



# Siemens Real Estate

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## Green Building – Efficient life cycle

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## Siemens Real Estate (SRE)

The real estate arm of Siemens

# SIEMENS

- **SRE plans, builds, finances, develops and manages** Siemens sites and provides advice on all real-estate issues  
Focus areas: **Cost effectiveness** and **space efficiency**
- In its **governance function**, SRE has global responsibility for the principles of real estate business at Siemens
- Worldwide, SRE has direct commercial responsibility for around **17 million square meters of land** and just over **10 million square meters of floor space**





## Facts and figures

### SRE at a glance

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		FY 2006	FY 2007
<b>Sales</b>		€1.71 billion	€1.69 billion
<b>Earnings</b>		€122 million	€228 million
<b>Employees in real estate-specific functions</b>		approx. 1000	approx. 1100
<b>Property area:</b>	SRE	approx. 20 mill. m <sup>2</sup>	approx. 17 million m <sup>2</sup>
<b>Rentable building space</b>	SRE	approx. 10 mill. m <sup>2</sup>	approx. 9 million m <sup>2</sup>
<b>Assets:</b>			
<b>Land and buildings</b>	SRE	€2.7 billion	€2.5 billion

As at: Sep. 30, 2007, all figures in accordance with US GAAP

Source: SRE FC



## GREEN BUILDING Initiative

### Intention

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- **Holistic approach:** from planning, through construction and operation, to renovation or demolition
- Examination of **life cycle costs** during the conception phase for new buildings
- **Certification of all new buildings:** Green Building (Europe), LEED (Leadership in Energy and Environmental Design)
- Natural Resources Management for existing buildings:  
**Optimization** of technical systems (energy, electricity, water consumption, waste disposal and waste management)
- Long-term: **development of a zero-energy standard** for Siemens buildings

**Goal: To reduce electrical, heating and water consumption in SRE's strategic core inventory by 20% by the year 2011**



# GREEN BUILDING Initiative



Resource efficiency in all aspects of the building life cycle





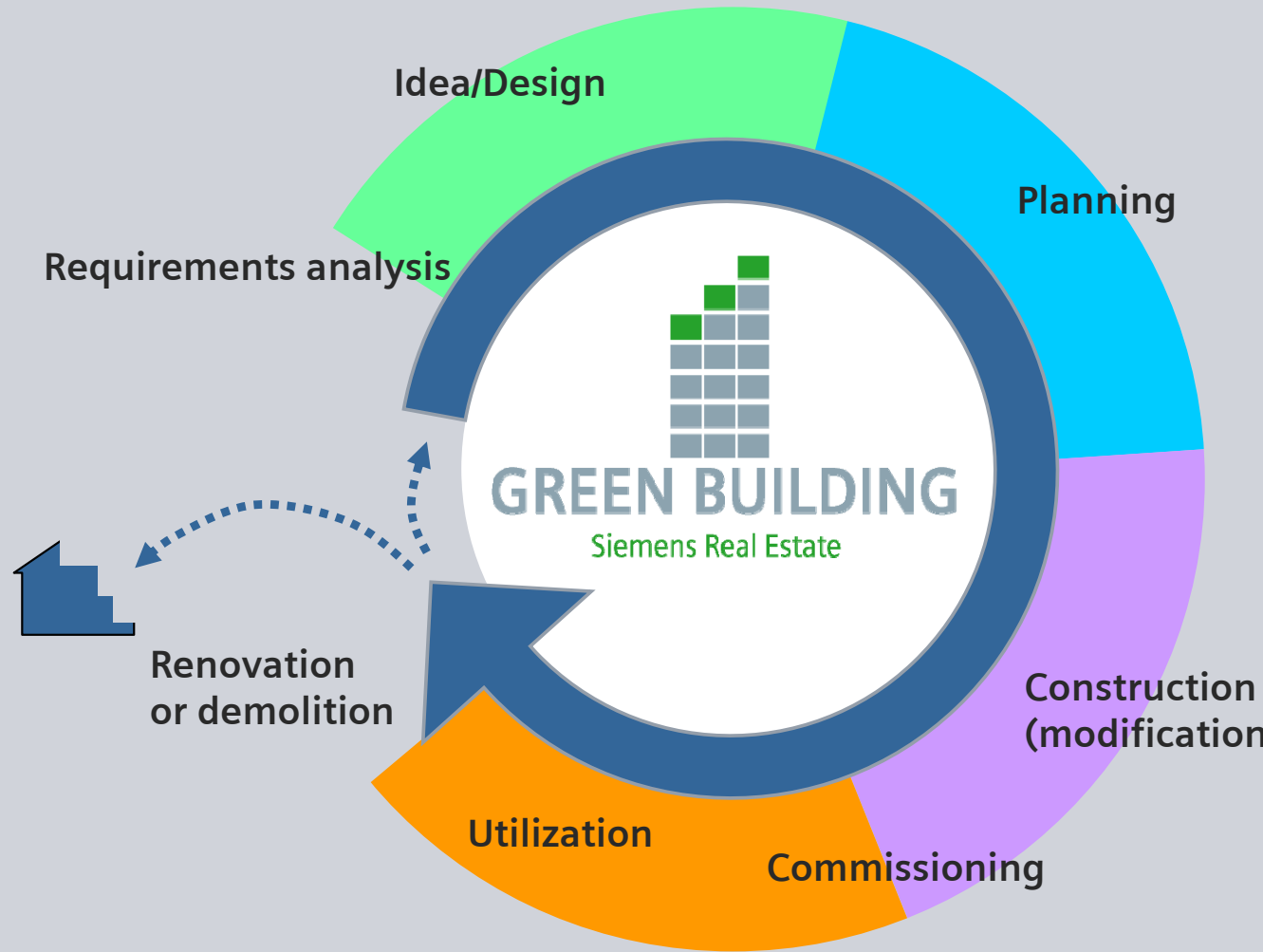
# Sustainable Building Design

## Business drivers at start of project



### Sustainable Building Design

- Make a preliminary draft of an **integral energy concept**
- Minimize the **primary energy demand** and **C02 emissions**
- Pre-define **limit/target values** for later operation
- Make best-possible use of **renewable energy sources**
- Reach the required **comfortable room temperature** with minimal use of energy
- Use **daylight** to avoid turning on artificial light





## Sustainable Building Design

### SRE target: Zero energy standard

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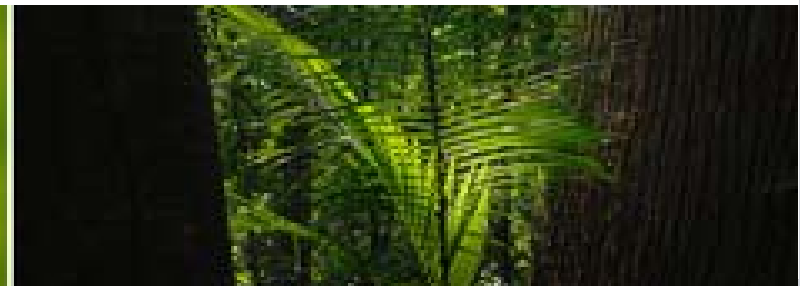
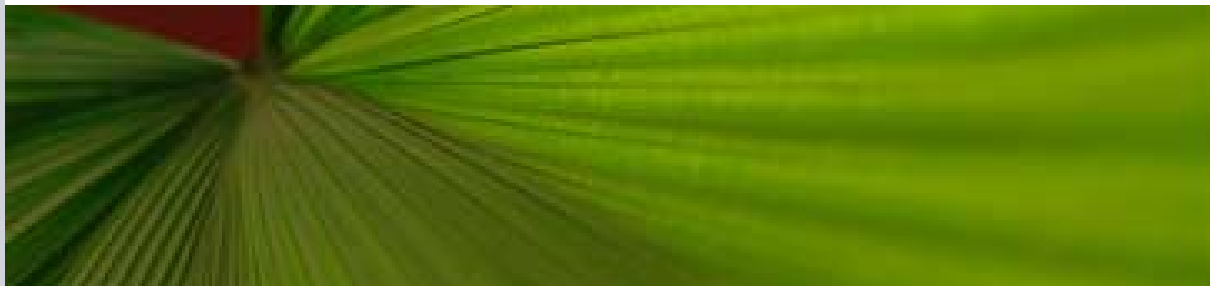
A **zero energy building** is one that does not need to show **any primary energy** such as coal, oil or natural gas on its annual balance sheet.

### Strategy

- Reduce final energy consumption (heat and electricity)
- Use local environmental energy (groundwater/air/geothermal/solar energy)
- Meet remaining energy requirements through alternative energy sources

### What does a zero-energy building look like?

- Compact construction, oriented in accordance with the position of the sun
- Thermally insulated and air-tight facades
- Controlled building ventilation, efficient heat recovery





## Sustainable Building Design

Guidebook with planning propositions for sustainable buildings

# SIEMENS

- I. Location**
- II. Architecture**
- III. Energy**
- IV. Building insulation**
- V. HVAC systems**
- VI. Electrical systems**
- VII. Water**
- VIII. Working environment that promotes health  
Building & landscape**
- IX. Building management**
- X. Reinstatement**







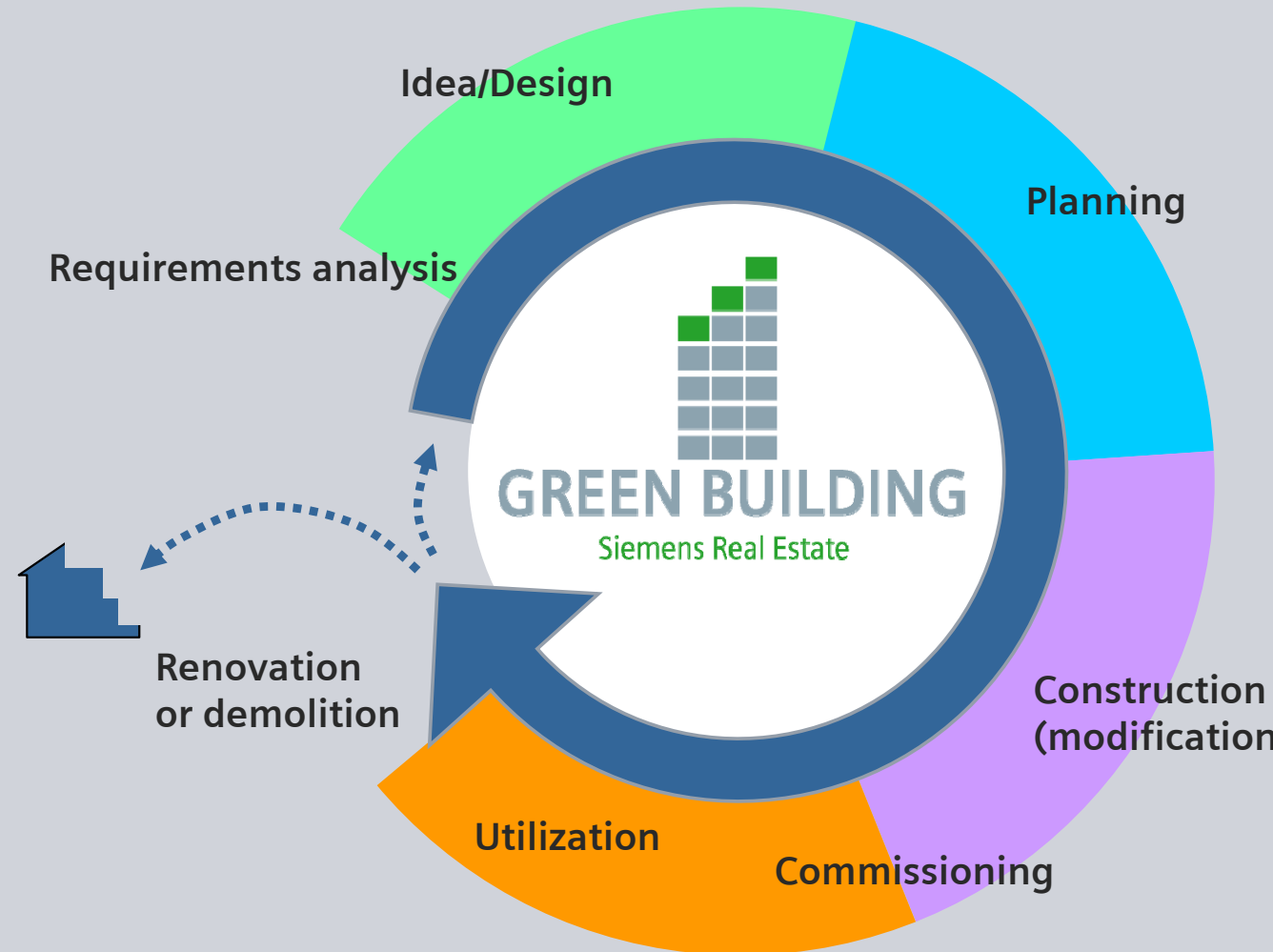
# Life cycle costs analysis

## A look at follow-up costs of real estate

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### Life Cycle Cost Analysis – LCCA

- Selection of structural elements based **not only** on investment costs
- Additional consideration of **usage costs**
- Identification of **strategic structural elements** in the early planning stages





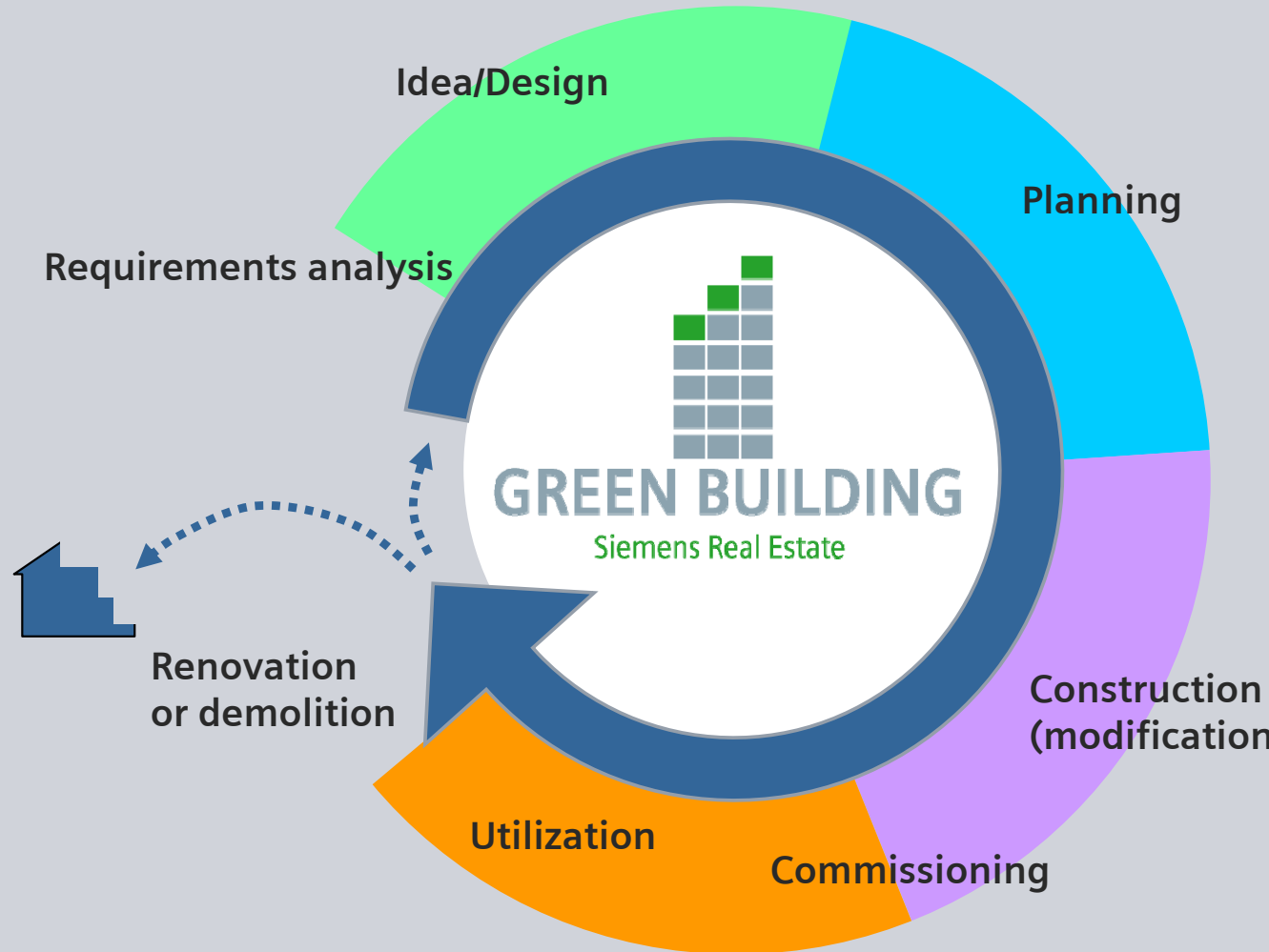
# Green Building Certification

## Visible success of sustainable building



### Green Building Certification – BC

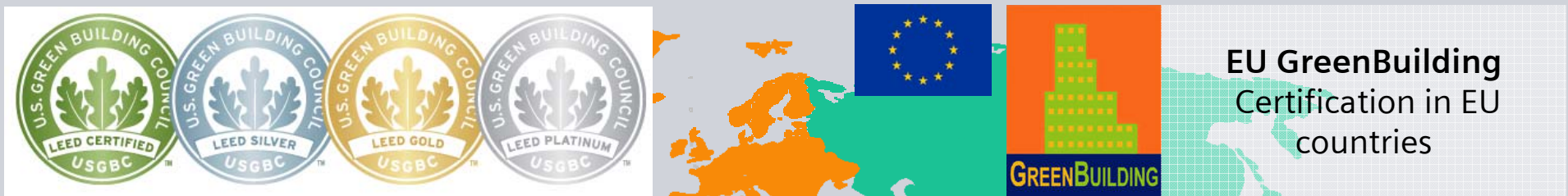
- **LEED certification** for major renovation and new building projects worldwide
- **GreenBuilding Label** for major projects in EU countries





# Green Building Certification

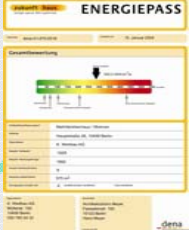
## SRE GREEN BUILDING certification strategy



**LEED certification** worldwide for major renovation and new building projects

\* The Leadership in Energy and Environmental Design

For all SRE buildings worldwide: Requirements-based energy pass for new construction and sales objects. Usage-based energy pass in all other cases.





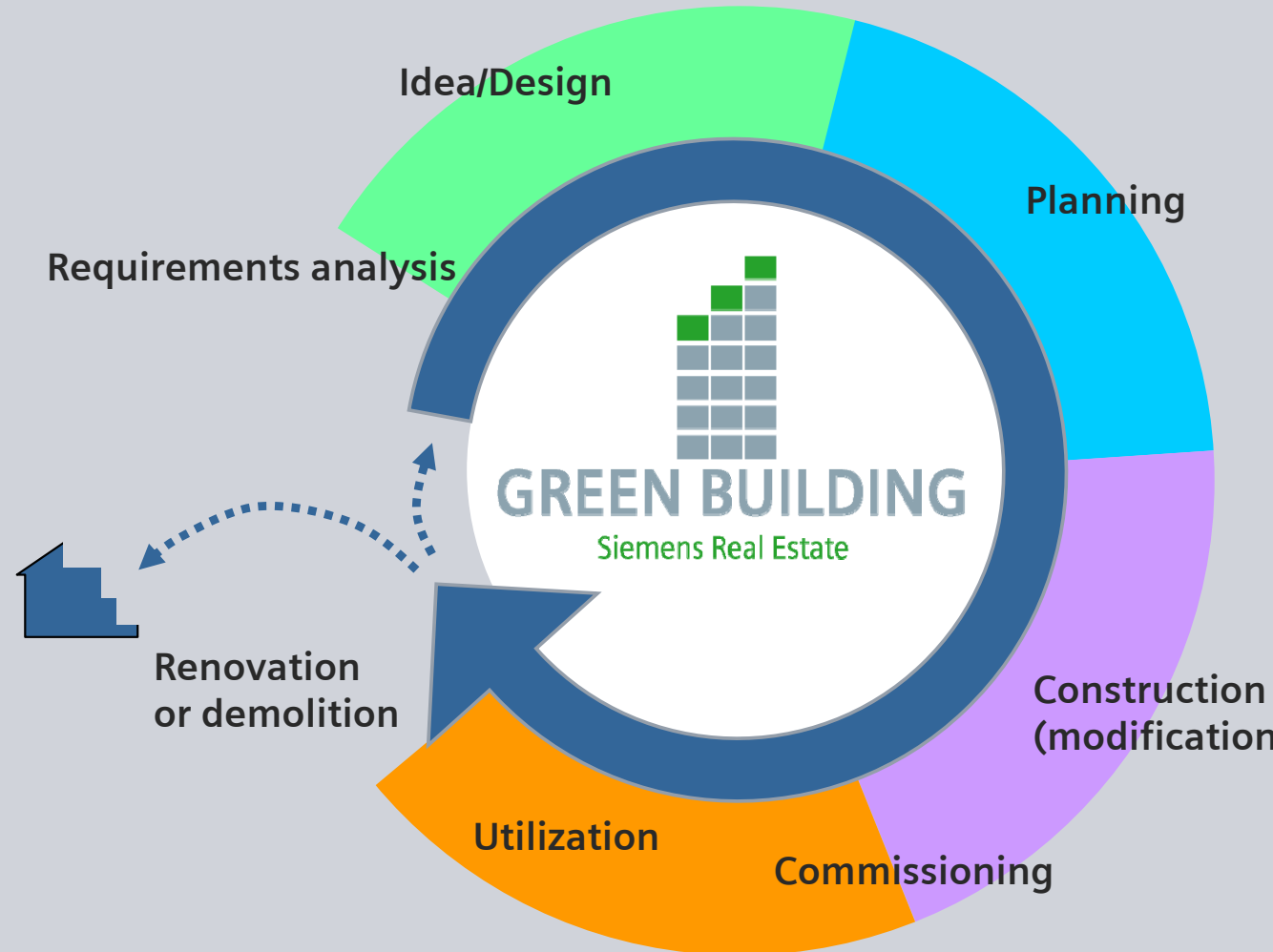
# Natural Resources Management

## Sustainable optimization in the portfolio



### Natural Resources Management

- Reduction of resource consumption in **existing buildings**
- Introduction of a standardized **consumption and cost reporting system**
- **Best practice** examples for maintenance and modification projects in the portfolio







# Natural Resources Management

## Resources Check Guidebook

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The guidebook outlines resource-saving measures for the following areas:

- 1.1 Water
- 1.2 Heating
- 1.3 Air conditioning and ventilation systems
- 1.4 High voltage supply
- 1.5 User-specific office equipment

It also includes:

- A matrix for the climatic application
- Valuable suggestions for internal and external sources

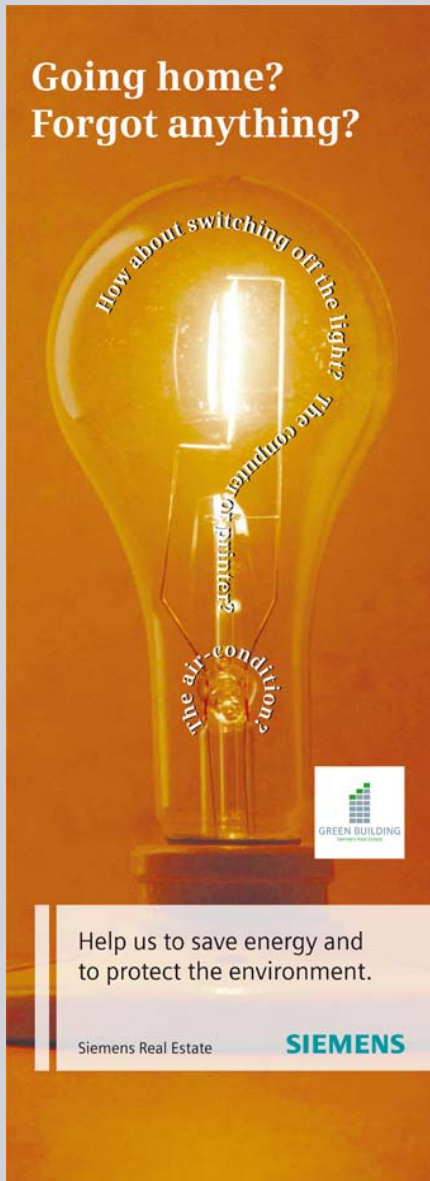
→ Target group: location and facility managers





# Marketing & Communication

## Posters for raising user awareness of the issue





# First EU Green Building Certificate for SRE Munich-Perlach

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- **Optimized** according to proposals from a **building inspection** performed by SBT
- Improved and extended building management, leading to **substantial savings**
- **Key data:** Heat energy demand reduced by **34%**; electricity demand reduced by **15%**; investment costs: **€164,000**; annual cost savings: **€99,000**; amortization period: less than two years







## New regional center Shanghai

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- A **modern four-building office complex** with a gross floor area of 35,000 m<sup>2</sup> built on an 18,000-m<sup>2</sup> plot
- Scheduled completion: **2009**
- Total investment of around **70 million euros**
- **Environmental milestone:** The entire new construction is aligned with the new **Green Building guidelines** of Siemens Real Estate
- Goal: to achieve the **LEED Gold certificate** and to implement energy efficiency measures with a maximum amortization period of 15 years







# Building for the future

## Key projects



**Moscow:**  
New building for company HQ

**Beijing:**  
New building for company HQ

**Shanghai:**  
New building for company

**Munich:**  
First EU Green Building Certificate

**Zug:**  
SBT, new HQ

**Vienna:**  
Siemens City, new building

**GREEN BUILDING Siemens Real Estate** logos are placed near the Munich, Zug, Vienna, and Shanghai project images.



## Contact

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