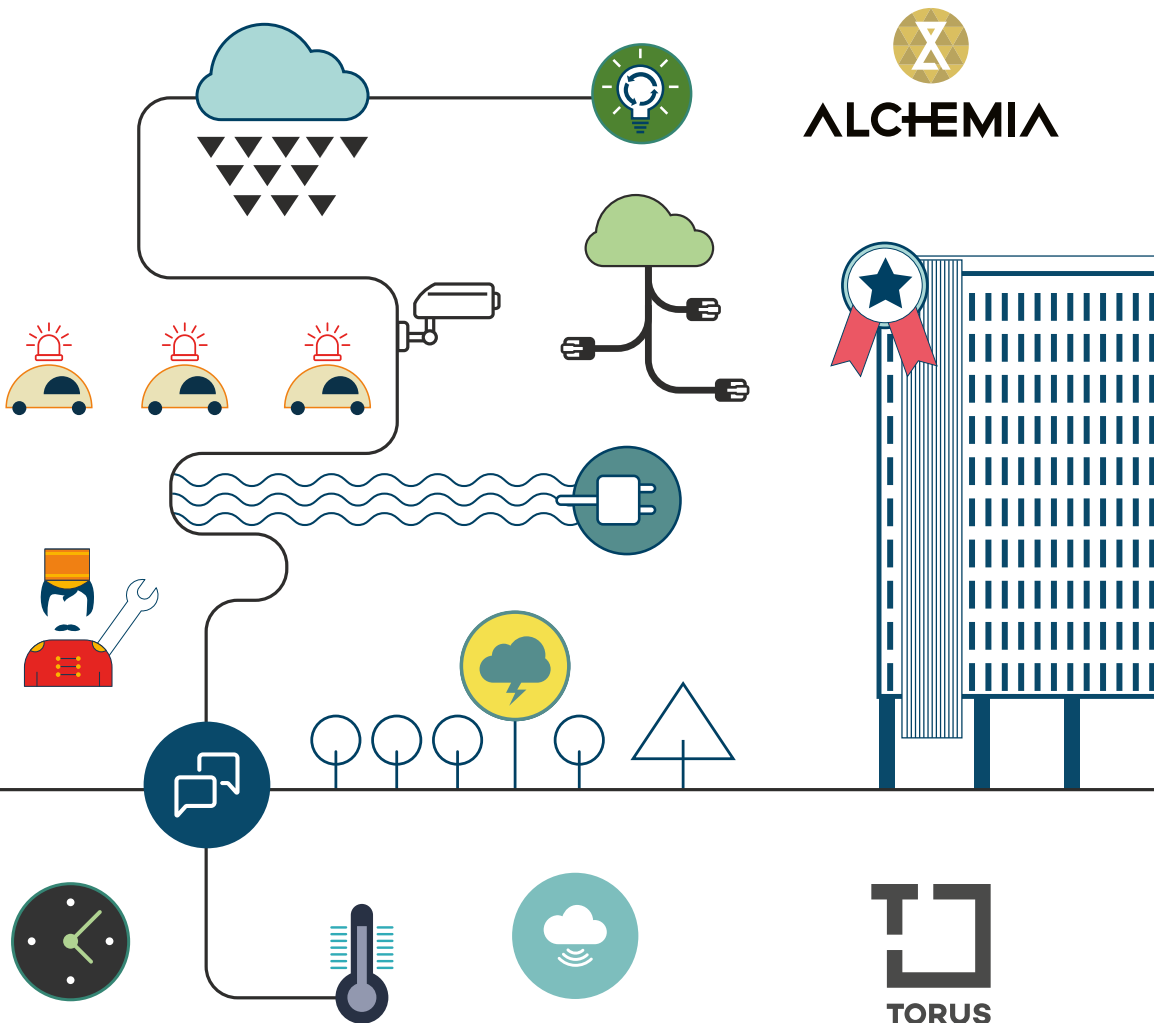# ALCHEMIA TECH GUIDE
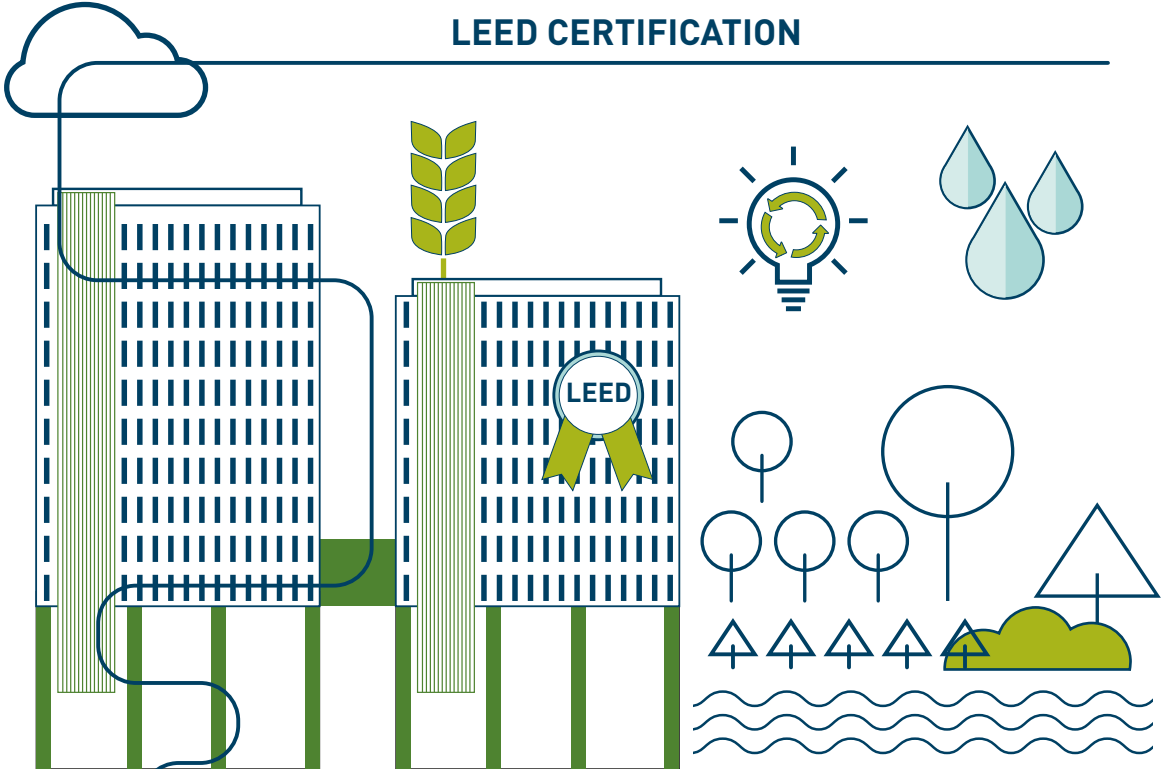
An easy-to-understand guide to the technical features of ALCHEMIA,
the state-of-the-art, mixed-use business centre in Gdańsk, Poland.

ALCHEMIA

TORUS

LEED CERTIFICATION

Leadership in Energy and Environmental Design (LEED) is a sophisticated, U.S. system rating highly-efficient buildings based on multiple criteria. It is in use in approx. 120 countries, including Poland. This complex certification process places a number of restrictions and requirements on property developers beginning in the building's project stage. Meeting the criteria results in the awarding of the final certificate, of which there are four possible grades: Certificate, Silver, Gold and Platinum. All Alchemia phases (stages) are certified under LEED. The first and second have already attained the highest, Platinum, grade. The remaining stages have received Platinum-level precertification. Our U.S.-based LEED consultant is Agnes Vorbrodt, who has been with us since the beginning.

CITY-CENTRE LOCATION UTILISING EXISTING INFRASTRUCTURE, WELL-CONNECTED AND WITH PEDESTRIAN-ACCESSIBLE RETAIL SPACE - additional works have been carried out to further improve access: two bus bays (stops) near the Alchemia complex, subterranean pedestrian access to the complex underneath the SKM suburban railway station, cycling paths running alongside the complex.

CYCLING-ACCESSIBLE – 769 bicycle parking spaces inside & in the vicinity of Alchemia stages I & II, with more to come in the future. Each building possesses change rooms for bicycle commuters, with personal lockers and showers.

FRIENDLY WORKING ENVIRONMENT – built with 100% construction materials with low Volatile Organic Compound (VOC) content. The air is pumped from outside and purified using the best air filters. Improved-efficiency building ventilation. Smoking is permitted only in designated areas. Employees have unrestricted access to natural light and, in most cases, to the view outside.

>20% SAVINGS IN ELECTRICITY USE (based on energy model calculations, compared to a building with similar energy needs, but without the technological features employed in Alchemia). Energy use reduced thanks to Building Management System (BMS) and all interior installations metered, as well as efficient light fixtures, efficient HVAC system, energy-efficient building exterior, movement sensors and light that is automatically switched off after working hours.

APPROX. 50% SAVINGS IN WATER USE (potable water, not for consumption) - achieved using flow-reducing fittings, native plant species in green areas and rainwater retention tank for watering plants.

CLEANER CONSTRUCTION SITE – preventing dirt and dust from spreading over the construction site and into neighbouring areas.

RECYCLED MATERIAL – Alchemia is built using components which contain approx. 20% recycled content. Furthermore, 95% of construction waste is further recycled, including building demolition waste.

LEED PLATINUM CERTIFICATE – Alchemia I & II have received the highest possible grade under the LEED scheme – Platinum. Alchemia III & IV are LEED Platinum-precertified.

LEED
PLATINIUM

WHEN SEARCHING FOR THE PERFECT OFFICE, ASK FOR THE FOLLOWING:

IS THE BUILDING CERTIFIED UNDER THE MOST ESTEEMED CERTIFICATION SYSTEM IN POLAND? WHICH CERTIFICATION GRADE DOES IT HAVE?

WHAT IS THE LEVEL OF EFFICIENCY FOR ELECTRICITY AND WATER USE?

DOES THE BUILDING HAVE GOOD ACCESS TO VEHICLE AND PUBLIC TRANSPORT? WHAT RETAIL SERVICES ARE AVAILABLE IN THE VICINITY?

HOW MANY BICYCLE PARKING SPACES ARE AVAILABLE? WHAT FACILITIES ARE AVAILABLE FOR BICYCLE COMMUTERS?
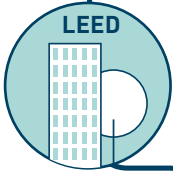
HEATING, VENTILATION AND AIR CONDITIONING (HVAC)

While an attractive and functional arrangement of space is important in itself, the 'microclimate' in the office is equally significant. One cannot work efficiently if the temperature in the office is too hot or too cold, or if there isn't enough fresh air. When looking for an office it is crucial to examine the quality and efficiency of the HVAC system, as well as any other auxiliary systems that affect the air inside the building. It is worth to mention that here at Torus we are also responsible for the management of our buildings.

MODERN METHODS OF CHILLED WATER PRODUCTION – we employ a chilled water production system that utilises outside environmental conditions – the water is cooled using cold air, without the use of chiller units. This eliminates the need for running all the units at the same time, reducing energy use. The entire system is based on tried methods and is continuously improved, further reducing running costs.
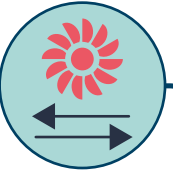
LEADERSHIP IN ENERGY & ENVIRONMENTAL DESIGN (LEED) STANDARDS – all Alchemia buildings must meet a number of requirements dictated by the certification scheme, even while still in the blueprint stage. The buildings possess a ventilation system that autonomously pumps in fresh air from the AC system. The placement of air intake and exhaust units is designed for optimal air quality inside the building. All equipment was double checked for contamination during construction and installation, which, combined with state-of-the-art air filters, guarantees the air you breathe is clean and healthy.

FULL HVAC CONTROL IN EVERY ROOM – automatic cooling and heating units allow for maintaining individual temperature conditions in every room inside the tenant's office.

24/7 HVAC EQUIPMENT MAINTENANCE – a team of specialists looking after all the HVAC equipment, ready to respond at a moment's notice.

SYSTEMS BASED ON CERTIFIED MACHINERY – top-quality, tested machinery used during Alchemia's construction serve to guarantee the quality and efficiency of all systems and features. Our equipment is certified under an independent, international body, the Eurovent Institute.

REVERSE VENTILATION IN PARKING AREAS – in addition to the buildings' regular ventilation units, parking areas are equipped with reverse ventilation units, allowing to change the direction of air flow as needed. This is especially useful if there is a fire risk, allowing smoke to be pumped out of the building.

HEATED UNDERGROUND PARKING AREAS AND RAMPS – allow safe and comfortable vehicle access during very cold conditions in winter

CUSTOMISABLE SERVER ROOM AC – available by request

AVAILABLE AIR VOLUME IN OFFICE SPACES – 50m³/h per person

LEED

WHEN SEARCHING FOR THE PERFECT OFFICE, ASK FOR THE FOLLOWING:

- WHAT IS THE AIR VOLUME PER PERSON (M³/H) AVAILABLE IN OFFICE SPACES AND IN CONFERENCE ROOMS?
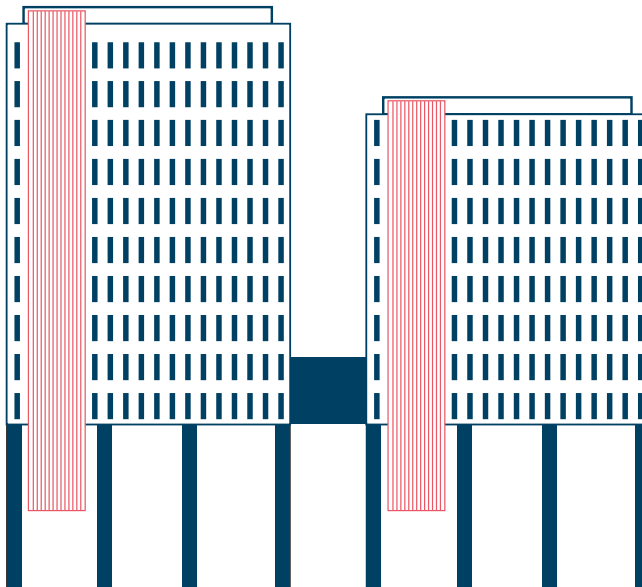
- DOES EVERY ROOM INSIDE THE TENANT'S OFFICE ALLOW FOR INDIVIDUAL ADJUSTMENT OF AIR CONDITIONING?

- DOES THE BUILDING ALLOW YOU TO COOL THE AIR DURING THE ENTIRE YEAR?

- ARE UNDERGROUND PARKING AREAS EQUIPPED WITH TWO-DIRECTION, REVERSE AIR VENTILATION?
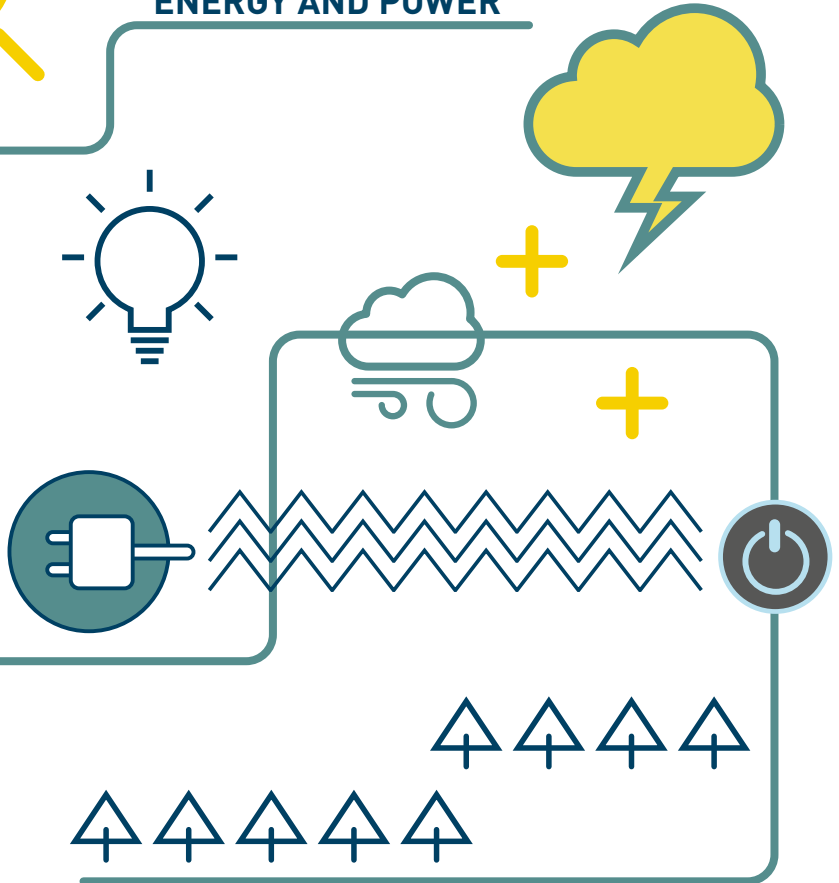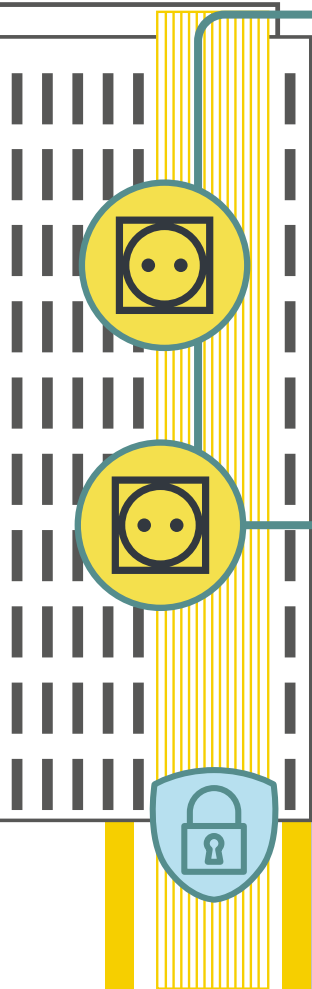
- IS THE PROPERTY DEVELOPER ALSO RESPONSIBLE FOR BUILDING MANAGEMENT?

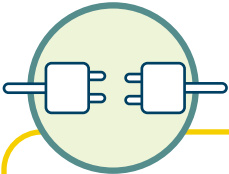- IS THERE A 24/7 HVAC MAINTENANCE SERVICE?

ENERGY AND POWER

The energy infrastructure in Alchemia encompasses the following power systems: medium-voltage, receiving electricity from the power company and low-voltage, supplying electricity to offices. Alchemia buildings possess an advanced energy security system, supplying each floor with two power lines, each from a different power source. The system also includes backup power generators and two independent, simultaneously-running Universal Power Supply units.

TWO INDEPENDENT POWER LINES – two power sources, drawing power supplied by two different electricity companies

TWO INDEPENDENT POWER GENERATORS – able to operate simultaneously or independently. The energy system in Alchemia allows a flexible level of control of how much energy is supplied to each building floor depending on the need. The system is also equipped with a unit synchronising the generators with the power grid, which allows for the use of the third, internal power line without any power interruption. The tenants will not even notice the power was out!

ADVANCED ENERGY SECURITY SYSTEM (SYNCHRONISING POWER GENERATORS WITH A CHOSEN GRID) – allows for the power generator to run concurrently with a chosen external power grid. In the event of external power failure, UPS units and power generators enable computer networks, lifts and the ventilation system to continue to operate for at least eight hours.

TWO INDEPENDENT UPS UNITS WORKING SIMULTANEOUSLY – max. four units per system – to ensure 100% security for server rooms and computer networks.

DEHN LIGHTNING ROD SYSTEM – coated wires on lightning conductors ensure a 100% safe environment for personnel and equipment in the building

SATISFYING CHALLENGING STANDARDS – the combined knowledge and experience of our engineering team allow us to meet and satisfy the most demanding company standards.

SAFE

WHEN SEARCHING FOR THE PERFECT OFFICE, ASK FOR THE FOLLOWING:

- HOW MANY INDEPENDENT POWER LINES, FROM EXTERNAL ELECTRICITY SUPPLIERS, DOES THE BUILDING HAVE?

- IN THE EVENT OF A POWER FAILURE OF ONE OF THE POWER LINES, WHAT SYSTEM IS IN PLACE FOR SWITCHING TO A DIFFERENT POWER SOURCE?
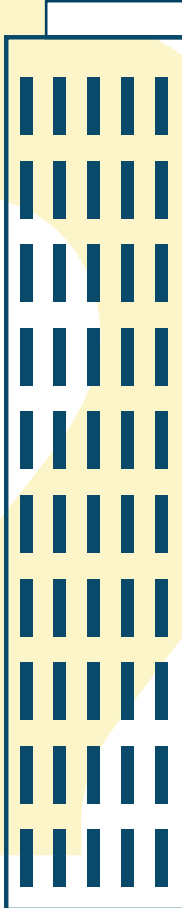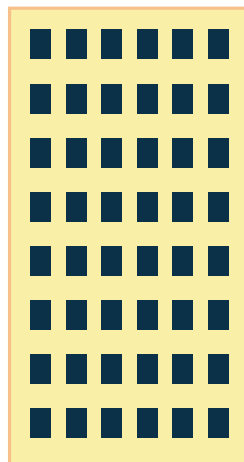
- IS THE BUILDING EQUIPPED WITH A SYSTEM THAT SYNCHRONISES POWER GENERATORS WITH THE EXTERNAL GRID?

- WHAT BACKUP POWER SYSTEM IS IN PLACE? HOW MANY UPSs ARE THERE AND HOW ARE THEY SET OUT?
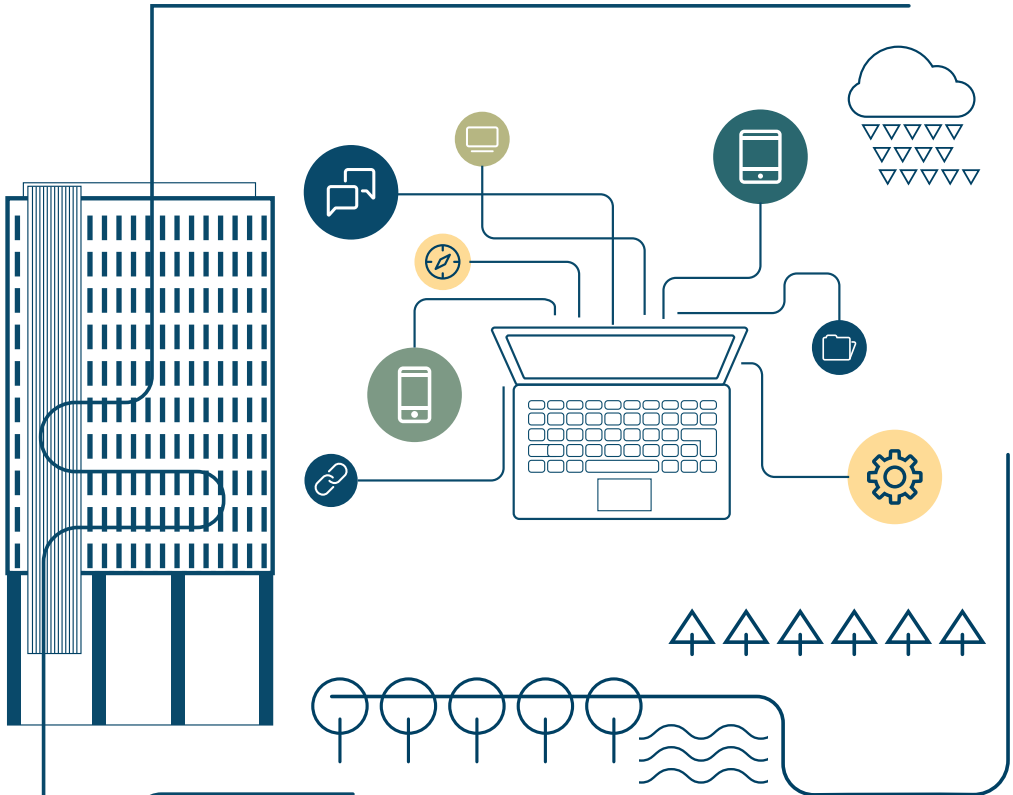
- DOES THE BUILDING HAVE A BACKUP POWER GENERATOR? WHAT SYSTEMS ARE IN PLACE AT THE TENANT'S OFFICE WHEN IT IS NEEDED?

- DOES THE SYSTEM ENSURE UNINTERRUPTED POWER SUPPLY AND IF SO, UNDER WHICH CONDITIONS?

- CAN THE BUILDING SYNCHRONISE ITS ENERGY INPUT, i.e., AUTOMATICALLY ADJUST ITS EXTERNAL AND INTERNAL POWER USE, DEPENDING ON THE ENERGY NEEDS?

SAFE

BUILDING MANAGEMENT SYSTEM (BMS)

The modern office building typically contains a few different systems ensuring comfort and safety within. The principal one is called the Building Management System (BMS), which, depending on its degree of integration with other systems, directly impacts on the ability to manage the building. The type of BMS technology used in the building will have a direct effect on the end quality experienced by the tenants. To ensure your maximum comfort and wellbeing, it is crucial to ask about the details of the BMS and what options it provides.

ADVANCED BUILDING MANAGEMENT SYSTEM – allows for the collection of a large amount of building management data (monitoring thousands of variables). The system can quickly analyse the data and adjust all the critical equipment, guaranteeing comfort without compromising secure building access and energy security.
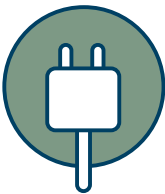
ENERGY AND HEAT MONITORING – allows for the analysis of heat use and the creation of energy profiles, even for localised areas within the building.

MULTIPLE FEATURES TO ENSURE SECURE ACCESS – front reception, security personnel patrolling the building inside & outside, anti- break--in and robbery systems, control of access and CCTV prevent entry of unauthorised personnel.

HIGH-QUALITY CCTV – two-megapixel video cameras continuously monitor the building, outside & inside.

MODERN DALI LIGHTING SYSTEM – fully integrated with motion detectors and light intensity control, allowing to maintain constant luminosity in the office while factoring in outside conditions. This results in the reduction of energy.

NEXT-GENERATION THERMOSTATS – in Alchemia we use temperature control switches that offer more monitoring and control options than your typical thermostat. They are connected to the BMS, allowing for automatic and optimal room cooling.

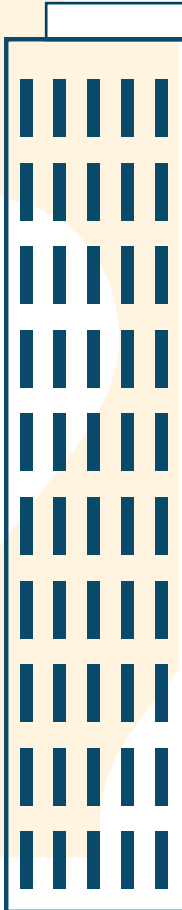## WHEN SEARCHING FOR THE PERFECT OFFICE, ASK FOR THE FOLLOWING:

- HOW DO YOU CONTROL AIR CONDITIONING, TEMPERATURE AND FAN INTENSITY IN THE OFFICE?

- IS THERE A BUILDING MANAGEMENT SYSTEM? HOW MANY PARAMETERS IS IT ABLE TO TRACK AND MANAGE? DOES THE BMS ALLOW REAL-TIME ANALYSIS AND OPTIMISING OF BUILDING EQUIPMENT AND CONDITIONS?
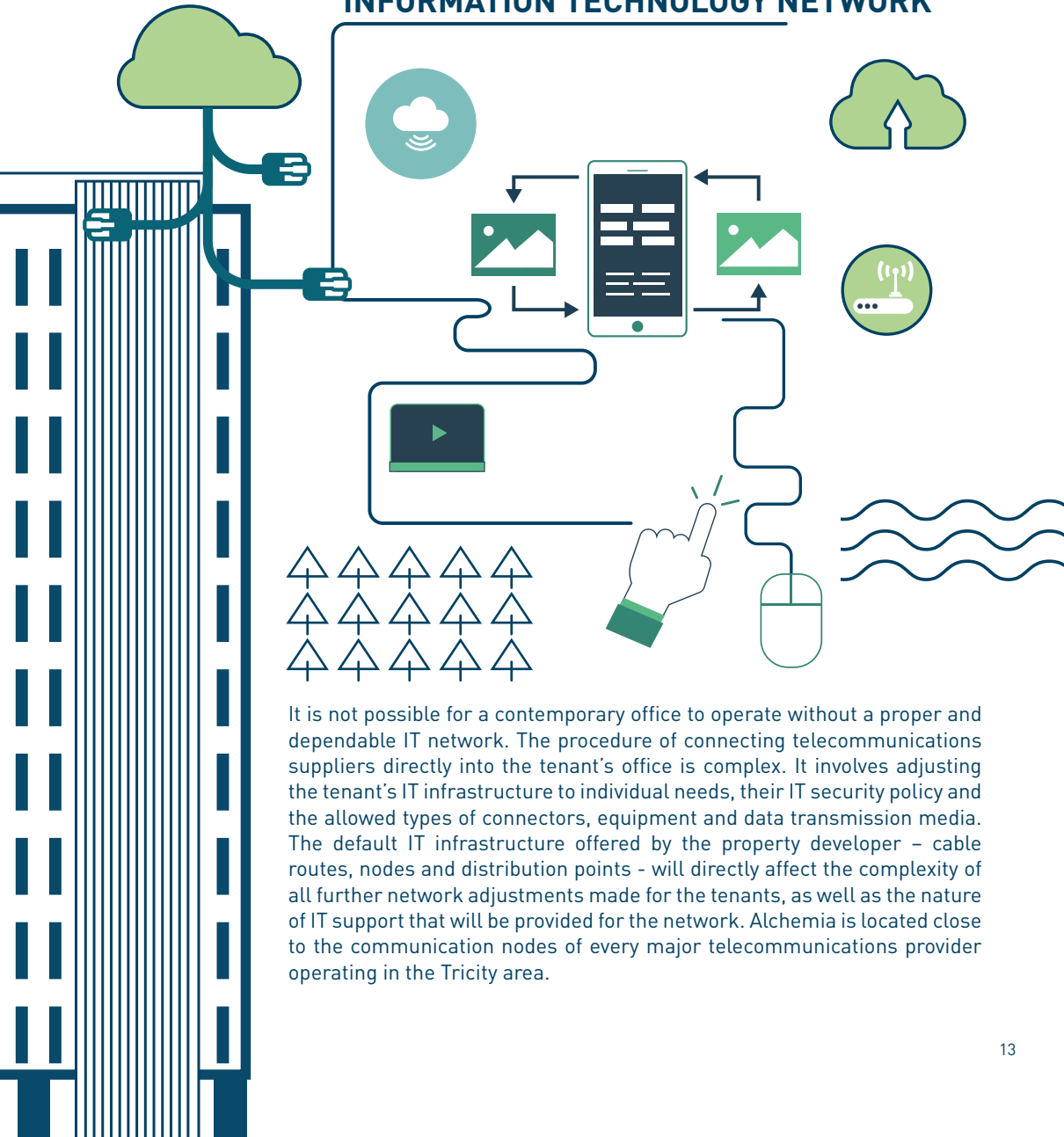
- HOW MANY SECURE ACCESS POINTS AND OTHER SECURITY FEATURES ARE THERE IN THE BUILDING (FRONT RECEPTION, SECURITY PERSONNEL, SECURITY SYSTEMS)?

- IS THE BUILDING EQUIPPED WITH CCTV? HOW LONG IS SECURITY FOOTAGE STORED FOR?

- IS THE BUILDING AND ITS OFFICE SPACE EQUIPPED WITH MOTION SENSORS AND LUMINOSITY CONTROL?

INFORMATION TECHNOLOGY NETWORK

It is not possible for a contemporary office to operate without a proper and dependable IT network. The procedure of connecting telecommunications suppliers directly into the tenant's office is complex. It involves adjusting the tenant's IT infrastructure to individual needs, their IT security policy and the allowed types of connectors, equipment and data transmission media. The default IT infrastructure offered by the property developer – cable routes, nodes and distribution points - will directly affect the complexity of all further network adjustments made for the tenants, as well as the nature of IT support that will be provided for the network. Alchemia is located close to the communication nodes of every major telecommunications provider operating in the Tricity area.

SPED-UP IT NETWORK INSTALLATION TIME – by collecting all the technical data about the network in advance from both the tenant and the operator, we are able to save precious time needed to satisfy corporate procedures, professional consultations and installation.

DECREASED NETWORK COST – the default IT network offered in Alchemia meets the needs of all but the most demanding tenants, saving them time and money otherwise needed to construct a network.

HIGH LEVEL OF SECURITY – level-6 data cables are installed by Torus; this is to make sure telecommunications providers can access the network only under our supervision. The default IT network in Alchemia is an advanced 'skeletal' network of copper and fiberoptic wiring. The telecommunications node that is connected to all data providers directly links to every floor of the complex.

CONSULTING – our wealth of experience in creating various non-standard, high-security solutions and working with numerous data providers means we can effectively advise the tenant to ensure our network meets their needs.

FLEXIBILE SOLUTIONS – the buildings are connected together by the IT infrastructure, making moving or expanding offices a lot easier – our telecommunications masts allow for the quick deployment of wireless connectivity.

SERVER ROOMS – we have server rooms available so that the tenant need not create their own – a very useful option for tenants leasing office space on a temporary basis. Our server rooms are equipped with gas-based fire extinguisher systems – an expensive, but extremely safe, solution.

INDEPENDENT TELECOMMUNICATIONS – Torus is an independent telecommunications data provider, meaning we can also provide tenants with these services, including access to the Internet. This allows us to provide telecommunications services in case there are delays caused by the tenant's default operator.

WHEN SEARCHING FOR THE PERFECT OFFICE, ASK FOR THE FOLLOWING:

- WHICH TELECOMMUNICATIONS PROVIDERS ARE AVAILABLE IN THE OFFICE BUILDING? WHAT KIND OF DATA CABLES ARE USED IN THE BUILDING AND HOW MANY CONNECTIONS ARE THERE?
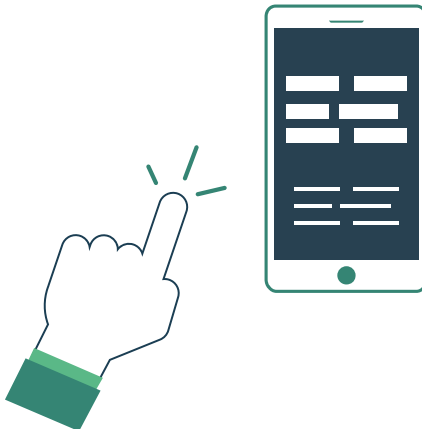
- WHICH GRADE OF DATA CABLING IS USED IN THE BUILDING?

- WHO IS RESPONSIBLE FOR LIAISING WITH THE DATA PROVIDER AND BUILDING AN IT INFRASTRUCTURE FOR THE TENANT? WILL THE INFRASTRUCTURE BE READY ON THE DAY THE OFFICE BECOMES AVAILABLE?
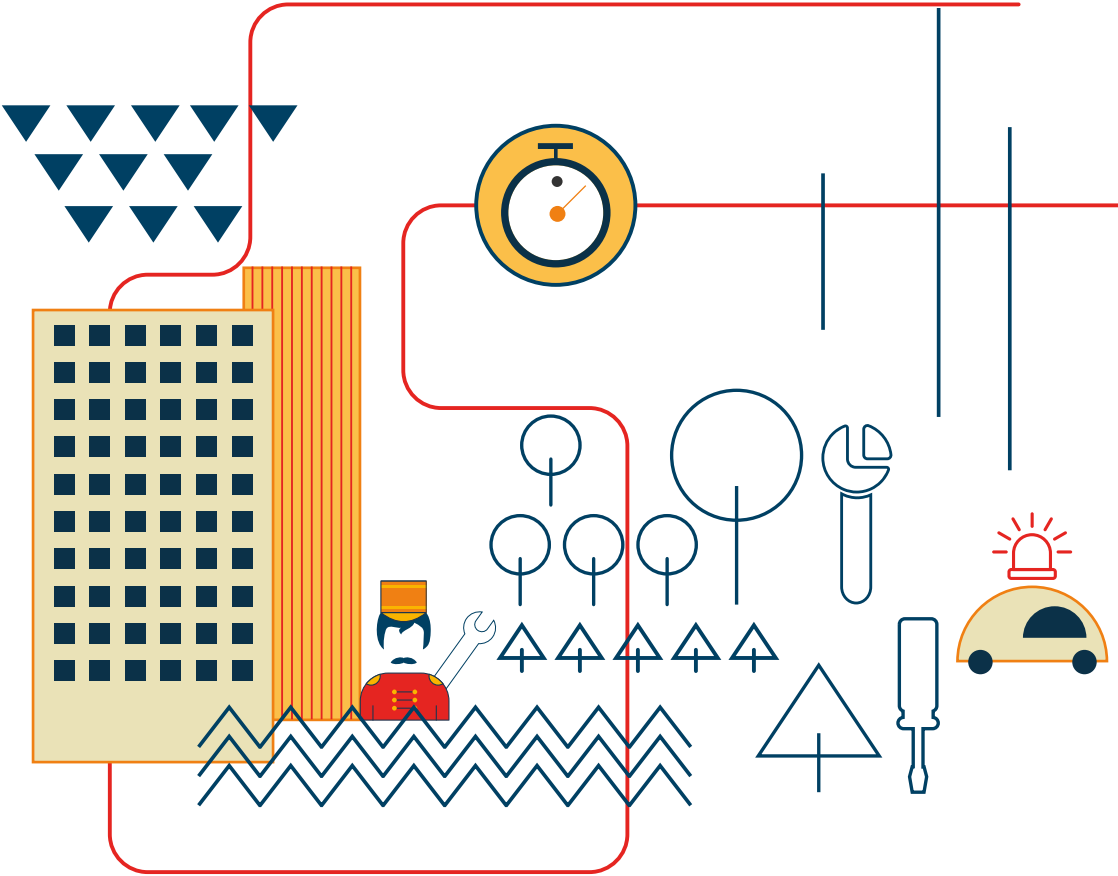
- IS THE PROPERTY DEVELOPER READY TO HANDLE NON-STANDARD SOLUTIONS, e.g. INVOLVING HIGH-SECURITY NETWORKS AND/OR COMPLEX CORPORATE REQUIREMENTS? HAS THE DEVELOPER IMPLEMENTED SUCH NON-STANDARD SOLUTIONS BEFORE?

- DOES THE DEVELOPER PROVIDE AN OPTION FOR THE TENANT TO INSPECT THEIR TYPICAL CABLE CHANNEL?

- HAVE THERE EVER BEEN IT INFRASTRUCTURE PROBLEMS IN THE BUILDING? (FOR THIS QUESTION, IT MIGHT BE USEFUL TO CONTACT ANOTHER COMPANY ALREADY LOCATED IN THAT OFFICE BUILDING)

TECHNICAL SUPPORT

Technical errors and network outages can take place in any office building, even in a new and modern one. Advanced systems are in place for speedy problem detection and troubleshooting. Coupled with our well-oiled Alchemia support team, this means our tenants can rest easy knowing we are always looking after them.

DAYTIME TECHNICAL SUPPORT (8am to 10pm)
max. 30min response time

OFFPEAK TECHNICAL SUPPORT (10pm to 8am)
max. 1h response time

SINGU – our technical problem reporting system,
available to all tenants

TECH CONCIERGE (optional) - comprehensive tech
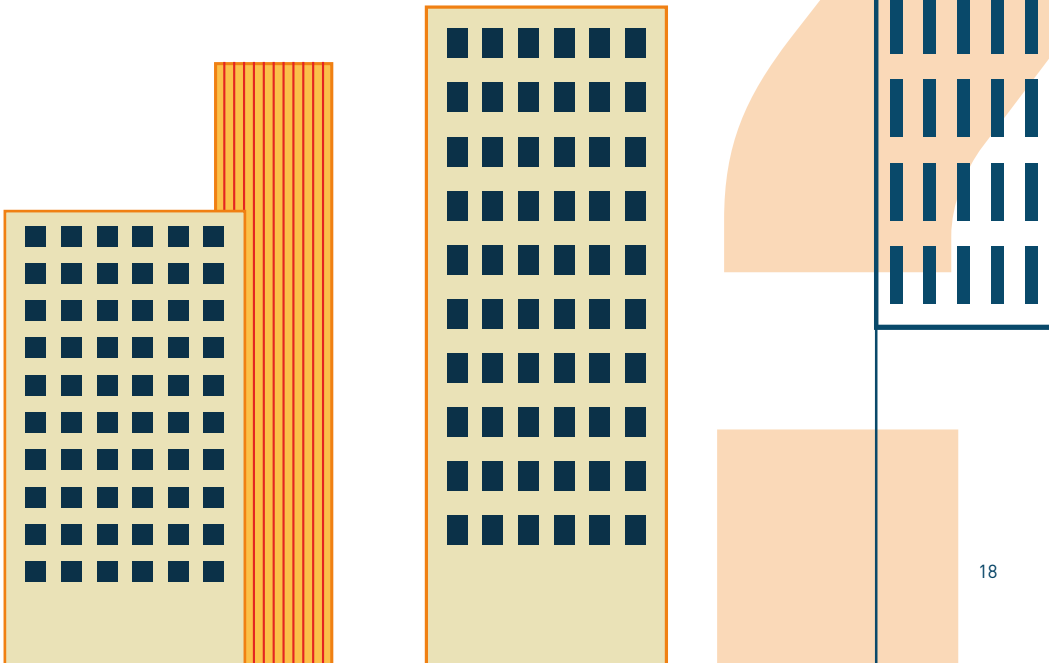support for the tenant's office

WHEN SEARCHING FOR THE PERFECT OFFICE, ASK FOR THE FOLLOWING:

HOW CAN THE TENANTS REPORT TECHNICAL PROBLEMS AND OUTAGES?

DOES THE OFFICE BUILDING HAVE 24/7 MONITORING? WHICH SERVICES ARE INCLUDED?

WHAT IS THE STANDARD TECH SUPPORT RESPONSE TIME, DURING OFFICE HOURS AND AFTER HOURS?

IS THERE A COMPREHENSIVE TECH SUPPORT SERVICE AVAILABLE?

TORUS