

CASE STUDY

WENDLER INTERLINING VIETNAM FACTORY

The idea of this development is to create a comfortable factory environment: Factory filled with natural lights and beautiful view. Even though Wendler Interlining Vietnam Factory is located in Tam Thang Industrial Park, it is expected to become a very unique factory. The developer team has put their all effort here is to create a factory which is in harmony with its amazing location.



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WENDLER INTERLINING VIETNAM FACTORY	
Location	Lot D3, Tam Thang IP, Tam Ky Town, Quang Nam Province, Vietnam
Owner	WENDLER INTERLINING VIETNAM COMPANY LIMITED
Principal Use	Industrial Manufacturing
Gross Floor Area (Square Meter)	13,519.67
Substantial Completion/Occupancy	30/05/2020

Located in lot D3, Tam Thang IP, Tam Ky Town, Quang Nam Province with large area, WENDLER INTERLINING VIETNAM FACTORY is designed to the US Green Building Council (USGBC) "LEED Gold" Certification which will recognize that it has met international environmental design standards. It not only has positive impacts on the environment but also result in significant reduction of operation costs. When designing and constructing the project, WENDLER INTERLINING VIETNAM FACTORY built an innovative green building from the ground – up and reducing energy costs. Light, air, vegetation, relaxation areas, cleanliness, functionality and regulated temperatures contribute not only to the quality of work and life, but also to creativity and the excellence of the product. The architectural project is also accompanied by investments and programs aimed at improving safety at the workplace and environmental sustainability. In this case study, let us introduce you highlight features which make WENDLER INTERLINING VIETNAM FACTORY became a green building.

Highlights

- ✓ Efficient water systems reduce potable water demand by installing water-efficient urinals, toilets, showerheads and faucets.
- ✓ Highest quality facility components selected to reduce chemicals and contaminants in office area.
- ✓ The building use Split system with high efficiency (COP), so, the cost for energy usage is lower than different project.
- ✓ Efficient light with LED lamps having high lighting efficiency.
- ✓ Thermal oil heater use biomass fuel to produce and deliver heat to heating need equipment. This solution not only saves energy consumption but also reduces CO2 emissions.

1 LOCATION & TRANSPORTATION

1.1. Bike parking

The purpose is to promote an environment in which bicycles, pedestrians can safely co-exist. Bicycles are an efficient, enjoyable, and environmentally sound way to travel in city, and we encourage the safe and courteous use of bicycles. We provide long-term bicycle storages for Staffs and short-term bicycle storages for visitors.



1.2. Car parking

To minimize the environmental harms associated with parking facilities, including automobile dependence, land consumption, and rainwater runoff. In the project, Total provided capacity = 04 spaces and Base ratios of Factory = 285 spaces, Parking reduction = 98.6 % from the base ratios. Besides, we provide 1 space for Carpool, 1 space for Green Vehicle and 1 space for Plug – in.



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2 SUSTAINABLE STRATEGIES

2.1. Landscape

Restore more than 33% of previously disturbed area with native and adapted vegetation (trees, shrubs and groundcover) to provide habitat and promote biodiversity. No use the turfgrass to reduce water for irrigation. Good landscape design and use of native, adapted, and drought-tolerant plants can dramatically reduce and even eliminate the need for irrigation while better integrating the building site into its surroundings and attracting native wildlife. Native plants also tend to require less fertilizer and fewer chemical pesticides, which degrade water quality when carried away in stormwater runoff.

2.2. Roof's materials and paving materials

This Project use roofing materials with a solar reflectance index (SRI) valued 85. (Dong A Sheet, in white colour) for factory and parking, white concrete for internal road. These materials help to reduce heat islands to minimize impacts on microclimates and human and wildlife habitats.



2.3. Light Pollution Reduction

Unnecessary outdoor lighting wastes energy and contributes to greenhouse gas emissions. Moreover, constant exposure to artificial lighting may interfere with human metabolism and sleep. At a green factory, WENDLER INTERLINING VIETNAM FACTORY is designed and erection to reduce the light pollution as much as possible. We replace conventional high-energy bulbs by LED light and Wendler Interlining Group Quality Standard

No	Item	Sample picture	Product code	Power
1	LED Street Light		BGC07	120W

3 WATER EFFICIENCY

3.1. Indoor water use

At WENDLER INTERLINING VIETNAM, we know the importance of using water efficiently that will help ensure reliable water supplies today and for future generations. We are reducing potable water demand by installing efficient urinals, toilets, showerheads and faucets to composting systems, to reduce potable water demand. The quality of any alternative source of water used must be taken into consideration based on its application or use.

Moreover, the project reuse treated wastewater for domestic. With all of its various savings technology combined we estimate that the total water reduction can be up to 100%.¹⁴ Any certification of social responsibility at WQN?

No	Item	Sample picture	Product code	Specification
1	Water closet		CAESAR CD1356	3-4.5L per flush
2	Urinal		CAESAR A637	1.9L per flush
3	Lavabo faucet		CAESAR BT228C	1.5L per minute.

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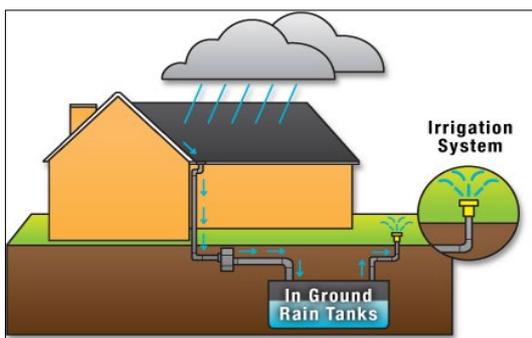
No	Item	Sample picture	Product code	Specification
4	Showerhead		CAESAR S643C	7.5L per minute
5	Kitchen faucet		CAESAR K325C	5.8L per minute

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3.2. Outdoor water use

Semi-automatic system helps to reduce outdoor water consumption. Sprinkler is moveable during the operation with flow rate 6m³/h not continuously in dry season.

Drip system saves 70% water consumption for irrigation.



Moreover, the water supply for irrigation from harvested rainwater help to reduce the municipal potable water.

4 ENERGY & ATMOSPHERE

All lighting of building use LED light to save energy and ecologically friendly. Using occupancy sensor and photo sensor to automatically control lighting in factory and office spaces.

No	Item	Sample picture	Product code	Power
1	LED Highbay		BY239P LED200/CW PSU	200W
2	LED Batten	 TBS023 136LED	TBS023 136LED	1x22W
3	LED Batten		TBS023 236 LED	2x22W
4	LED Downlight		DN035B D200 LED15 PSU WH	16W
5	LED Panel		RC091 LED36S	40W
6	Sensor		Honeywell	

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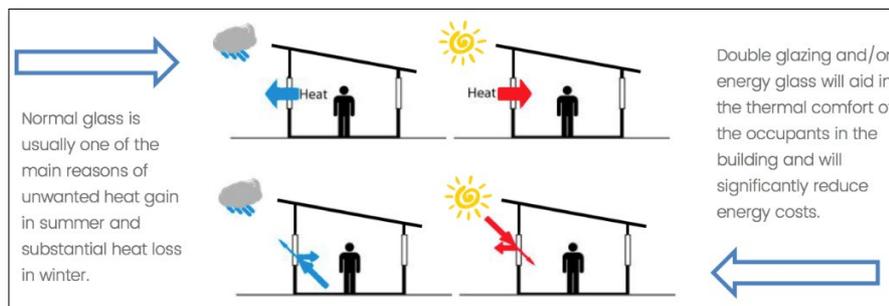
The glazing selected with low U-value to contribute reducing solar radiant come into interior building and decreasing energy lost, in addition, high light transmittance coefficient allows for good day lighting harvesting and help to reduce the need for interior electric lighting, resulting in decreased energy use.

GLASS SPECIFICATIONS	Low-e glass
U-value	3.88
Shading Coefficient (SC)	0.46
Light transmission	37

External wall and roof with insulation keep comfortable conditions, so reduce energy consumption of cooling system.

INSULATION SPECIFICATIONS	Low-e glass
Thermal conductivity (W/m.k)	< 0.043

For cooling, split system with high efficiency is used to saving energy.



5 MATERIAL AND RESOURCES

5.1. Waste management in the construction stage

During the construction stage, WENDLER INTERLINING VIETNAM FACTORY project focus on construction waste management, to reduce at least 75% construction waste onsite. This process helps to divert construction and demolition debris from disposal in landfills and incineration facilities. Redirect recyclable recovered resources back to the manufacturing process and reusable materials to appropriate sites from disposal and whether the materials will be sorted.



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5.2. Waste management in the operation stage

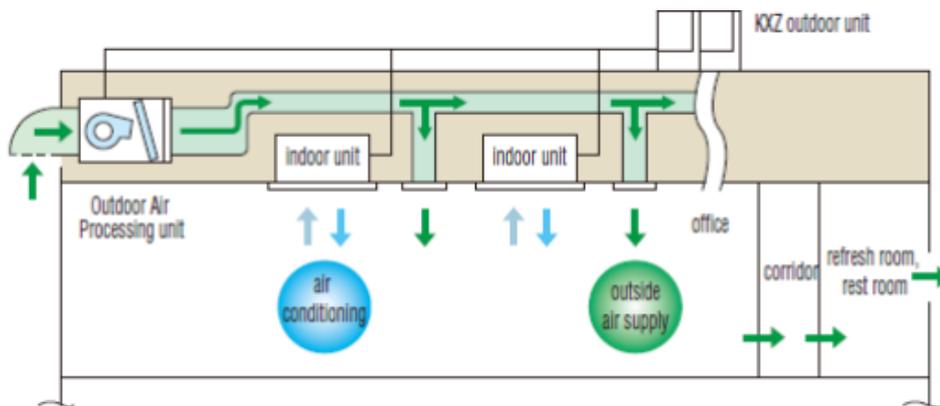
During the operation stage, WENDLER INTERLINING VIETNAM FACTORY project provides dedicated areas accessible to waste haulers and building occupants for the separation, collection, and storage of recyclable materials (mix paper, corrugated cardboard, glass, plastics and metals), hazardous waste area, organic waste area, and glass waste area. This project takes appropriate measures for safe collection, storage, and disposal.



6 INDOOR ENVIRONMENTAL QUALITY

6.1. Cooling and ventilation system

The air quality inside the Office spaces will be controlled by supply fans. All toilets are provided and only ventilated by exhaust fans. Workshop areas and warehouse areas are designed with wall exhaust fans. The fresh air shall be provided into these spaces via the louvers. The ventilation mode of the exhaust system will be based on 6 air change per hour for exhaust air. The Guard house will be designed with mechanical ventilation and cooling.



6.2. No smoking policy

Prohibits smoking inside the building. Design the smoking areas located nearby the Main gate and Trailer parking, at least 25 feet (7.5 meters) apart from all entries, outdoor air intakes, and operable windows.



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WENDLER INTERLINING VIETNAM FACTORY PROJECT LEED TEAM		
Owner	Bach Thanh An	
Project director	Le Ke Duat	AAC CONSTRUCTION., JSC
Project manager	Pham Quang Khoa	AAC CONSTRUCTION., JSC
LEED Consultant	Thu Nguyen	GreenViet