

SUSTAINABLE BUILDING DESIGN



DESIGNING SUSTAINABLE BUILDINGS FOR THE FUTURE

As an early pioneer in integrating sustainability in the real estate business, we have built our reputation based on our solid experience in applying state-of-the-art solutions to real estate assets. Our professional team is focused in helping our clients in designing, developing and managing highly sustainable and resilient buildings. Our purpose is to create ever more sustainable and future-proof buildings, cities and communities. In times where profound challenges as climate change arise and also the concerns about resources' resilience and efficiency or individual's safety, health and

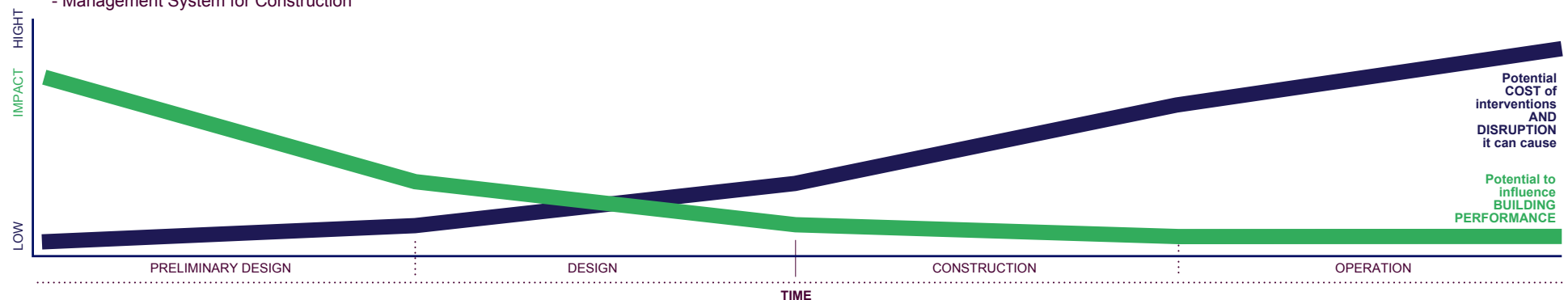
well-being, we strive to help our clients in creating long-term economic and social value. We are able to help our clients across the entire lifecycle of an asset, fully understanding how design and construction can improve sustainable operation. Designing sustainable buildings goes far beyond filling a checklist or legal requirements. It is more than ensuring conditions to be granted multiple certifications, it embeds a growing range of strategic decisions and requires the ability to (re) imagine buildings.

SUSTAINABLE SOLUTIONS

SUSTAINABLE BUILDING DESIGN, WHEN TO ACT

- Safety, Health and Environment Designs Standards
- Building Certification Strategy
- Management System for Construction

- Safety Risks & Accidents' Reduction
- Environmental Impact Reduction



Source: Adapted from WBCSD EEB Facts & Trends

CREATING VALUE

- Increased asset value and attractiveness;
- Improved building resilience, performance and efficiency;
- Reduced costs through efficiency;
- Guaranteed compliance with legal requirements and insurance advantages;
- Decrease in accident and incident rates.

TO OFFER UNIQUE EXPERIENCES

- Design a safe and healthy quality place enhancing occupiers' comfort, productivity and wellbeing;
- Reduced incident rates through reduced risks;
- Better quality experience to inhabitants providing a sense of responsibility towards people and the environment.

OUR EXPERIENCE



PARKLAKE · ROMANIA



MANAUARA SHOPPING · BRAZIL



LEIRIA SHOPPING · PORTUGAL



TORRE OCIDENTE · PORTUGAL

ParkLake, located in Bucharest, is a multi-award winning retail destination. We have applied our rigorous Safety, Health and Environment Design Standards throughout the development project, from planning and design through delivery. By embedding these standards and providing a Safety, Health and Environment Management System during construction phase, we've created a future-fit retail destination that fulfils our commitment to creating shared value for our investors, society and the environment. These endeavours allowed the shopping centre to save costs by more than €322,000 annually and achieve ISO 14001 and OHSAS 18001 both for construction and operation and also BREEAM 'Excellent' rate.

In Manauara Shopping, a shopping centre at the heart of Amazon, it was applied our best in class environmental standards to the project completed in 2009. We've overcome a number of challenges to achieve ISO 14001 certification for the construction works and incorporated a series of impressive environmental features into the centre's design such as high energy efficiency equipment, chillers, lighting and photovoltaic panels that allowed the centre to generate more than 45,000 kWh of energy per year avoiding the production of an additional 13 tonnes of CO₂ and enabled more than 500 m³ of water to be reused every day in the bathrooms and irrigating and cooling systems.

During the construction of LeiriaShopping, one of the biggest concerns was to ensure that energy consumption would be minimised during both construction and operation phases in order to reduce operating and maintenance costs. We've conceived and implemented a wide range of energy saving measures including heat recovery and free-cooling systems, high efficiency electrical motors, use of variable frequency drives, energy efficient lighting equipment and solutions, use of high-level insulation materials to minimise heat losses. These design measures were developed in accordance with our Safety, Health and Environment Design Standards and represented an annual reduction of 1,785,000 kWh in electricity consumption, corresponding to an estimate saving of €125,000. The completed shopping centre was classified as a class 'A' building in terms of energy performance according to the European building energy performance certification.

Centro Colombo is one of the largest shopping centres in Europe surrounded by two of the most famous office towers in the city. During construction works of Torre Ocidente Office Tower the Safety, Health and Environmental (SHE) issues were a priority. Thus, high standards and procedures were implemented, such as, our Safety, Health and Environmental Management Systems that greatly helped to obtain ISO 14001/OHSAS 18001 certifications. To measure the safety conditions in field, our system has a tool, named safety practice index (SPI) which measures the safety conditions and unsafe behaviours. This tool was implemented during whole construction stage and the project had a great result of 97% which shows a good level of safety conditions. Concerning environmental aspects, Torre Ocidente achieved 90% of valorisation rate, avoiding send to landfill around 4,020 tonnes of waste.

ABOUT US

We find solid platforms from which we can create sound investments, all around the world. From shopping to public or living spaces, from management to turnkey projects, we are the most far-sighted partner to have when developing innovative concepts.

Sonae Sierra operates from corporate offices located in more than 10 locations providing services to clients in geographies as diverse as Europe, South America, North Africa and Asia.

Incorporated in Portugal in 1989, Sonae Sierra is owned by Sonae, SGPS (Portugal) with 90% and Grosvenor Group Limited (United Kingdom) with 10%.

Open mind Greater value

PRAGMATIC DOERS

We have the know-how and the muscle, the enthusiasm and determination to make things happen. That's our biggest strength: to be experts in "done".

AN INTERNATIONAL PLAYER

with a thing for localism. We learn about places, their substance and appeal. Their worth and potential. We believe that local value is what makes the world interesting. Our heart is on the street, our eyes on the world.

URBAN DRIVEN

We are in love with the city. How it breathes, how it grows, who lives there, what people do, how they move, how they work. We love to push for its constant transformation. The city is our muse. Urbanity our home.

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