



1. Title: MGM Resorts International, MGM National Harbor Employment Center
 7100 Oxon Hill Road, Oxon Hill, MD 20744

2. Project Description

The MGM National Harbor Employment Center is a neighboring facility and center for employment recruiting and training for MGM National Harbor new employees. MGM Resorts International opened the facility in June 2016. The Project pursued Gold Certification under LEED v4 reflecting MGM International Resort’s commitment to environmentally minded design choices and use of cutting edge innovation in renovation and construction to integrate building efficiency, sustainable operations, and occupant comfort and productivity.

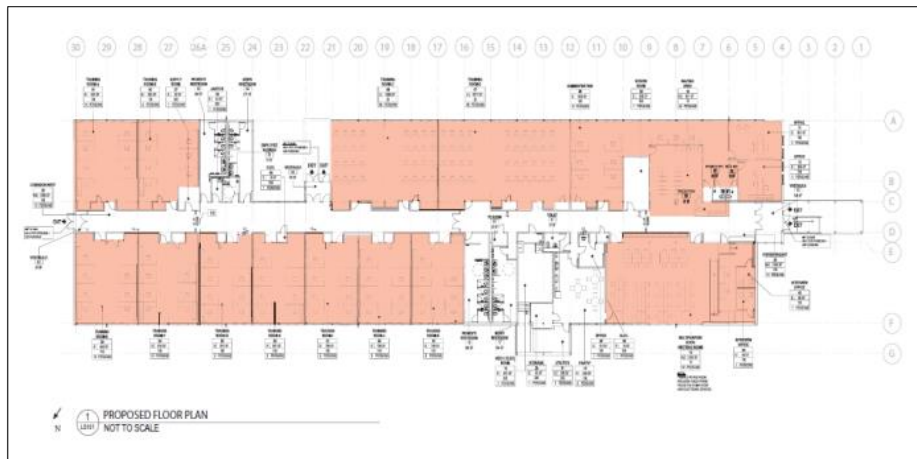


Former Thomas Addison Elementary School

3. LEED Facts

Building:	MGM National Harbor Employment Center	Location and Transportation:	6/16
Owner:	MGM Resorts International	Sustainable Sties:	5/10
Date Completed:	June 21, 2016	Water Efficiency:	4/11
Location:	Oxon Hill, MD	Energy and Atmosphere:	13/33
Rating System:	USGBC LEED Building Design and Construction, version 4	Materials and Resource:	9/13
Certification Achieved:	LEED Gold	Indoor Environmental Quality:	15/16
		Innovation:	6/6
		Regional Priority:	2/4
		Total Points Achieved:	60/110

4. Overview



MGM National Harbor Employment Center Floor Plan

5. Project Team

Owner/Developer:	MGM Resorts International
Architect:	AREL Architects, Inc.
General Contractor:	Gilford Corporation and Kinsley Construction (Joint Venture)
HVAC Engineer:	Setty & Associates
Commissioning Authority:	Setty & Associates and Questions & Solutions Engineering
LEED Consultant:	Encore Sustainable Design

6. Strategies

MGM National Harbor Employment Center specific design goals at the former Thomas Addison School property:

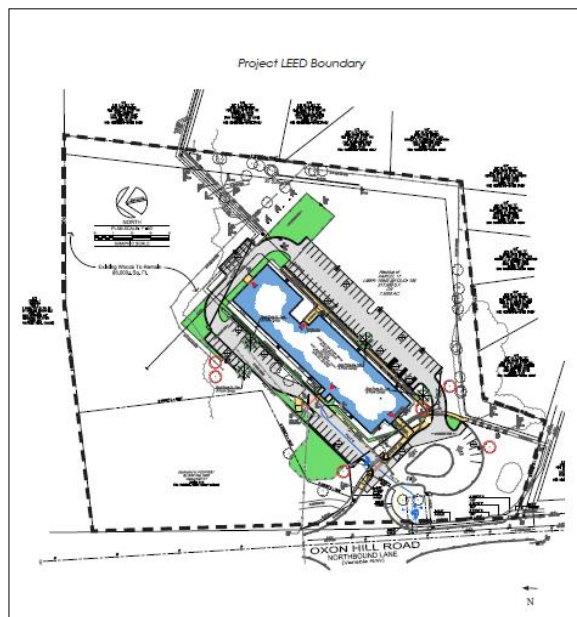
1. Reuse the abandoned building shell as much as feasibly possible;
2. Program the MGM National Harbor Employment Center to maximize use of the existing building footprint;
3. Provide space that promotes occupants productivity, comfort and well-being for full time employees, transient occupants and visitors;
4. Update building systems and infrastructure to include energy efficient plumbing facilities, lighting fixtures, HVAC and audio/visual equipment.

Site Details

The Project site, the former Thomas Addison School property, is located at 7100 Oxon Hill Road. The 9.2 acre site is approximately 3,800 feet southeast of MGM National Harbor; 4,000 feet south of Interstate 95; and 2,500 feet west of Indian Head Highway (MD Rte. 210). The original school building (approx. 20,000 square feet) was completed in 1957 and was constructed with a reinforced concrete slab on grade, steel structure, with masonry exterior walls and interior partitions. An addition (5,000 +/- sf) of the same building materials was constructed in 1960 to the east end of the original building. Utilities provided to the building include electricity, natural gas, public water/sewer, and telephone services.

Project Scope

Scope of the MGM National Harbor Employment Center included upgrades and renovations to the existing site and building. Design focus accommodated the employment recruiting and training for MGM National Harbor and in general, kept the exterior envelope and structural systems of the building intact with very few modifications. The site was improved with new asphalt parking and associated storm water management that includes new parking spaces. A new water service line with a meter vault was installed on-site for the required sprinkler system's demand. The interior of the building underwent renovations to accommodate training and interview rooms, administrative offices and functional space. The work included providing and installing new HVAC, electrical, plumbing, fire life safety (fire alarm and sprinklers), and plumbing systems. New windows through-out, upgraded bathrooms and interior finishes were also included in the renovations. The scope of work included associated demolition with a limited amount of hazardous abatement and the construction of new doors, wall, windows, and described finishes.



MGM National Harbor Employment Center LEED Project Boundary

LEED Category: Location and Transportation

Surrounding Density & Diverse Uses

The MGM National Harbor Employment Center falls within a densely populated area of people and existing infrastructure. Choosing this site helps to conserve and protect wildlife habitats. The close proximity of this Project to a diverse number of public uses promotes walkability and encourages daily physical activity.

Green Vehicles

The MGM National Harbor Employment Center is promoting the use of electric vehicles (EV) and low-emitting-fuel efficient (LEFE) vehicles. The parking has reserved 5% of LEFE vehicle parking spaces and 2% of EV parking spaces with onsite charging stations in preferred locations as an incentive for using alternatives to conventionally fueled automobiles. This initiative helps to reduce energy consumption, vehicle emissions, and environmental and public health harms associated with motor vehicle use.

LEED Category: Sustainable Sites

Rainwater Management

MGM National Harbor Employment Center uses green infrastructure and low-impact development rainwater management strategies help to mimic the natural hydrology in Oxon Hill. By researching historical rainfall data, this site was designed to manage, on site, 100% of the runoff associated with a rainfall event that falls within the 98% percentile. By managing stormwater onsite this site is helping to reduce runoff volume and improve local water quality of the Lower Potomac Watershed.

Light Pollution Reduction

Light pollution is waste-light that does not increase nighttime safety or utility and unnecessarily consumes energy. The MGM National Harbor Employment Center's design reduces light pollution leading to increased night sky access, and improved nighttime visibility. Installed exterior lighting at the site meets the requirements for sky glow, light trespass, and glare. This helps reduce the amount of light pollution produced by the Project, providing additional human safety and comfort, security, building identification, aesthetics, and way finding.

LEED Category: Water Efficiency

Water Management and Reduction

Updated plumbing in the building uses high-efficiency faucets and fixtures reducing the aggregate indoor water consumption by more than 30%. The Project also installed building-level water metering to track water consumption and will share data to optimize efficiency and improve building performance.

LEED Category: Energy and Atmosphere

Enhanced Refrigerant Management

The MGM sustainability and engineering teams worked together to incorporate the appropriate refrigerants that can help to maximize efficiency while also balancing performance and environmental concerns. The MGM National Harbor Employment Center team selected refrigerants and equipment for all heating, ventilating, air conditioning, and refrigeration (HVAC&R) that help to reduce the emission of compounds that contribute to stratospheric ozone depletion and minimize direct contributions to climate change.

Commissioning

Commissioning is the process of verifying that a building's energy-related systems and equipment are installed and functioning as intended. Commissioning offers quality assurance during all phases of new construction. For the MGM National Harbor Employment Center, the Commissioning Agent scheduled site visits and tests throughout the construction cycle for those energy-related systems which include HVAC, electrical, plumbing, fire safety, and mechanical systems.

LEED Category: Materials and Resources

Building Life-Cycle Impact Reduction

Rehabilitating blighted buildings reduces the energy use and waste associated with construction and operations, as well as demolition and disposal. To maximize on the reuse of the former Thomas Addison Elementary School building, approximately 75% of the surface area of the building was maintained from the pre-renovated structure. By renovating the previously abandoned and blighted building, several strategies employed will help reduce harm done to the environment over the building's entire life cycle: restoration of existing building elements, reuse of building components, and reduced overall building environmental footprint.

Waste Management Goals

Throughout the construction, this Project recycled or salvaged more than 85% (by weight) of the waste generated on-site, exceeding its target of 75% (by weight). Most of this achievement was accomplished through the recycling of asphalt, concrete, and masonry debris generated from site demolition. Waste reduction was achieved through reuse and recycling efforts maintained throughout the entire demolition, disposal and construction process.



The Thomas Addison School *before* and
The MGM National Harbor Employment Center *after* photos

LEED Category: Indoor Environmental Quality

Low-Emitting Materials

In order to reduce concentrations of chemical contaminants that can damage air quality, human health, productivity, and the environment, the products selected for the MGM National Harbor Employment Center comply with industry restrictions on the amount of volatile organic compound (VOC) emissions into indoor air and the VOC content of materials.

Thermal Comfort

Often associated solely with building temperature and control, thermal comfort is a complex mix of the following factors: surface temperature, air temperature, humidity, air movement, metabolic rate, and clothing. The use of sustainable strategies to regulate all of these factors in the MGM National Harbor Employment Center's multioccupant spaces provides quality thermal comfort. This helps to promote occupants' productivity, comfort, and well-being across the facility's offices, administration area, training rooms, multipurpose room, and reception area.

Interior Lighting

Through careful calculation and design, the lighting strategy at the MGM National Harbor Employment Center provides a high quality visual environment in offices and classrooms. By making lighting controls available for both individual and group needs, the lighting strategy helps to eliminate distractions, create visual interest, support interaction and communication, contribute to occupants' well-being, and reduces health problems.

Daylight

Increasing access to daylight has positive behavioral and health effects on humans. Factors such as heat gain/loss, glare control, and visual quality are also considered to ensure the building's performance and employees, transient occupants, and visitor comfort is not compromised. Using both simulated daylight analysis and actual measurements, daylight levels and quality are estimated to support the design process for optimizing daylight.



Classrooms with optimized daylighting

7. Project Scorecard

Y		?		N			
1						Credit Integrative Process 1	
6		0		10		Location and Transportation 16	
		n/a				Credit	LEED for Neighborhood Development Location 16
1						Credit	Sensitive Land Protection 1
		2				Credit	High Priority Site 2
4		1				Credit	Surrounding Density and Diverse Uses 5
		5				Credit	Access to Quality Transit 5
		1				Credit	Bicycle Facilities 1
		1				Credit	Reduced Parking Footprint 1
1						Credit	Green Vehicles 1
5		0		5		Sustainable Sites 10	
Y						Prereq	Construction Activity Pollution Prevention Required
1						Credit	Site Assessment 1
		2				Credit	Site Development - Protect or Restore Habitat 2
		1				Credit	Open Space 1
		3				Credit	Rainwater Management 3
		2				Credit	Heat Island Reduction 2
1						Credit	Light Pollution Reduction 1
4		0		7		Water Efficiency 11	
Y						Prereq	Outdoor Water Use Reduction Required
Y						Prereq	Indoor Water Use Reduction Required
Y						Prereq	Building-Level Water Metering Required
2						Credit	Outdoor Water Use Reduction 2
2		4				Credit	Indoor Water Use Reduction 6
		2				Credit	Cooling Tower Water Use 2
		1				Credit	Water Metering 1
13		4		15		Energy and Atmosphere 33	
Y						Prereq	Fundamental Commissioning and Verification Required
Y						Prereq	Minimum Energy Performance Required
Y						Prereq	Building-Level Energy Metering Required
Y						Prereq	Fundamental Refrigerant Management Required
4		2				Credit	Enhanced Commissioning 6
8		9				Credit	Optimize Energy Performance 18
		1				Credit	Advanced Energy Metering 1
		2				Credit	Demand Response 2
		3				Credit	Renewable Energy Production 3
1						Credit	Enhanced Refrigerant Management 1
2						Credit	Green Power and Carbon Offsets 2
9		0		4		Materials and Resources 13	
Y						Prereq	Storage and Collection of Recyclables Required
Y						Prereq	Construction and Demolition Waste Management Planning Required
5						Credit	Building Life-Cycle Impact Reduction 5
1		1				Credit	Building Product Disclosure and Optimization - Environmental Product Declarations 2
		2				Credit	Building Product Disclosure and Optimization - Sourcing of Raw Materials 2
1		1				Credit	Building Product Disclosure and Optimization - Material Ingredients 2
2						Credit	Construction and Demolition Waste Management 2
15		0		1		Indoor Environmental Quality 16	
Y						Prereq	Minimum Indoor Air Quality Performance Required
Y						Prereq	Environmental Tobacco Smoke Control Required
2						Credit	Enhanced Indoor Air Quality Strategies 2
3						Credit	Low-Emitting Materials 3
1						Credit	Construction Indoor Air Quality Management Plan 1
2						Credit	Indoor Air Quality Assessment 2
1						Credit	Thermal Comfort 1
2						Credit	Interior Lighting 2
2		1				Credit	Daylight 3
1						Credit	Quality Views 1
1						Credit	Acoustic Performance 1
6		0		0		Innovation 6	
1						Credit	Green Education Program 1
1						Credit	Green Cleaning Program 1
1						Credit	Construction and Demolition Waste Management 1
1						Credit	Purchasing - Lamps 1
1						Credit	PBT Source Reduction 1
1						Credit	LEED Accredited Professional 1
2		0		2		Regional Priority 4	
1						Credit	Regional Priority: LT Green Vehicles 1
		1				Credit	Regional Priority: EA Optimize Energy Performance (22% min) 1
1						Credit	Regional Priority: LT Surrounding Density and Diverse Use 1
		1				Credit	Regional Priority: ! Reduced Parking footprint 1
60		4		45		TOTALS Possible Points: 110	
Certified: 40 to 49 points, Silver: 50 to 59 points, Gold: 60 to 79 points, Platinum: 80 to 110							

8. Additional Resources

- MGM National Harbor: <https://www.mgmnationalharbor.com>
- MGM National Harbor Sustainability and Construction: <https://www.mgmnationalharbor.com/en/community/construction.html>
- MGM Resorts International Corporate Social Responsibility: <https://www.mgmresorts.com/csr/>
- MGM Resorts International Corporate Sustainability Division: <https://www.mgmresorts.com/csr/environmental/green-advantage/>