Loop5, Gutenbergstraße 5, Weiterstadt, Germany

INREV

Resource Efficiency and Safety First at Loop5

> 56,000 m2 shopping centre with exceptional environmental, safety & health performance
> Built under Sonae Sierra's Environmental Management System
> Construction certified in accordance to ISO 14001 environmental standard
> Brings the world of aviation alive for its visitors with highly functional themed architecture

Key Facts
- Use: Commercial
- Total NLA: 56,126 m2
- Levels: 2 (+parking)
- Car spaces: 3,000
- Major tenants: Intersport, Thalia, Esprit, dm

Time Frame
- Construction start: 2006 December
- Completion: 2009 October

Main Stakeholders
- Owner: Sonae Sierra (50%) / Foncière Euris (50%)
- Developer: Sonae Sierra (50%) / Foncière Euris (50%)
- Builder: Max Bögl / Goldberg
- Architect: HPP
- Services Engineer: Scholze
- ESD Consultant: Edificios Saudáveis Consultores / Environ

Introduction
From development to operations, Loop5 has used environmental resources efficiently – no construction waste sent to landfill and within two years after inauguration, waste recycling had improved by 25% and electricity efficiency by 15%.

The project also achieved excellent levels of safety performance during the construction phase. And all of this was possible due to a strong commitment to environmental and safety & health throughout the entire shopping centre lifecycle.

Background
In 2008, Sonae Sierra partnered with Foncière Euris to develop a new shopping centre, Loop5. Investing a total of €265 million, Loop5 set out to create a modern and tailored tenant mix and provide an attractive offering for families within a catchment area of one million potential visitors.
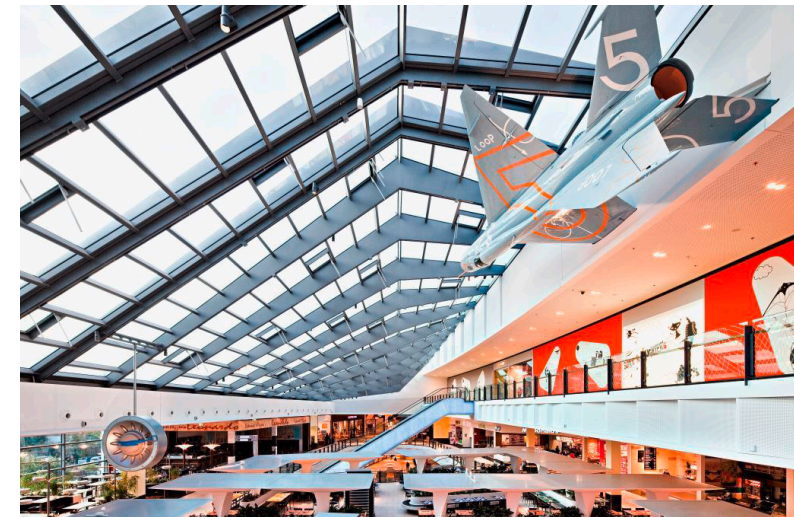
Challenge
Construction activities require considerable amounts of resources; materials, land, water and energy, while generating a lot of waste. A study[1] found that in the 1990s in Germany, around 59 million tonnes of construction and demolition waste were generated every year, and only 17% of which was reused or recycled. During their operation, buildings are responsible for around 40% of the world's energy consumption and produce nearly the same amount of carbon emissions.

The construction industry also has the highest number of accidents of any sector. In 2007, over 600 million accidents causing over 3 days of absence occurred in the EU construction sector[2]. Accidents bear a great human cost to society as a whole and can damage a company's reputation. Cases of non-compliance and lost work days can also significantly increase financial costs.

Solution

Designing and building a more sustainable shopping centre

Loop5 was designed in accordance with Sonae Sierra's Safety, Health and Environment Development Standards (SHEDS), which gathers standards based on our experience, best available techniques and international certification schemes such as LEED® and BREEAM. Some of the solutions implemented were:

- Large glass areas for better use of natural light
- Energy and water metering systems connected to the Building Management Systems which enable close monitoring and control of consumption
- All timber used in the development was certified by PEFCTM[3]
- Implementation of an Environmental Management System (EMS) to identify and minimise harm to the environment
- Installation of a unique carbon filtration system to treat contaminated groundwater extracted during the construction process and reintroduce it into the soil
- Recycle or re-use of 100% of construction and demolition waste generated by the development
- S&H supervision and planning on construction works
- Use of Safe Practice Index (SPI) to assess and continuously improve construction site safety conditions and workers' actions.

Improving performance in operation

Sonae Sierra recognises that creating sustainable buildings does not end once the development has been completed. Some of the initiatives implemented during operation:

- 'Green' electricity contract signed with an energy supplier to ensure electricity procured is generated using renewable-based energy sources
- Rooftop space rented out to a third party to install and operate an array of photovoltaic panels (PV panels)
- Comprehensive plan to optimise electricity use by adjusting the operation times of technical and lighting installations
- Identification of the top energy-consuming tenants to engage with them and agree on an energy reduction programme
- "Pay by weight" waste management scheme whereby tenants' waste is separated by type and the associated cost allocated directly to the tenant through a card system.

Outcome

Loop5 has achieved great results, setting the example in terms of environment and S&H performance during the construction phase, reducing its energy consumption by 15% in just two years and implementing an innovative waste recycling system which has proved successful with tenants.

In 2011, the shopping centre maintained its strong performance in relation to environmental and social responsibility:

73%	of waste recycled (compared to 53% portfolio average)
519	kWh/m2 electricity efficiency
0.004	tCO2e/m2 GLA of GHG emissions (0.009 portfolio avg)
39,375	euros invested in local community
341	hours of SHE Prevention Observations performed

Loop5 was also a commercial success:
- 4.5 million visits made to shopping centre
- Occupancy rate was strong at 97%
- Tenants' sales reached over €130.7 million
- Rental income totalled €17.3 million
- Tenants' satisfaction was 4.1 (on a scale of 1 to 6)

Awards and Certifications

Awards
- Commendation by the International Council of Shopping Centres (ICSC) for Loop5's development, in the category 'New Developments: Large'

Certifications
- ISO 14001 environmental management standard to the construction site's environmental management system

1 Construction and Demolition Waste Management and their Environmental Impacts, Report to DGXI, European Commission (1999)

2 Eurostatdatabase, http://epp.eurostat.ec.europa.eu/portal/page/portal/health/health_safety_work/data/main_tables#

3 The world's largest sustainable forestry certification scheme

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