



The Waterpark at the Villages, Silverleaf Resort Holiday Inn Vacation Club
Flint, Texas, USA



Hotel: 410 rooms

The Waterpark at the Villages, Silverleaf Resort Holiday Inn Vacation Club
Flint, Texas, USA



Hotel: 410 rooms

The Waterpark at the Villages, Silverleaf Resort Holiday Inn Vacation Club
Flint, Texas, USA





Hotel: 212 rooms

Water-Zoo Indoor Waterpark
Clinton, Oklahoma



Water-Zoo Indoor Waterpark
Clinton, Oklahoma



Hotel: 212 rooms



Water-Zoo Indoor Waterpark
Clinton, Oklahoma





Hotel: 200 rooms

Waves Indoor Waterpark; Americana Waterpark Resort & Spa
Niagara Falls, Canada



Hotel: 200 rooms

Waves Indoor Waterpark; Americana Waterpark Resort & Spa
Niagara Falls, Canada



Waves Indoor Waterpark; Americana Waterpark Resort & Spa
Niagara Falls, Canada



Hotel: 200 rooms

Waves Indoor Waterpark; Americana Waterpark Resort & Spa
Niagara Falls, Canada



WATIKI

INDOOR WATERPARK RESORT



Hotel: 250 rooms

WaTiki Waterpark,
Rapid City, South Dakota



WaTiki Waterpark,
Rapid City, South Dakota



Hotel: 250 rooms

WaTiki Waterpark, Sliders Bar and Grill
Rapid City, South Dakota





Raptor Reef Indoor Waterpark at Triple Play Resort
Coeur d'Alene Idaho USA



Hotel: 95 rooms

Raptor Reef Indoor Waterpark at Triple Play Resort
Coeur d'Alene Idaho USA



Hotel: 95 rooms

Raptor Reef Indoor Waterpark at Triple Play Resort
Coeur d'Alene Idaho USA



AIA
Continuing
Education
Provider

Thank you

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npatterson@openaire.com

General Mailbox
Sales@openaire.com

End Notes:

1. WHO; Natural Ventilation for Infection Control in Health-Care Settings, Edited by: James Atkinson, Yves Chartier, Carmen Lúcia Pessoa-Silva, Paul Jensen, Yuguo Li and Wing-Hong Seto, ISBN 978 92 4 154785 7 (NLM classification:WX 167), © World Health Organization 2009
2. Closed environments facilitate secondary transmission of coronavirus disease 2019 (COVID-19) Hiroshi Nishiura, Hitoshi Oshitani, Tetsuro Kobayashi, Tomoya Saito, Tomimasa Sunagawa, Tamano Matsui, Takaji Wakita, MHLW COVID-19 Response Team, Motoi Suzuki, medRxiv 2020.02.28.20029272; doi: <https://doi.org/10.1101/2020.02.28.20029272>
3. Energy efficiency in indoor aquatic facilities. Thoughtful choices yield significant energy savings, by Gary Lochner, Unison Comfort Technologies, innoventair.com
4. The Benefits of Natural Light: Research supports daylighting's positive effect on building performance and human health. Kevin Van Den Wymelenberg. architecturallighting.com; March 19, 2014
5. *ibid.*
6. Energy efficiency in indoor aquatic facilities. Thoughtful choices yield significant energy savings, by Gary Lochner, Unison Comfort Technologies, innoventair.com
7. <https://www.aluminum.org/aluminum-advantage/aluminum-101>
8. <https://www.aluminum.org/product-markets/building-construction>
9. *ibid.*