

## SUSTAINABILITY CASE STUDY

### Redwood Kunshan Distribution Centre 1

November 2016



#### LOCATION

The project is located in the Kunshan Hi-Tech Development Zone, Kunshan, China, which is 50 km from Shanghai and 37 km from Suzhou.

This is a development project. ESR bought the land in October of 2013. Construction started around mid-2014 and completed in third quarter of 2015.

#### SUMMARY

ESR Kunshan Distribution Centre, a 2-storey ramp-up logistics facility with leasable area of 61,851 sqm, achieved LEED Gold certification with its innovative design and construction, which optimises energy performance and minimises portable water consumption.

The vision was to construct a logistics facility that would meet the high environmental standards of current and future occupiers, have a reduced environmental impact, provide savings in operating costs and provide a template for future ESR projects in China.

#### SPECIFICATIONS

- 2-storey ramp-up logistics facility with full truck access to all warehouse space.
- 61,851 sqm of leasable area.
- One dock leveller per 1,000 sqm of warehouse space.
- ESFR Sprinkler system.
- 2.5-3 T/sqm floor loading.
- 9 meter clear height.
- The project is 100% occupied by leading logistics operators.

#### TIMEFRAME

Commenced: Mid-2014  
Completed: 3Q 2015

#### MAIN STAKEHOLDERS

Developer/Owner: The Kunshan project was developed by ESR for the Redwood China Logistics Fund, of which PGGM Private Real Estate Fund is the primary investor.

Contractor: Nantong No.4 Construction Group Co. Ltd

LEED Consultant: Shanghai Pacific Energy Center, Shanghai, China

#### KEY FEATURES

- A high level of regionally sourced and recycled materials were used in the construction.
- Regional materials value as a % of total material cost = 63.32%
- Recycled content value as % of total material cost = 12.96%
- In addition, ESR Kunshan DC 1 used energy efficient and water saving features, as well as monitoring mechanisms to meet the above goals.
- Please refer to the pictures below for some examples of specific features that were implemented at the property.

#### Example of specific features

##### On-site captured rainwater for the flush fixtures.



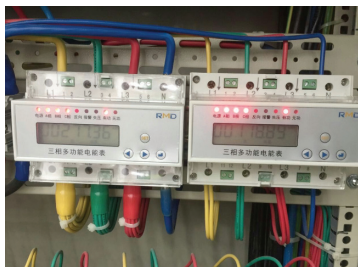
- Grey water system above ground



- Grey water system under ground

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Ability to monitor the electrical and water consumption of each leasable space as well as public areas.



- Electric meter in each power distribution panel in each unit.
- The lighting power consumption and other power consumption will be measured as per LEED requirement.



- Each unit has 2 water meters, 1 meter for municipal water consumption, another for grey water consumption.

## DESCRIPTION

Leadership in Energy and Environmental Design ("LEED") is the world's most widely recognized and used standard for measuring the performance of green buildings.

The ESR Kunshan facility achieved LEED Gold certification due to its innovative design and construction using a high level of regionally sourced and recycled materials as well as its optimised energy performance (reducing energy consumption) through the efficient design/quality of the facility, using energy-efficiency equipment and the use of individual meters to monitor the electrical and water consumption of each leasable space as well as public areas.

For water efficiency, the project uses a grey water system to collect and reuse rainwater, has water-efficient flush fixtures and water efficient landscaping, therefore minimising portable water consumption.

These highly functional and energy-efficient facilities result in a material reduction of operating costs for our occupiers, while lowering the environmental impact.

ESR are also reviewing the feasibility of installing rooftop solar power plants at the Kunshan facility, similar to ESR's recent installation at its Beijing facility and numerous Japanese facilities, where ESR has one of the largest rooftop solar programs nationally.

## Approach

The Kunshan project was designed by the ESR construction team with the view to achieve LEED certification, and the selection of the contractor and suppliers also took this into account. The ESR team reviewed best practices not only from within China, but also in consultation with ESR staff in different countries.

## IMPLEMENTATION

ESR selected Shanghai Pacific Energy Center (SPEC) as its LEED consultant due to SPEC's 15 years of experience in China with sustainable building design and energy optimisation, and their specific experience in logistics facility projects.

## CONCLUSION

- The Kunshan logistics facility achieved LEED Gold certification, which ESR believes is becoming increasingly important to both local and international occupiers in China.
- Such projects can show not only a commitment to environmental sustainability, but also have reduced operating costs for occupiers. ESR are currently working to implement similar strategies on additional projects throughout the country.
- ESR has been able to reduce the environmental impact of the project during construction, while enabling the project to enjoy lower energy and water consumption during operation which will be a direct financial benefit to occupiers.
- The project appeals to occupiers who have high environmental standards. The project is currently 100% leased.
- Energy reduction is about 43%, when calculating energy cost saving with energy model provided by USGBC.

## INFORMATION

### Information Sources

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