



Sagittarius Business House | WROCLAW | POLAND

The Sagittarius Business House is a modern, Class A office building located at the intersection of Borowska and Sucha streets in Wroclaw. Sagittarius is a project worth 90 million PLN completed by the largest Polish real estate developer - Echo Investment, a company active in three real estate market segments: housing, offices and shopping centers. This seven-story building offers 25,000 m² of office space and its main tenant is a company that provides professional advisory and auditing services.

The Sagittarius office building has received the BREEAM Interim certificate at the Excellent level, which serves as a confirmation that this building is environmentally friendly and creates comfortable working conditions.



› THE SITUATION

The main office of the key tenant is located in Warsaw, however there are also other local offices in Katowice, Krakow, Poznan, Gdansk, Lodz and Wroclaw. It is Wroclaw where the company has opened three offices, employing about 800 specialists. Over the past 7 years, they have repeatedly expanded their office space, gaining a great amount of experience in terms of modern solutions that positively affect working comfort and efficiency. Due to the dynamic development of the company's branch in Lower Silesia, the

company's management decided to find a new, shared office space. The company's greatest value lies in its employees, which is why the new office was meant to ensure ideal working conditions that would guarantee the most effective use of their time and potential. The new offices were primarily intended to place great focus on teamwork and valuable creative interactions, as well as the flexible adaptation to the changing needs of the users, and ensuring considerable energy savings.



Factors that contributed to the selection of the Sagittarius Business House as the new location of this demanding tenant included the ES-SYSTEM solutions used in terms of lighting management and innovative LED luminaires with variable color temperature. This comprehensive lighting installation is compliant with the concept of Human Centric Lighting (HCL), positively

impacting the correct functioning and well-being of the human body. The implemented active lighting management solutions fulfilled all the requirements set by the tenant, guaranteeing the expected comfort, safety and savings.

THE CHALLENGE

ES-SYSTEM was faced with the challenge of meeting all of the investor's requirements and designing a fully autonomous building, where the lighting can be controlled using an app that is available to each of over 1,500 employees on all 6 floors. In accordance with the idea of Human Centric Lighting, the lighting concept should place the main focus on people and their needs during the design process. For the investor, it was particularly important to implement systems that mimic natural daylight, which ensure the employees' maximum comfort, well-being and efficiency.

2,127 LED luminaires

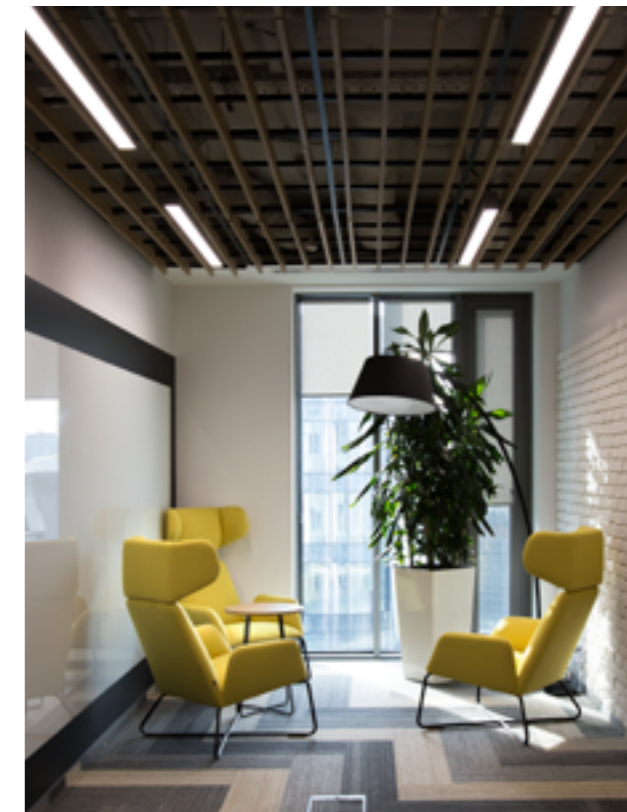
1,280 luminaires

with smooth color temperature changing between 2700 K and 6500 K - the DYNABRIGHT function

1,983 DALI luminaires

The investor's most important requirements for the lighting installation:

- › employee comfort
- › a flexible solution that meets various requirements in individual parts of the office
- › 8 AM to 6 PM: automatic color temperature adjustment in the open space areas, mimicking the natural human circadian rhythm
- › after 6 PM: easily accessible manual lighting adjustment by the employees
- › energy savings
- › care for the natural environment



An energy-saving and sustainable design of the LED lighting installation was created in response to all of the investor's recommendations. The concept of sustainable construction and design is focused on minimizing the negative impact of buildings on people and the natural environment while ensuring the economic viability of the investment. A dedicated application was also designed to allow for intuitive operation and the easy adjustment of the lighting conditions to the multinational working environment. The fast pace of development and globalization creates situations, where the employees often perform their duties outside standard business hours due to being part of virtual teams gathering people from different continents and time zones. The possibility to control the lighting irrespective of the time of day or night provides the working comfort and sense of security that are crucial factors for the employees.

The presented design included the installation of 2,127 LED luminaires, 1,983 of which are controlled using the universal DALI protocol. Because the lighting concept is in line with the idea of HCL, as much as 1,280 of the luminaires are equipped with smooth color temperature changing within a range between 2700 K and 6500 K. In order to fully support a compre-

hensive lighting installation, DT8 DYNABRIGHT power supply units, motion and light intensity sensors, as well as modular and touch-sensitive control panels were used in this project.

The approved design called for the fully automatic operation of the entire installation with remote control capability. The system administrator can choose one of two operating modes. Between 8 AM and 6 PM, the system automatically adjusts the light intensity to daylight intensity using light sensors, and during these hours, the DYNABRIGHT function provides smooth color temperature changing within a range between 3000 K and 5500 K. However, after 6 PM, the touch panels are unblocked, allowing the employees present in the office to manually control the lighting.



THE PROJECT

Work on this project began in the first quarter of 2018 and was completed in the first quarter of 2019, in accordance with the accepted schedule. The project's scope included installing general lighting fixtures as well as the lighting management devices necessary to ultimately combine everything to create a single autonomous system.

The adequately designed ES-SYSTEM lighting control systems adapt the lighting parameters to the current conditions and user needs. These possibilities in terms of adjusting the lighting intensity give the employees an extraordinary sense of comfort and a perfectly well-lit workplace regardless of the prevailing weather conditions, time of day or year.

a lighting concept that is in line with the idea of

HCL

The lighting control in the Sagittarius Business House is automatic thanks to pre-programmed light scenes or the use of integrated sensors in the luminaires, it can also be remote controlled using generally accessible control panels. The approved project included the fully automatic operation of the entire installation between 8 AM and 6 PM and manual operation after 6 PM for 5 days of the week - Monday through Friday. While the project was being implemented, the investor decided to introduce additional amenities for the employees, which required modifications in the application, which had already been created. The new requirements included the possibility of manual lighting control not only for 5, but for 7 days a week.

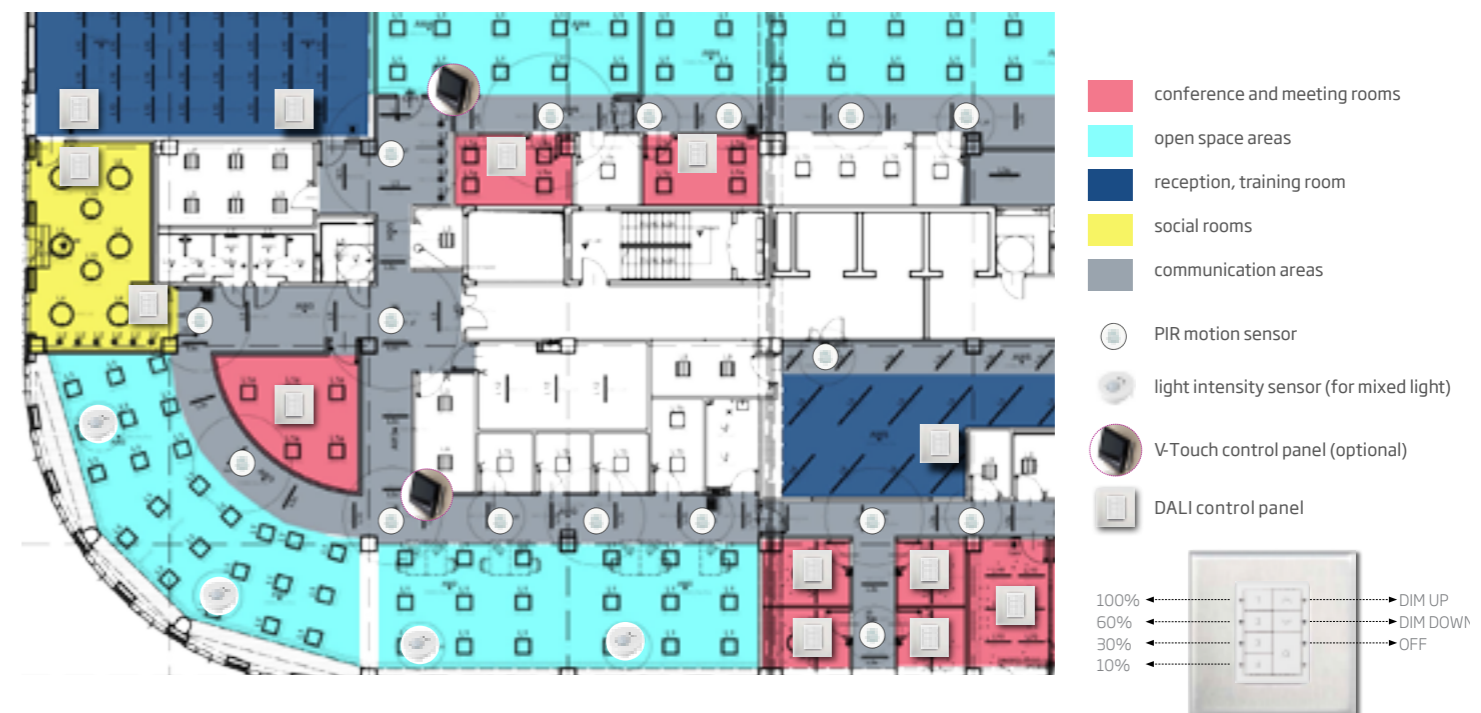
The application was designed especially for the purposes of this particular project by the ES-SYSTEM design team and took 1,000 hours to create. After submitting the decision on the required changes, the application was sent back to the team, who implemented the necessary modifications. What's important to note - this additional work did not affect the entire project's completion date in any way.



The lighting management solutions were carefully selected for individual spaces on each of the building's floors. In meeting and conference rooms, the user can choose between 4 programmed lighting scenes, as well as increase or decrease the light intensity.

<p>The lighting in communication areas in the automatic mode is switched on and off using the installed presence sensors with a 10-minute delay. After 6 PM, the user can switch the lighting on permanently using the V-Touch control panel.</p>	
<p>Social room lighting is controlled using a DALI panel installed in the room. The employees can choose between 4 programmed lighting scenes in addition to increasing or decreasing the light intensity.</p>	
<p>The most important and largest office spaces on each floor, i.e. the open space areas, are illuminated with automatic general lighting between 8 AM and 6 PM in accordance with the programmed schedule and natural circadian rhythm. After this time, generally accessible touch panels are unblocked, allowing full manual lighting control.</p>	

The distribution of lighting control elements on a portion of the 6th floor plan view



The following general lighting fixtures were used for the purposes of this project: LUNA LED 600 Dynawhite, System 6000 Dynawhite and OPPOSITE 2 Dynawhite, accessorized with motion and light sensors as well as controllers for the DALI bus. The Sagittarius Business House has also been equipped with ES-SYSTEM's latest emergency lighting solutions.

TECHNOLOGIES

Discover the technologies used in the Sagittarius Business House, which made it possible to fully utilize the potential of this building and ensure maximum energy efficiency.

The dedicated active lighting management solutions are intuitive and allows for the effortless adaptation of the lighting to the changing needs of the employees, ensuring their comfort and safety.



Changing the color temperature (DYNAWHITE)

The color temperature of white light can be smoothly adjusted: from a mild, warm shade, like at sunset, to an intense, cool white, like at midday. Warm light is calming and relaxing, whereas cool light mobilizes and stimulates activity. A lighting system that controls the light color temperature makes it possible to create the desired atmosphere depending on the current lighting preferences using luminaires with a specially designed LED system.



Luminaires with variable color temperature








Opposite 2 Dynawhite



System 6000 Dynawhite



Luna Dynawhite

- 
7000 K
cloudy sky
- 
5500 K
full sunlight
- 
3500 K
sunset
- 
2700 K
light bulb
- 
1900 K
candle light

Light profile throughout the day: **light sensor**

Automatically adapted luminaire power:	20%	40%	60%



Adaptive lighting

The intensity of natural daylight changes depending on the time of day and the season. Using supplementary artificial lighting is necessary when there is not enough natural daylight in the room. A fully automated adaptive lighting system uses sensors to gather information about daylight intensity

and automatically adapts the lighting intensity level in the artificial lighting fixtures in the room. As a result, the entire work area is evenly lit, ensuring a sense of comfort for the users.



Changing the light intensity

Adjusting the light brightness level gives the users a way to adapt the lighting intensity to their current needs, improves user comfort, and has a positive impact on achieving significant energy savings. It can be done manu-

ally - via control switches, or automatically using advanced lighting control systems.

➤ PRODUCTS

The Sagittarius Business House was equipped with 1,280 luminaires with smooth color temperature changing within a range between 2700 K and 6500 K - get to know them all.



The most important features of OPPOSITE:

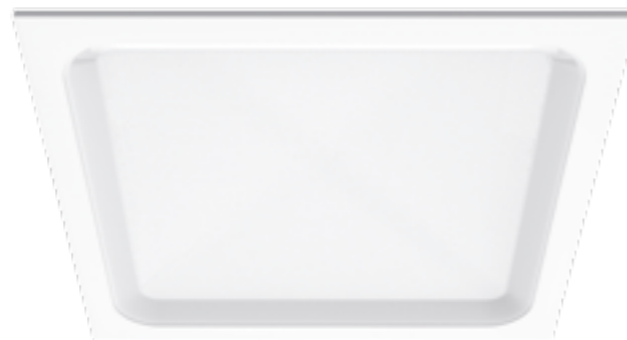
- Color temperature changing within a range between 2700 K-6500 K
- A multi-layered optical system that limits glare and ensures uniform light diffusion
- A square, concave or convex diffuser UGR <19
- Optional wireless BLUETOOTH CASAMBI lighting control



OPPOSITE 2 DYNAWHITE

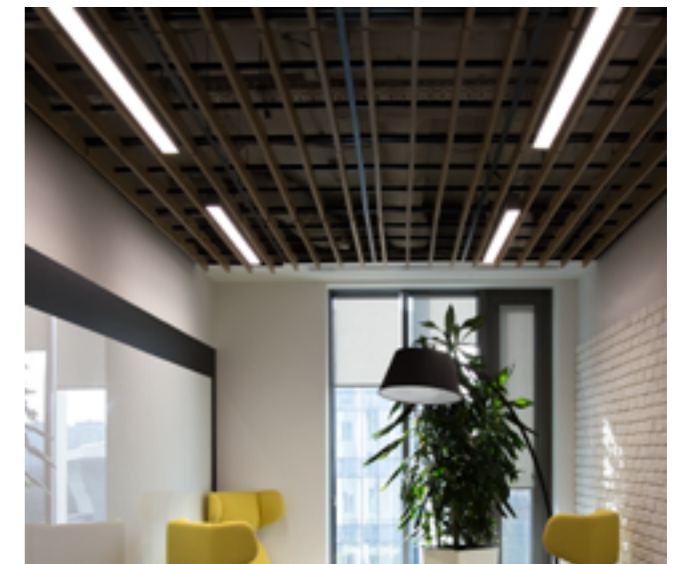
A premium troffer luminaire with low glare (UGR 19) and unconventional registered design. The luminaire has a square shape with rounded corners. A concave or convex version can be selected. The OPPOSITE has thermoformed, multi-layer optics made of polymethyl methacrylate (PMMA) with microprisms that reduce glare and an opalized diffuser that evenly diffuses light all over the illuminated surface.

OPPOSITE 2 is also available in a version with advanced CIRCADIAN technology.



LUNA DYNAWHITE

A large surface luminaire that can be adapted to take on any shape, size, color or power variant in order to accommodate the illuminated space. This product is suitable for surface or pendant mounding on ceilings. Its housing is made of steel sheet, whereas the diffuser is made of light-permeable, evenly illuminated, non-inflammable, non-toxic, flexible, deformation- and moisture-resistant PVC thermoelastic foil. The foil has glare-reducing properties that make the luminaire suitable for use in offices.



S6000 LED DYNAWHITE

A ceiling-mounted or pendant system made of rectangular extruded aluminum profile that is suitable for connecting in lines with any chosen length and building spatial structures. Two symmetrical recesses in the side wall of the profile give it a lightweight look and allow for easy assembly using flexible aluminum brackets with adjustable spacing. The system has two types of optics: a glare-reducing microprismatic diffuser or an evenly illuminated opalized diffuser for scattered light. The inner reflector made of white painted aluminum increases the efficiency of the optical system and the uniformity of the illumination of the diffuser.



> PROJECT SUMMARY

Name:	Sagittarius Business House
Investor	Echo Investment
Sector:	Biura
Location:	Wrocław, Polska
Project start and end:	Q1 2018 - Q1 2019
Project coordinator:	Marcin Bielecki
Products:	<p>General lighting: OPPOSITE 2 IN DYNABWHITE, OPPOSITE 2 IN, CAMELEON MIDI , S6000 LED DYNABWHITE, S6000 LED , S4000 LED, LUNA DYNALED, CAMELEON MINI 1, CAMELEON MIDI 1, MODERNA 2, COSMO APEX,</p> <p>Emergency lighting: MONITOR 1, MONITOR 2, POINT LED, COBRA LED G 1X3 VWD TA 1H, VERSO LED VUN G 1X3 VWDTA 1H,</p> <p>Lighting control systems: DIN EDR-75-24 POWER SUPPLY, PIR 311 MOTION SENSOR, MULTISENSOR SBB-A (311, 317) HOUSING, 135B PANEL, 232S FRAME, V-TOUCH S CONTROL PANEL, INDUSTRIAL COMPUTER WITH A HUNTER TOUCH PANEL UNMANAGED ETHERNET SWITCH</p>
Architect:	Arcad
Lighting designer	The ES-SYSTEM design team
Savings:	<p>Energy savings resulting from the use of LED luminaires and their integration with lighting control systems that reduce energy consumption amounted to as much as 80%*</p> <p>*compared to conventional solutions without lighting control.</p>

