


FANUC


LEED Green Building Certification




LEED (Leadership in Energy and Environmental Design)

is the most widely used green building rating system in the world. LEED provides a framework that project teams can apply to create healthy, highly efficient, and cost-saving green buildings.

 **2.4 million +**
square feet is LEED certified every day with more than 94,000 projects using LEED.

 **Sustainable**
LEED buildings save energy, water, resources, generate less waste and support human health.

 **Value**
LEED buildings attract tenants, cost less to operate and boost employee productivity and retention.

Projects pursuing LEED certification earn points across several categories, including energy use and air quality. Based on the number of points achieved, a project then earns one of four LEED rating levels:

CERTIFIED
40-49 Points



SILVER
50-59 Points



GOLD
60-79 Points



FANUC TARGET RATING

PLATINUM
80+ Points



LEED Green Building Certification

Projects pursuing LEED certification earn points across SEVERAL CATEGORIES, including energy use and air quality. Based on the number of points achieved, a project then earns one of four LEED rating levels:



Location and transportation

- Sensitive Land Protection
- Diverse Uses
- Access to Quality Transit
- Green Vehicles



Sustainable sites

- Open Space
- Rainwater Management
- Heat Island Reduction



Water efficiency

- Outdoor Water Use Reduction
- Indoor Water Reduction
- Water Metering



Energy and atmosphere

- Outdoor Water Use Reduction
- Indoor Water Reduction
- Water Metering



Materials and resources

- LCA impact
- Environmental Product
- Construction and Demolition Waste Management



Indoor environmental quality

- Open Space
- Rainwater Management
- Heat Island Reduction



Innovation

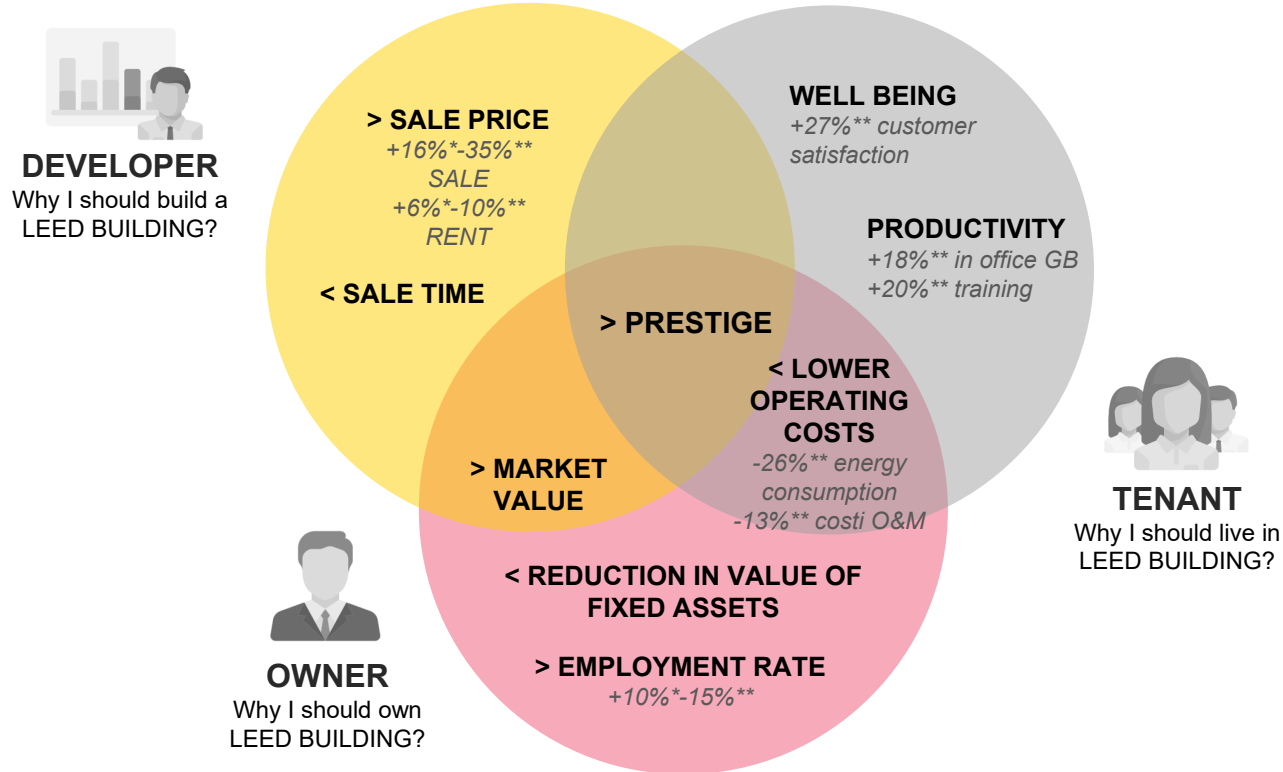
- Green Education
- Fitness
- LEED AP



Regional priority

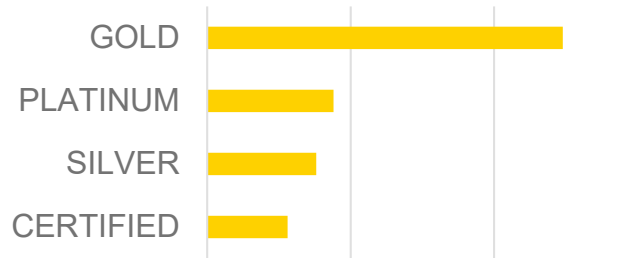
- Green vehicles
- Outdoor water use reduction

Why to pursue LEED certification? - LEED advantages

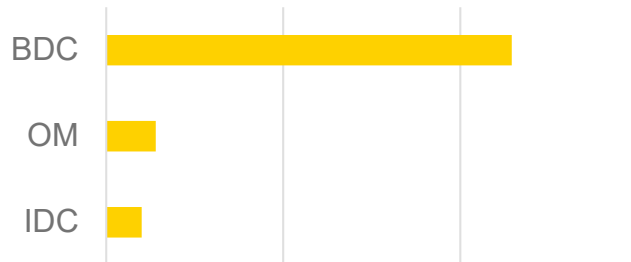


Why to pursue LEED certification? – Market Brief

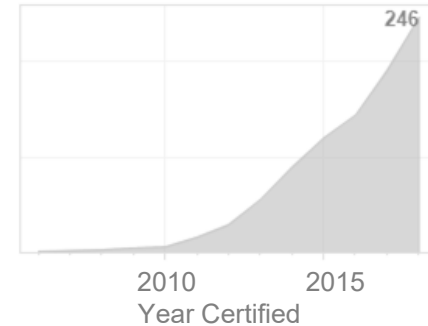
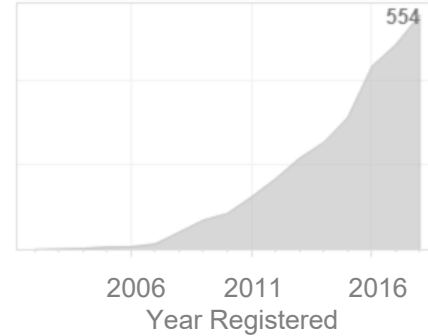
LEED Rating Achievement



LEED Rating Systems



Cumulative LEED Registration



Why to pursue LEED certification? – Certified LEED Buildings – divided by type and sector

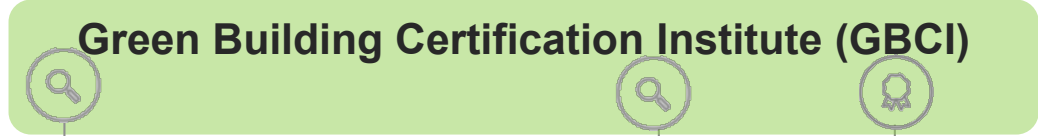
SPACE TYPE	Amount
Office	267
Retail	58
K-12	23
Multy family Residence	23
Lodging	22
Other	20
Warehouse	20
Higher Education	19
Public manufacturing	19
Health Care	15
Militaty Base	13
Laboratory	10
Service	9
Office: Mixed Use	9
Datacenter	4
Educational Facilities	3
Public Order and Safety	2

Owner Sector	Amount
Corporate	208
Investor	182
Local Government	49
Federal Government	32
Non-Profit	18
Higher Education	17
K-12	8
State Government	2

LEED Certification Process

RESPONSABILITY

Green Building Certification Institute (GBCI)



TEKNE

CERTIFICATION PROCESS

Registration



Documentation requirements

Design submission

Design review (GBCI)

Documentation requirements

Construction Submission

Construction Review (GBCI)

Certification awarded









PROJECT PROCESS



Design

Construction

Occupation

Category	Achievable credits	Yes	No
 Location and transportation	16	3	13
 Sustainable sites	10	7	3
 Water efficiency	11	9	2
 Energy and atmosphere	33	27	6
 Materials and resources	13	6	7
 Indoor environmental quality	16	7	9
 Innovation	6	5	1
 Regional priority	4	4	0
Total credits	109	68	41

to achieve GOLD Level the point thresholds is between 60 and 79



Implemented LEED Strategies – Location and transportation

Green Vehicles

In order to reduce pollution by promoting alternatives to conventionally fuelled automobiles, the following strategies have been implemented:

- **6 parking spaces for Green Vehicles** (5,4% of total PS)
- **3 parking spaces equipped with Electrical Vehicle Supply Equipment** (2,7% of total PS).

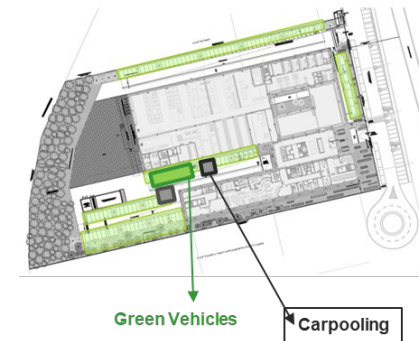


Reduced Parking Footprint

To minimize the environmental harms associated with parking facilities, including automobile dependence, land consumption, and rainwater runoff.

The project achieves the **67% of parking reduction** from the base ratio of LEED requirement.

111 parking spaces (PS) and 6 preferred parking for carpools have been provided.



Implemented LEED Strategies – Sustainable sites

Rainwater Management

We developed different strategies to manage rainwater.

Passive strategies:

- Conserve the **existing wood area** on lot west side (2524m²)
- Design **2290m² of vegetated surfaces**
- Use **porous paving for parking spaces** (1420m²)



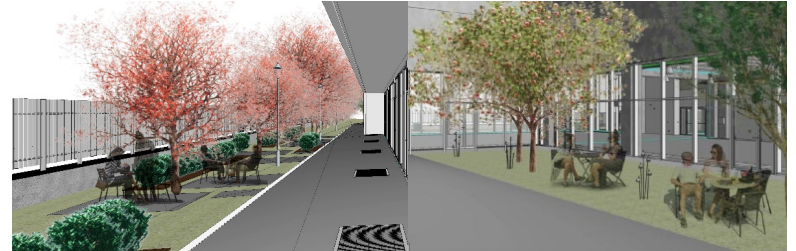
Open Space

OUTDOOR SPACE > 30% of total site area

More than 25% of that outdoor space is VEGETATED

The rainwater treatment system has been designed to manage rainfall events directly on site, avoiding discharge in Lainate sewage infrastructure. The impervious surfaces convey rainwater through:

- **16 dry wells**
- **2 rainwater harvests** (fostering irrigation system and WC flushes).



Implemented LEED Strategies – Water efficiency

Indoor Water Use Reduction

The indoor water use will be **reduced by 100%**

- WC double flush, aerators washbasin shower
- Use Rainwater for WC flush



Outdoor Water Use Reduction

The outdoor water use will be reduced by 100% thanks to:

- Use of native plant species
- Use of rainwater for irrigation purposes
- Use of Drop Irrigation System



Implemented LEED Strategies – Energy and atmosphere

Green power and carbon off-sets

FANUC engages a contract for the supplies of green power from qualified resources for 100% of energy demand



Renewable energy production

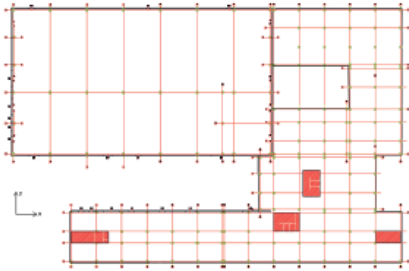
The Percent of renewable energy produced from the photovoltaic system will be 21% of the total building energy cost





Implemented LEED Strategies – Material and resources

Life Cycle Assessment

The life-cycle assessment of the project's structure and enclosure demonstrates more than 10% reduction, compared with a baseline building, of the six impact categories.





Baseline Building

 5899 Tons CO₂e
 9 kgCO₂e/m²/year

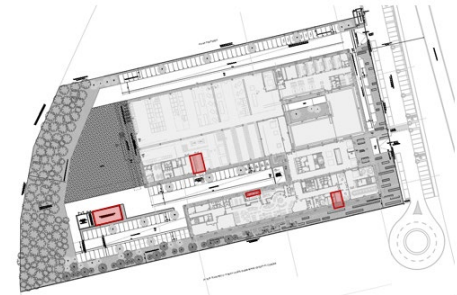


FANUC Building

 4167 Tons CO₂e
 6 kgCO₂e/m²/year

Storage and collection of recyclables

There will be dedicated areas accessible to waste haulers and building occupants for the collection and storage of recyclable materials for the entire building.



 Waste area storage

Implemented LEED Strategies – Indoor environmental quality

Enhanced indoor air quality strategies

In the main entrance of the building will be present interlocking door control system in order to prevent contamination and reduce the indoor pollutants and particulates.



Quality view and daylight

The high percentages of transparent surfaces will be guarantee high internal comfort increasing the NATURAL LIGHT, reducing the use of artificial light and giving to the building occupants a connection to the natural outdoor environment by providing quality views.



Implemented LEED Strategies – Innovation

LEED Accredited Professional

A LEED Accredited Professional (LEED AP) with specialty can be a valuable resource in the LEED certification process. The presence of a LEED AP with specialty helps project team members understand the rating system, the importance of interactions among the prerequisites and credits, and the LEED application process.



Green Building Education

To take advantage of the educational value of the green building features of a project, the following two strategies are included in the educational program:

- A comprehensive signage program built into the building's spaces to educate the occupants and visitors of the benefits of green buildings. This program include signs to call attention to water-conserving landscape features, to use staircases rather than elevator...
- a website (pdf of the website) or electronic newsletter pdf of the hardcopy)

LEED TARGET RATING: GOLD

Y	?	N			
1			Credit	Integrative Process	1
3 0 13 Location and Transportation 16					
		16	Credit	LEED for Neighborhood Development Location	16
		1	Credit	Sensitive Land Protection	1
		2	Credit	High Priority Site	2
1		4	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
7 1 2 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
9 0 2 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
6			Credit	Indoor Water Use Reduction	6
		2	Credit	Cooling Tower Water Use	2
1			Credit	Water Metering	1
27 1 5 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
17		1	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
1	1		Credit	Green Power and Carbon Offsets	2

6	0	7	Materials and Resources		13
Y			Prereq	Storage and Collection of Recyclables	Required
Y			Prereq	Construction and Demolition Waste Management Planning	Required
3		2	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
		2	Credit	Building Product Disclosure and Optimization - Material Ingredients	2
2			Credit	Construction and Demolition Waste Management	2

7	2	7	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
1		2	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
		3	Credit	Daylight	3
1			Credit	Quality Views	1
		1	Credit	Acoustic Performance	1

5	1	0	Innovation		6
1			Credit	Innovation: EP-SS-Rainwater Management	1
1			Credit	Innovation: EP-WE-Indoor Water Use Reduction	1
1			Credit	Innovation: In-Green Building Education	1
1			Credit	Innovation: Plot-Quality Views in Non-regularly Occupied Spaces	1
		1	Credit	Innovation: Plot-Enhanced acoustical performance - exterior noise control	1
1			Credit	LEED Accredited Professional	1

4	0	0	Regional Priority		4
1			Credit	Regional Priority: LT-Reduced Parking Footprint	1
1			Credit	Regional Priority: LT-Green Vehicles	1
1			Credit	Regional Priority: SS-Rainwater Management	1
1			Credit	Regional Priority: SS-Light Pollution Reduction	1

69	5	36	TOTALS		Possible Points: 110
Certified: 40 to 49 points, Silver: 50 to 59 points, Gold: 60 to 79 points, Platinum: 80 to 110					