
BUILDING USER GUIDE

Palladium – Office



Source: Palladium

Palladium (WE1304) nám Republiky 1, Prague 1, Czech Republic



10.12.2019

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Disclaimer

The landlord endeavors to update the information and will provide the Lessee in case of change but does not assume any liability for the constant relevance of these.

INTRODUCTION

This Building User Guide aims to provide a simple and quick reference for the occupants of the building, explaining how the building and its facilities operate on a day-to-day basis and who to contact in case of a problem or emergency. It describes the systems that have been employed and how they work, so that users can optimize the efficiency of the building and ensure a safe, healthy and comfortable working environment. In addition, water and energy savings tips have been provided for the building users to save water and energy and reduce operation costs. The guide provides users with the necessary information pertaining to the building, including operation, maintenance and troubleshooting procedures.

DESCRIPTION OF THE PROPERTY

Palladium is a retail and office center which is divided in three main buildings with up to six stories above and five below ground. It has been opened in 2007 and was completed in 2009. The building footprint of Palladium is 13.000 m² on a site area with 13.632 m². Palladium offers a rentable area of 59.000 m² with approximately 20.000 m² for office area from the third up to the fifth floor and approximately 39.000 m² of retail with gourmet floor from the second underground floor up to the second floor. The third to fifth underground floors are used as garage.

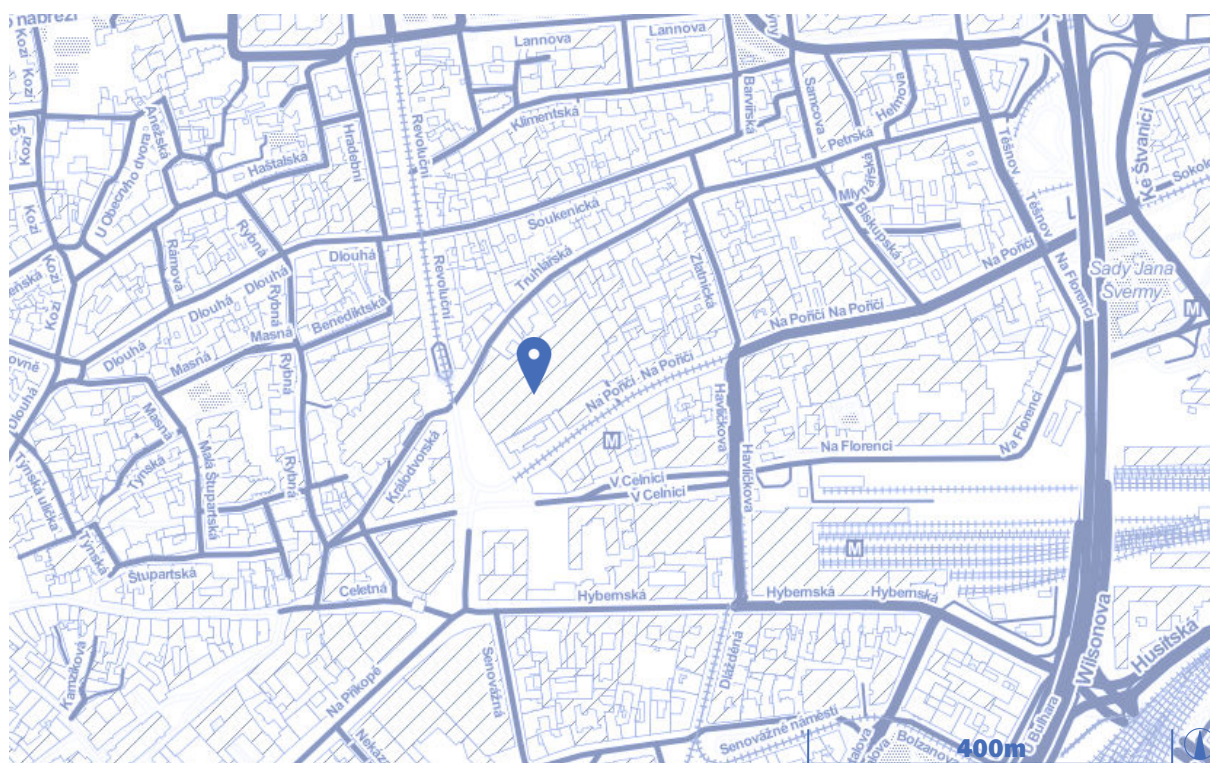


Figure 1. Location of Palladium

Source: Made with Map Stack by agradblue GmbH

LOCATION

Palladium **nám. Republiky 1,** **Czech Republic**

Palladium is located at the edge of Prague's historic center directly at Náměstí Republiky square. The surrounding is vivacious with various other malls, shops and sights which attracts many tourists.



Figure 2. Location in Prague



Figure 3. Location in Prague

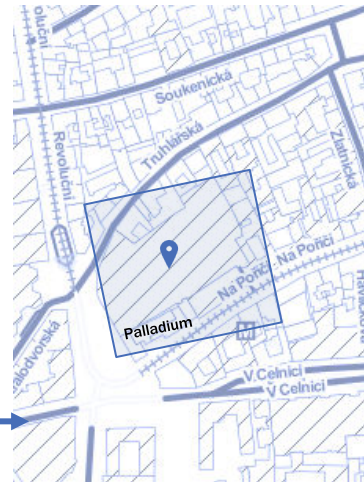


Figure 4. Location of the project site

Source: Made with Map Stack by agradblue GmbH

CONTACTS

EMERGENCY

Ambulance
T. 155

Fire Brigade
T. 150

Municipal Police
T. 156

Emergency (Ambulance)
T. 112

BUILDING

Office Lobby - Na Poříčí
Tel. +420 225 770 256
recepce.naporici@palladiumpraha.cz
Mo. – Fr.: 7 am – 7 pm




Office Lobby - Náměstí Republiky
Tel. +420 225 770 252
recepce.namesti@palladiumpraha.cz
Mo. – Fr.: 7 am – 7 pm

Hotline Palladium
Tel. +420 225 770 770
hotline@palladiumpraha.cz
Mo. – Fr.: 7 am – 5 pm

Security Cockpit
T. +420 (0) 225 770 269
ssi.velinpalladium@ssi.cz

ACCESSIBILITY & TRANSPORT CONNECTIONS

As Palladium is located in the city center, it is reachable effortlessly from every district. Approx. 900 parking stalls over three underground floors are provided in the building, making it simple to find a parking spot in the dense city center area. Furthermore, it is easily approachable by public transportation (www.dpp.cz). The station Náměstí Republiky ensures access to several bus, tram and metro lines as well as numerous other stations nearby the property. The average commuting times from the following destination points are estimated as:

-  **City Hall:** 8 min by car, 10 min by bus
-  **Central Train Station:** 5 min by car, 10 min by metro
-  **Airport:** 29 min by car, 47 min by public transport

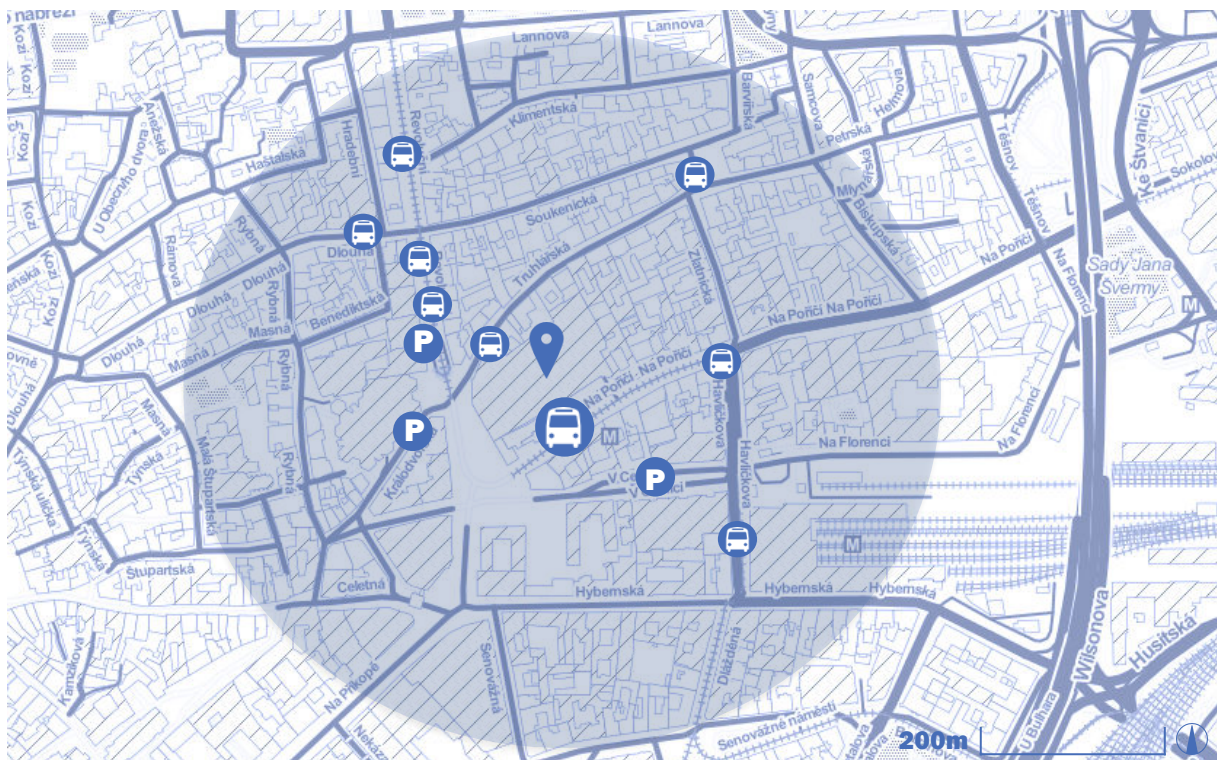


Figure 5. Location of transport connections

Map Source: Made with Map Stack by [agradblue GmbH](http://agradblue.com)

VEHICLE PARKING

The entrance to the parking area is in the street Revoluční, approximately 90 m from the main building. The public parking area extends from the fifth to third underground floor of the building.

The parking garage is accessible by two entrances: Firstly, from Na Poříčí (for delivery and long-term parking of personal vehicles); the other from Revoluční street, both ending in the pedestrian zone Náměstí Republiky. The parking garage is accessible seven days per week and is continually monitored by security staff.

Two elevators access from the parking garage to the Palladium office area.

There are parking spots which are reserved for the office complex customers and for long-term parkers based on a monthly parking rate. In total, approx. 900 parking spaces are available.

Entrance into the garage with a vehicle is made possible either by taking a temporary (hourly) parking ticket from one of the entrance terminals or through use of a long-term parking card.

In the first underground floor of the parking garage there is a bicycle parking area with 36 bike racks. It is recommended not to park bicycles inside the courtyard facing the street Na Poříčí due to anti-theft safety reasons.



Figure 6: Entrance to the parking area

Source: agradblue GmbH



Figure 7: Underground car parking areas

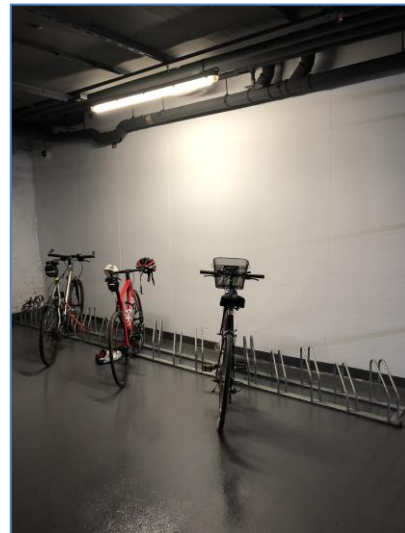


Figure 8: Bicycle parking areas

PARKING RULES

The maximum speed limit in the parking garage is 10 km/hr.

Vehicles that use CNG or LPG are not allowed in the garage.

The following is not allowed to take place on the parking area:

- The use of chains
- Leaving a car in idle
- Use of the car horn

BUILDING ENTRANCES

Palladium has two main entrances designated to the office tenants and visitors which are only accessible by an access card system. Office lobbies are open from Monday to Friday from 7:00 am to 9:00 pm. Tenants who have authorization may access the lobbies 24 hours a day, 7 days a week.

Office employees have access to their specific office premises according to the level of authorization on their access cards.

Access to Level +2

From the office premises, tenants may access the gourmet floor on level +2 using their respective elevators and passing through turnstiles with their access cards.



Figure 9. Location of public and employee entrances

Source: Palladium

ELEVATORS & ESCALATORS

There are passenger lifts serving the office floors.



Figure 11. Customer elevators located at the roundabout of the common area

Source: agradblue GmbH

HANDICAP ACCESSIBILITY

All entrances are designed to ensure easy entry of disabled persons. At the main office entrances, receptionists are available to assist the disabled by opening the gate next to the turnstiles. On other levels, all turnstiles and doors protected by access control allow for wheelchair entry without assistance of a third party.

Passenger elevators are well-fitted to aid the effortless use by persons in wheelchairs. Control panels are equipped with Braille signage. Moreover, arrival in each elevator landing is announced acoustically.

Disabled toilets: On each office level there are disabled toilets, which are equipped with a special emergency dial for handicapped persons. The emergency call is connected directly to the Security cockpit.

Parking for disabled: In the underground parking garage, there are enough parking spots dedicated to handicapped persons. These are in proximity to public elevators. Other visitors of the parking garage are forbidden to park on these parking places.



Figure 12: Handicap parking spots

Source: agradblue GmbH



Figure 13: Signage for disabled toilets

SECURITY

Visitor Entrances: All main entrances of the office complex are accessible for visitors during the opening hours from 7 am to 7 pm on working days.

Public Parking Access: The parking garage is accessible for cars at any time. After the opening hours the visitors can enter/exit the garage via the special night entrances/exits with their parking ticket.

Tenant Access: All tenants have access cards to enter the property.

Tenant Parking Access: Tenant vehicles are granted access to the garage via employee parking cards and occupant access controls (shown below).

On the entire site there are about 140 cameras for anti-theft security.



Figure 14. Security Camera

Source: agradblue GmbH



Figure 15. Access Control Parking



Figure 16. Access Control Building

FIRE DETECTION SYSTEM

The building is equipped with appropriate fire protection equipment which includes sprinklers, emergency lighting, a smoke and heat extraction systems, fire hoses, fire extinguishers, smoke detectors and an alarm system. The emergency power supply is produced by a generator. There is also a sprinkler system with the sprinkler tank located on the lower floor.

The systems are checked by the facility management on a regular basis as required by law.

The fire extinguishers for the tenant spaces must be provided and maintained by each tenant and comply with national fire regulations.

The space in front of the fire extinguishers and fire hoses must be kept clear all the time.



Figure 17. Fire Extinguisher

Source: agradblue GmbH



Figure 18. Fire Hoses Common Area

FIRE PREVENTION & ACTION IN CASE OF FIRE

Tenants should also be aware of the following fire prevention guidelines (Table 1) and note the steps to follow in case of a fire (Table 2). Building users should make themselves aware of the fire evacuation plans which are hanging in the corridors of the leased premises and in the common areas and inform themselves about the next possible escape route and exit.

FIRE PREVENTION GUIDELINES	
	Smoking is prohibited indoors. No ash trays are provided.
	No fires or open flames such as candles are allowed.
	Self-closing doors cannot be manipulated.
	Familiarize yourself with the nearest escape route.
	Familiarize yourself with the position of the alarm push buttons.
	Familiarize yourself with the position of the fire extinguisher.

Table 1. Fire guidelines









STEPS IN CASE OF FIRE	
1. Keep Calm	
	2. Press the alarm push button.
	3. Call 150 in an emergency.
	4. Warn others who might be in danger.
	5. Close all doors.
	6. Follow the indicated escape signs/routes.
	7. Do not use the elevator.
	8. Once outside, find your appropriate assembly point.
	9. Pay attention to the loudspeakers and listen to advice.

Table 2. Steps in case of fire

Source: Based on the "Brandschutzordnung" (fire protection regulation), compiled by agradblue GmbH

ADDITIONAL SCENARIOS AND GUIDELINES IN CASE OF FIRE

Duties upon discovering Fire; How to Report fire: When a person discovers fire that can be extinguished alone, such individual is obliged to do so immediately using all suitable and available fire extinguishing means. If extinguishing the fire alone is beyond the powers and the means available, this must immediately report to the fire registration office by pressing the fire signaling button (located on all staircases and routes) or on telephone number 225 770 266. In the event the fire cannot be reported to the fire registration office, it must be reported directly to the Fire Rescue Brigade by dialing 150.

How to Announce Fire Alarm: Fire alarm can be announced automatically by the Evacuation Broadcasting System (EPS) and/or the fire alarm can be announced by calling “HOŘÍ” (“FIRE”) in order to ensure that all persons in the part of the building at risk are warned of the risk on all floors and in all areas of the building.

Duties upon Fire Alarm Announcement:

- Visitors must exit the building using marked routes as quickly as possible.
- Employees of the complex are obliged to adhere to instructions of their managers and according to the situation of danger:
- Assist with evacuation of persons found in the endangered part of the building (using marked routes)
- Follow instructions of the preventive fire guard commander (until arrival of the Fire Rescue Brigade commander)
- Under the direction of their managers, leave the endangered workplace of the building and gather at the designated assembly point based on the OC Palladium evacuation plan (outside areas)

Emergency telephone numbers

Fire reporting desk	225 770 266
City of Prague Fire Station:	150
Emergency – integrated ambulance	112
Czech Republic Police	158
Ambulance	155
Gas – on call assistance	1239
Electricity – on call assistance	224 915 151
Tap water – on call assistance	840 111 112
Municipal Police	156

In Case of Smoke:

- Lower yourself as close to the floor as possible to minimize smoke inhalation
- Proceed to the nearest escape route/stairwell

In Case the Escape Routes Are Blocked:

- Stay where you are
- Close the door and seal all the gaps where smoke could enter the room with a wet cloth
- Call 115 (The Fire Emergency Hotline)
- Attract attention to yourself via the window
- Wait for fire brigade or others for help

ASSEMBLY POINT

The assembly point indicated in the following image have been established for use in the event of an emergency. All building users should go to the indicated assembly point in case the building needs to be evacuated for any reason. Signage inside the building guides to the closest route to the assembly point.

Every six months an evacuation exercise is performed by the property management including all tenants.

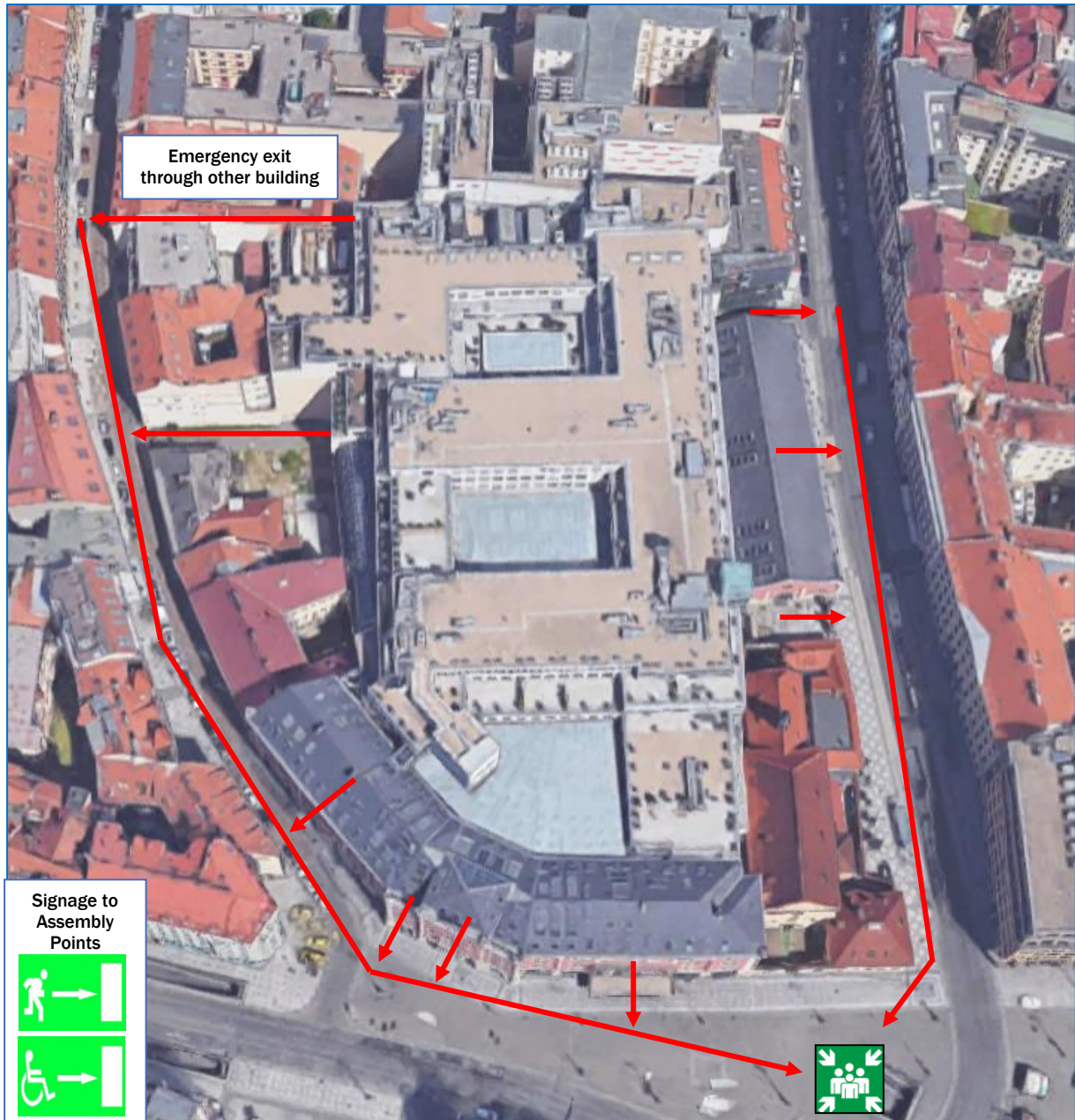


Figure 19. Assembly Points

Source: Google Maps modified by agradblue GmbH

HVAC SYSTEM

The Facility Management is responsible for the main HVAC systems described below.

Heating: For heating, there are three gas fired boilers of which two are condensing boilers. The boilers supply the ventilation system, air door curtains, the static heating system, fan coils and heat pumps via a condensation circuit. The Office complex is heated through the ventilation system, while the office areas are heated with heated air from the AHU's and underfloor convectors. The lobby of the office area is heated through underfloor heating.

Cooling: Cooling is generated by two chillers which supply the ventilation system and fan coils. The Office complex is cooled through the ventilation system while the office areas are mainly cooled through fan coils and partly through the ventilation system. The lobby in the office area is cooled via the ventilation system. In addition, there are four air-cooled chillers for the server cooling. For re-cooling there are two open cooling towers on the roof top.

Ventilation: The ventilation system consists of about 47 air handling units (AHU) delivering fresh air to the building. Most of the AHUs do have frequency inverters and heat recovery. The AHUs serve the mall, office, kitchen, and garage areas.



Figure 20: Boilers



Figure 21: Chiller



Figure 22: Underground Ventilation



Figure 23: Rooftop Ventilation

Source: agradblue GmbH



Figure 24: Cooling Tower

FAÇADE SUN PROTECTION

In order to provide external sun protection around the office complex, windows are equipped with moveable external horizontal venetian blinds which are centrally controlled via a timer and a sun and wind monitor. The blinds are centrally controlled according to the solar radiation with decentralized/room-based actuators for individual override.



Figure 25: External sun protection

Source: agradblue GmbH



Figure 26: External sun protection barracks

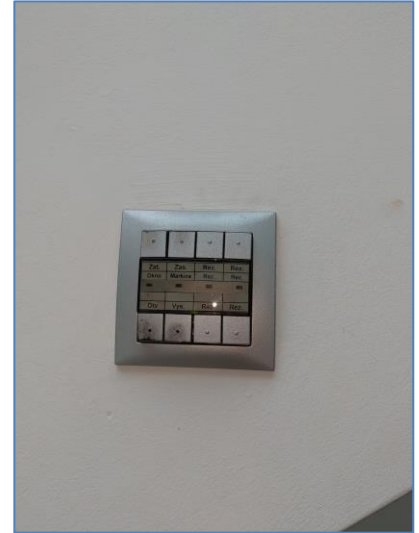


Figure 27: Control panel barracks

LIGHTING AND ELECTRIC

The building is connected to the power grid via a transformer in the lower floor. Each tenant space is equipped with circuit breakers. A circuit breaker is an automatic switch that protects electrical circuits from overload or short circuiting by interrupting the flow of electricity to the circuit. A tripped circuit breaker can be reset with a flip of a switch.

Floor mounted as well as wall mounted electrical outlets serve the tenant spaces.

The original office lighting mainly consists of specular louver luminaires suitable for computer workplaces equipped with florescent tubes and downlights. Due to ongoing modernization and tenant fitout various luminary types can be found in the tenant areas. Luminaries in general are operated by the tenant based on the daylight availability

HVAC, LIGHTING AND SUN PROTECTION CONTROLS

The building has a Building Management System (BMS) to manage the HVAC system that also acts as an energy management system. The main meters and submeters are connected to the BMS.

Controls for indoor air temperature and lighting are made available to tenants. These controls provide greater indoor comfort for building occupants in addition to energy savings. The old control panels Figure 29 will be replaced by the new ones Figure 30 in the next years.

The sun protection can also be controlled by occupants. In case of extreme weather events (wind, heavy rain, temperature below 0°C) they are automatically raised to prevent damage. The luminaries inside the offices are grouped on various circuits and are controlled by the BMS. Currently, only half of the circuits are in operation during opening hours to save energy.



Figure 28: Lighting and blinds controls
Source: agradblue GmbH



Figure 29: Temperature Control (old)



Figure 30: Temperature Control (new)

WASTE COLLECTION & RECYCLING

Different waste receptacles marked accordingly in appropriate colors are made available for waste recycling and disposal.

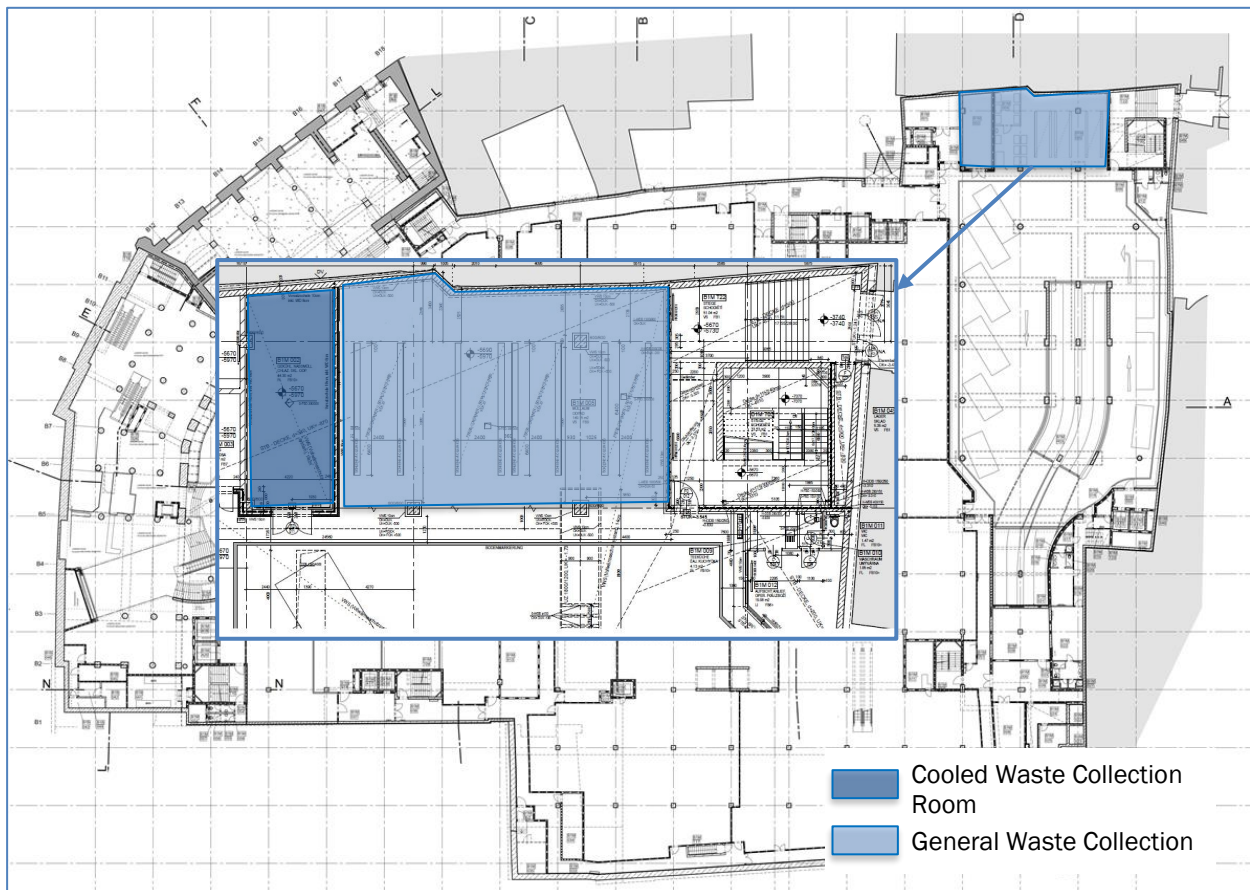


Figure 31. Waste Collection Points

Source: Palladium

The tenants must separate all wastes into categories as indicated in the following table and bring all waste to the specific containers at the common collection place on level -1, next to the loading dock before or after opening hours. A cooled waste collection room is also available for organic waste collection.











				
Mixed Waste	Organic Waste	Glas	Plastic	hazardous waste
				
Wood	Paper/Cardboard	Light Bulbs	Electronic Waste	Plastic Containers

Table 3. Overview of Waste Recycling and Collection

Sources: Valorlux, Freepik, Carney's Waste Systems

Tenants are responsible for separating their waste and bringing it to the waste collection areas. Waste shall be collected in bags or containers conforming to the appropriate regulations.

Removal routes from individual rentable units to waste storage will take place mostly via service corridors and the related system of elevators. Since transport of waste and delivery of goods are performed through the same service corridor, these activities should be scheduled to occur separately.

CLEANING PRACTICES

The common areas are cleaned regularly by the building management. In winter, as needed, building management also takes care of snow removal. The tenants are responsible for the cleaning of their spaces.

Green cleaning products should be used when possible. The following labels are part of the Global Ecolabelling Network (GEN) and are available in Europe. GEN labelled products meet the sustainability criteria outlined by GEN and are proven to be cost effective over the product's lifetime.

RECOMMENDED GREEN CLEANING PRODUCTS (Global Ecolabeling Network)	
The Blue Angel Eco-Label	
EU Ecolabel	
TÜV Rheinland	
Nordic Ecolabel	
Good Environmental Choice	
Living Planet	
Vitality Leaf	

Table 4. Recommended Green Cleaning Products

Source: Compiled by agradblue GmbH

HOUSE RULES

The House Rules which have been established at the project building have been outlined and provided to all tenants. Please refer to this document for further details.



HOUSE RULES OFFICES

General Provisions.....	2
Definitions	2
General Information	3
Office Premises Opening Hours ...	4
Use of Entrances	5
Disabled in Palladium	5
Key System.....	5
Regulations on conduct	6
Marketing	8
Deliveries	8
Safety Rules.....	8
Cleaning.....	10
Waste Disposal	10
Technical Provisions.....	11
Fire alarm guidelines.....	12
Information	14
Other Services	14
Office Lobbies	14
Breaches.....	14
Parking Regulations.....	15



House Rules version 1. 8. 2017. This version replaces all previous versions. House Rules are subject to change without prior notice.

Figure 32. House rules

Source: Palladium

SERVICES

AMENITIES

Neighborhood Amenities: There is a variety of amenities within a 400 m radius of the building including a cafe, a fitness studio, ATM, banks and a post office.

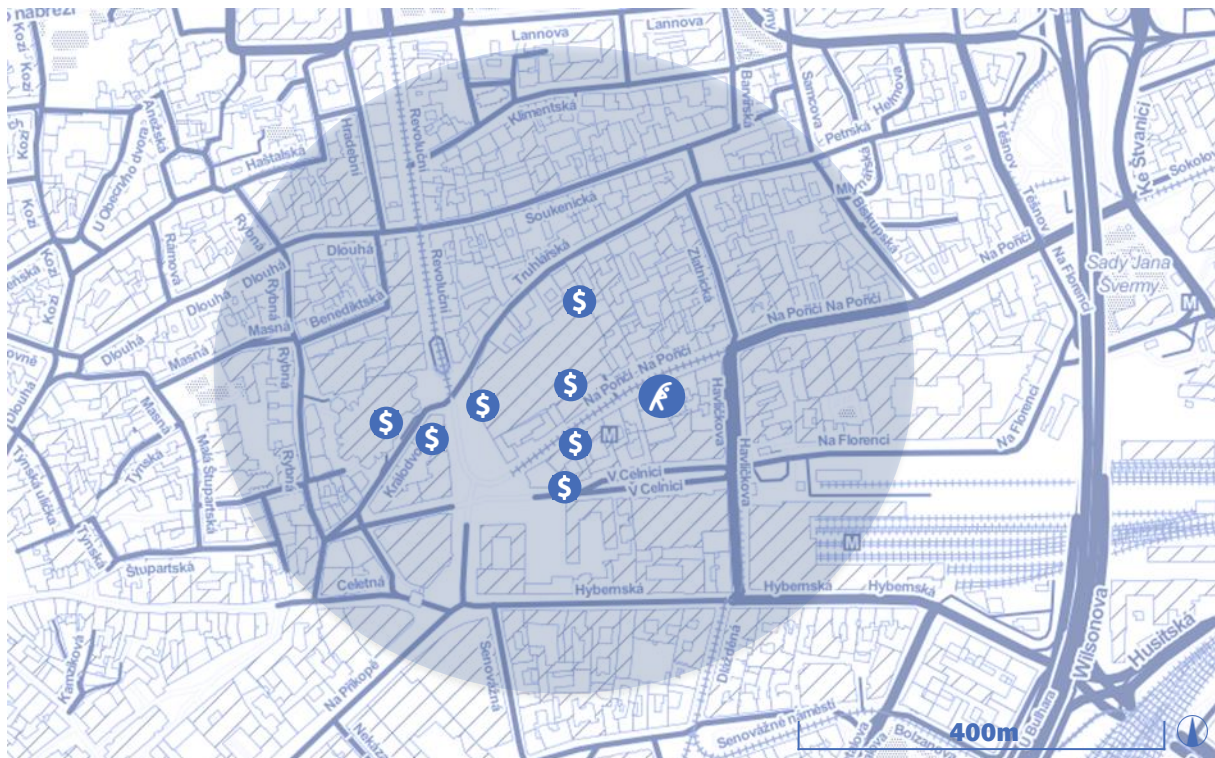


Figure 33. Location of amenities within 400 m of the project building

Source: Made with Map Stack by agradblue GmbH

Besides the amenities around the property the mall itself offers a wide range for the visitors.

To find all amenities and shops there are placed information terminals all around inside the mall which the visitors can use. After the search the way to the wanted place is shown on a digital map.

Mall Amenities: The mall offers a variety of amenities which can partly be used by tenants and visitors. Some of the amenities are shown in the following figure. Additionally, inside the parking garage a car wash is located.



Figure 34. Available amenities inside the mall

Source: <https://www.palladiumpraha.cz/en/center-map/>



Figure 35. Screenshot and Visual of Information Terminal
Source: agradblue GmbH

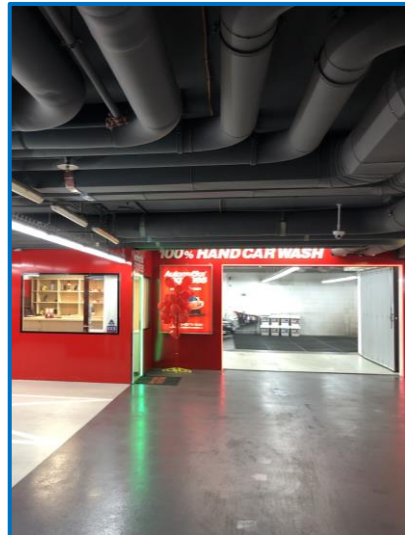


Figure 36. Car wash inside the parking garage

FIRST AID

First aid kits and a defibrillator are provided by the Building Management at the Info Kiosk and the first aid room.

Each tenant is responsible for providing first aid kits for their own use.

NOTICE OF DEFECTS

Building Management is responsible for the preventive maintenance and defects with regards to the following systems which belong to the building:

- Air conditioning
- Ventilation
- Plumbing
- Fire Protection
- General Inspections of Electrical Components

General contact for tenant notifications of defects, damages and other claims related to usage of the leased areas and public areas of the property is the Hotline Palladium (see contacts). The regular working hours are from Monday to Friday from 7 am – 5 pm. Outside the regular working hours all calls to this contact are redirected to day and night security service.

All notifications are recorded electronically and are processed by the Facility Manager.

SUSTAINABILITY




GENERAL SUSTAINABLE STRATEGY FOR TENANTS

The common areas are maintained and refurbished by the building management. The tenants are responsible for the refurbishment and maintenance of their spaces.

Sustainable products and practices should be considered as well for refurbishing, maintaining and redesigning the tenant spaces as for required ongoing purchasing and consumables. The following recommended practices help to improve the working routine for retail spaces in a sustainable way.

General Work Process:

- Prevent cross-contamination by isolating construction from non-construction areas (e.g. plastic sealing)
- Apply paints, sealants, adhesives and other emitting materials preferable after normal working hours

Recommended Sustainable Practice	
VOC-Limits for Low-Emitting Materials	<ul style="list-style-type: none"> - Paintings: 50 g/L - Adhesives: 50 g/L - Sealants: 250 g/L <p><i>More detailed information in the chapter: ECOLOGICAL PRODUCTS FOR BUILDING AND CLEANING MEASURES.</i></p>
Recycling	<ul style="list-style-type: none"> - Choose products/materials with recycled content if available - Choose recyclable products/materials
Bio-Based Products	<ul style="list-style-type: none"> - Choose bio-based products/materials if available - Exclude products of animal skin such as leather
Wood & Paper	<ul style="list-style-type: none"> - FSC-certified wood & paper - No tropical nor boreal wood - Promote paperless paying
Reuse Materials	<ul style="list-style-type: none"> - Reduce waste generation by reusing products/materials - Reuse includes salvaged, refurbished, or reused products/materials
Packing Materials	<ul style="list-style-type: none"> - Offer bio-based <u>and</u> biodegradable packing materials (bioplastics) - Promote reusable bags/packings of visitors
Extended Use	<ul style="list-style-type: none"> - Rechargeable batteries & remanufactured cartridges for printer - Choose products/materials by durability - Proactive maintenance on regular basis
Electrical Devices	<ul style="list-style-type: none"> - Purchase energy savings electronics when phasing out old equipment - Best available of European Union Energy Label (A++/A+++)
Lighting	<ul style="list-style-type: none"> - Use efficient luminaries with a long lifetime (e.g. LED) - Low amount of mercury (max. 70 picograms per lumen-hour)
Food	<ul style="list-style-type: none"> - Prefer local food sourcing within a range of 160 km - Recommended labels for food production: <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>European Union Certified Organic Food</p> </div> <div style="text-align: center;">  <p>International Fairtrade Certification</p> </div> <div style="text-align: center;">  <p>Certified Sustainable Seafood MSC</p> </div> </div>

GREEN BUILDING CERTIFICATION Palladium

The BREEAM In-Use certification of the building is now in progress and will be finalized by end of 2019. This certification must be renewed on a regular basis. Since the certification hasn't been completed by now the following figure shows an example of a BREEAM In-Use certification (*will be replaced with the real certification of Palladium by the time it is completed*).

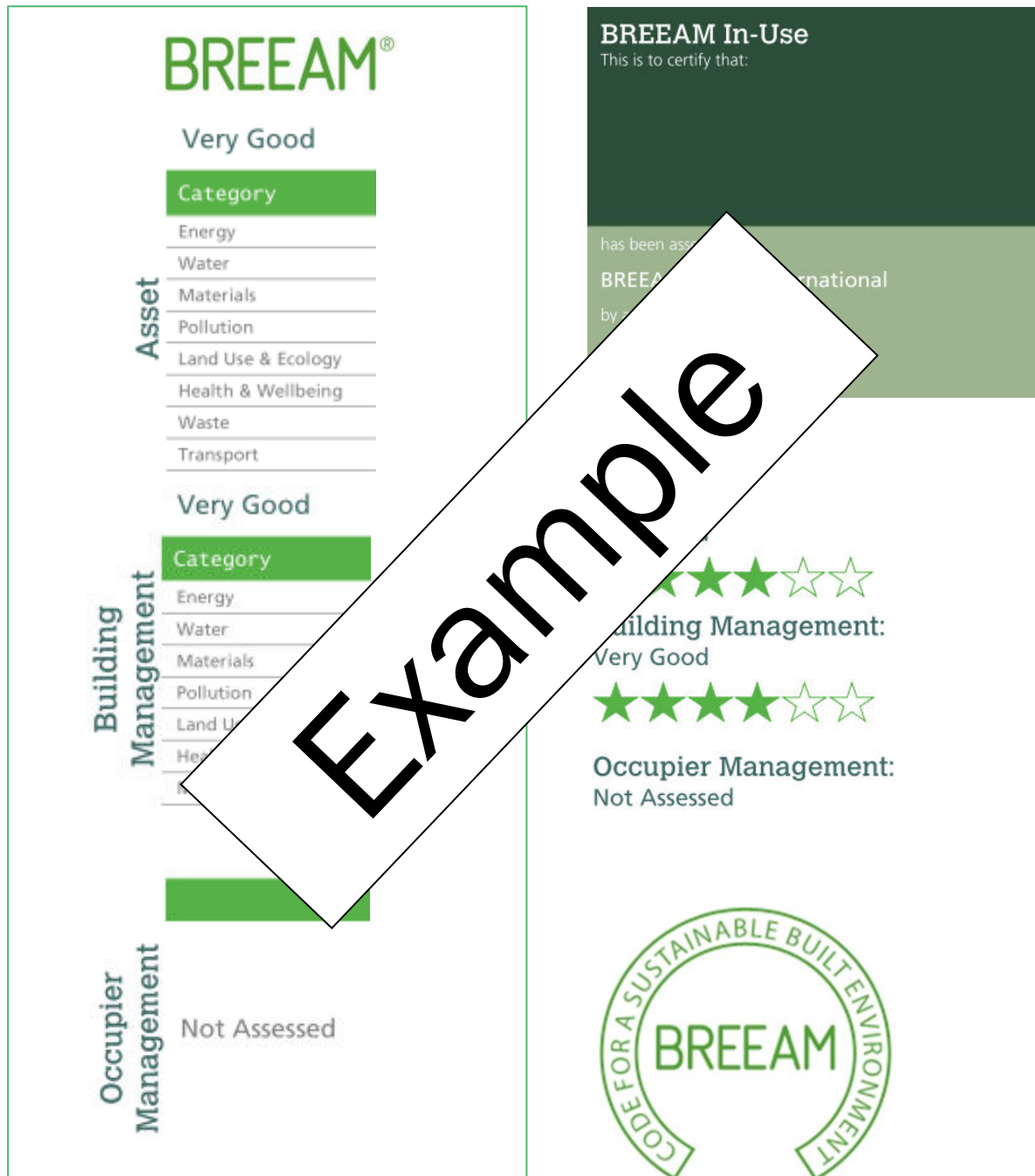


Figure 37. Example of a BREEAM In-Use Certificate

Source: Issued by BRE Global Ltd

ENERGY PERFORMANCE CERTIFICATE Palladium

Palladium: The following energy certificate has been created based on the actual energy consumption of 192 kWh/m²a. The property achieves the certification level “C” (Úsporná).

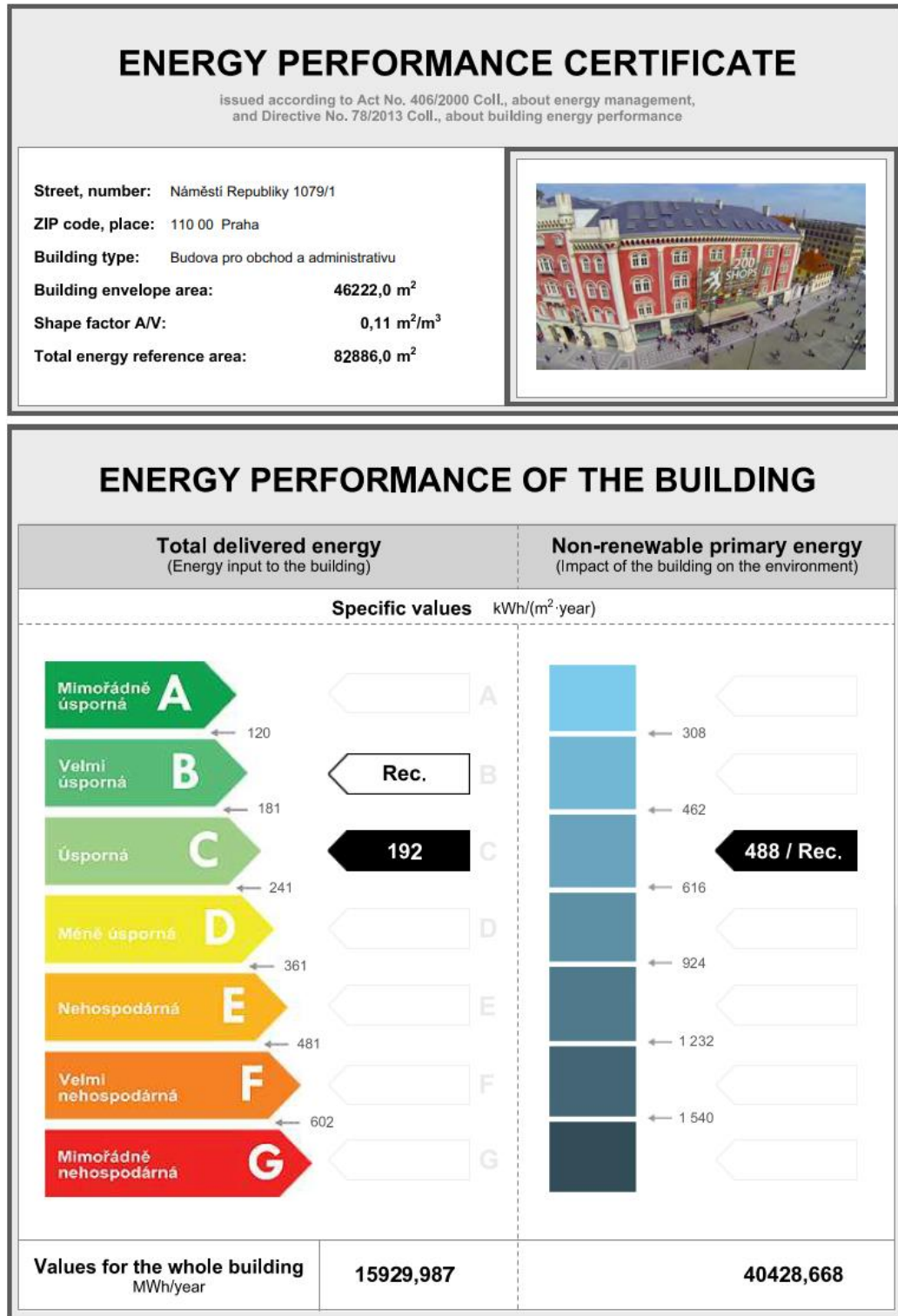


Figure 38. Energy Performance Certificate

Source: ENVIROS S.R.O

ENERGY SAVING TIPS





ENERGY SAVING TIPS	
<p>LIGHTS</p> 	<ul style="list-style-type: none"> - Only switch the lights ON when there is not enough daylight to complete work tasks. - Use task lights before using general ambient light sources. Task lights use less energy than their overhead counterparts. - Ensure lights are switched OFF when you leave the space and at the end of the day. - Use energy saving lamps or LEDs when possible. - If a room is not used all the time, use motion sensors.
<p>SUMMER</p> 	<ul style="list-style-type: none"> - Close the windows to ensure the cooling system can work effectively. - Close the exterior blinds at the end of the day to block out morning sun and corresponding internal heat gains (if not automated). - If possible, close exterior blinds during the day but make sure to ensure sufficient daylight to complete tasks.
<p>WINTER</p> 	<ul style="list-style-type: none"> - Open windows only briefly to support the natural ventilation of the room. This will reduce energy consumption and heat loss. - Exterior blinds should be kept open, especially on the southern façade to allow for internal heat gains.
<p>ELECTRONICS</p> 	<ul style="list-style-type: none"> - Ensure that the computers, printers etc. are not left ON unnecessarily. - Turn the energy saving features ON, as this will prevent your space from overheating and will also save energy. - Purchase energy savings electronics when phasing out old equipment.

Table 5: Energy saving tips

Source: Compiled by agradblue GmbH

WATER SAVING TIPS

Water consumption from flushing toilets and using sinks makes up the biggest percentage of water consumption within an office building. The building features water efficient dual flush toilets and water efficient sink faucets. Separate water metering is also provided for each tenant to assess water usage.


WATER SAVING TIPS	
	<ul style="list-style-type: none"> - Use the ECO program for the dishwasher if available - Avoid running water while washing your hands or fruits in the sink - When using hot water, only use the quantity you require

Table 6: Water saving tips

Source: Compiled by agradblue GmbH

ECOLOGICAL PRODUCTS FOR BUILDING AND CLEANING MEASURES

The following catalogues have been developed with the intent of making a considerable contribution to environmentally and health compatible inner development and equipment independently of the respective building condition – specifically the reduction of the contamination of room air with chemicals (e.g. solvents) to thus increase the well-being and satisfaction of the users in a targeted manner.

The specifications for building measures are a standard that is above the statutory minimum requirements and the state of the art (a material standard DIN+). As building certificates become established for new buildings, the offerings available of environmentally compatible building and equipment materials and cleaning agents have considerably increased in the last years. Many manufacturers now offer high-quality products in building and environmental technology that even exceed the statutory standards. Possible additional costs from use of such materials are excluded when the desired material requirements have been specified in the invitations for tender for building and facility management services early on. Subsequently, they must be agreed on in subsequent building and service contracts.

KEY	
EU	European Union
SVHCs	Substances of very high concern (REACH)
VOCs	Volatile organic compounds
SVOCs	Semi-volatile organic compounds
PVC	Polyvinyl chloride
TDS	Technical data sheet
MSDS/SDS	Material safety data sheet (pursuant to REACH)
GUT	Environmentally Friendly Flooring Association
CRIPlus	Carpet Rug Institute Green Label Plus Certificate
EMICODE	Seal of GEV (Association for the Control of Emissions in Products for Flooring Installation, Adhesives and Building Materials e.V.) (Recognized third party schemes for emission testing in LEED (V4) and BREEAM NC (2016))
Manufacturer's declaration	Legally binding confirmation from the manufacturer's product manager
FloorScore	Resilient Floor Covering Institute FloorScore Certificate

ECOLOGICAL BUILDING MATERIALS							
Building materials for internal fit-out	Relevant product ingredient(s)	Reference standard	Enhanced environmental & health requirements	Suitable proof	Explanation	Quality assurance by construction supervisor	
Concrete contact, absorbent substrates, decorative paints, grout (incl. Q-grout), primers (e.g. adhesive & deep primer), dust-binding floor paint, concrete protection	VOC / solvents & SVOC / plasticisers	VOC and SVOC (purs. to definition of EU 2015/886)	Emission, solvent and plasticiser-free (= VOCs & SVOCs < 1g/l)	MSDS, TDS	Emission and solvent-free materials are available on the market at no extra cost for the stated applications.	Visual check of packaging (construction site) and technical data sheet (proof of "VOC- & SVOC-free").	
Decorative paints and glazes for non-mineral surfaces such as metals, wood, plastics	VOCs / solvents	VOC definition as per Directive 2004/42/EC	Low VOC water-dilutable products (= VOCs < 100g/l), free of lead and cadmium-containing substances	MSDS, TDS	Water-dilutable paints are available on the market in all RAL shades for the stated applications. Exception: metallic paints VOCs (EU) < 300g/l.	Visual check of packaging (construction site) and technical data sheet (proof of being "water-dilutable").	
Anti-corrosive, protective paints for non-bearing structures	VOCs / solvents	VOC definition as per Directive 2004/42/EC	Low VOC, water-dilutable products (= VOCs < 140g/l), free of lead and cadmium-containing substances	MSDS, TDS	Water-dilutable anti corrosive paints are available on the market in all RAL shades for the stated applications. Exception: metallic paints (VOC limit = 300g/l).	Visual check of packaging (construction site) and technical data sheet (proof of being "water-dilutable").	
Sealing agents, adhesives, mounting glue on acrylate, PU, SMP and MS polymer basis for internal applications	VOCs / solvents	VOC definition as per EU 2015/886	Assurance that products are VOC-free or EMICODE EC1 (-R) / EC1 Plus (-R)	MSDS, TDS, manufacturer's declaration, EMICODE	Solvent-free sealing agents are usually described as such (on the packaging or in the data sheet); EMICODE-Label is printed on the packaging.	Visual check of packaging (construction site) and technical data sheet (proof of being "solvent-free" or EMICODE-labelled)	
Impregnations for natural stone, concrete or sandstone, non-film-forming	VOCs / solvents	VOC definition as per EU 2015/886	Low VOC (<15%), free of aromatic solvents (<0,1%)	MSDS, TDS, manufacturer's declaration, EMICODE	Impregnations without aromatics are available for nearly all natural stones. Exceptions must be justified by the natural stone installer.	Visual check of packaging (construction site) and technical data sheet (proof of being "AF" or "aromatics-free").	

Building materials for internal fit-out	Relevant product ingredient(s)	Reference standard	Enhanced environmental & health requirements	Suitable proof	Explanation	Quality assurance by construction supervisor
Wallpaper glue	VOC / solvents & SVOC / plasticisers	VOC and SVOC (purs. to definition of EU 2015/886)	Powdered glue or Emission, solvent and plasticiser-free (= VOCs & SVOCs < 1g/l)	MSDS, TDS	Powdered materials are mixed with water. Ready-to-use materials are identifiable as free of solvents and plasticisers.	Visual check of packaging (construction site) and technical data sheet (proof of being "powder" or "free of solvents and plasticisers").
PU or epoxy floor coatings (e.g. circulation areas in offices)	VOCs / solvents	VOC definition as per Directive 2004/42/EC	High-solid, low-VOC <100g/l	MSDS, TDS, manufacturer's declaration	Dispersion-based PU and epoxy coatings are available for areas without special durability requirements.	Visual check of packaging (construction site) and technical data sheet (identified as "dispersion" or water-based plus VOCs <100 g/l)
Wood and parquet seal, wood oil	VOCs / solvents	VOC definition as per Directive 2004/42/EC	<10% solvents	MSDS, TDS, manufacturer's declaration	Proof by way of manufacturer's declaration/technical data sheet on solvent content of the ready mix (1 and 2-component systems) product.	Visual check of packaging (construction site) and technical data sheet (identified as "dispersion" or water-based plus VOCs <100 g/l).
Carpet/carpet tiles	Hazardous substances, emissions	GUT or CRI-Plus criteria	GUT or CRI-Plus standard or equivalent	GUT seal or equivalent	Most European manufacturers use one of these standards or an equivalent. See technical data sheet.	Visual check of packaging (construction site) and technical data sheet (proof of standard or equivalent).
Smooth floorings in rubber, linoleum or plastic	Hazardous substances, emissions	GUT or CRI-Plus criteria	GUT or CRI-Plus standard or equivalent	Test cert. & manufacturer's declaration	The FloorScore label proves the required moderate emission level of the floorings. Substances of very high concern (SVHCs) must be declared as such by the manufacturer.	Visual check of packaging (construction site) and technical data sheet (proof of floorScore standard and SVHC confirmation by manufacturer's declaration if necessary).
Installation materials for floorings, tiles and parquet; repair resin and sealing coats	Emissions	EMICODE	EC1 (-R) / EC1+ (-R)	EMICODE	All manufacturers offer materials with corresponding certification for installation of all floorings.	Check technical data sheet - does it show the EMICODE EC1/EC1+ seal?

Building materials for interior	Relevant content(s)	Reference standard	DIN-Plus-requirement	Suitable proof	Explanation	Quality assurance by the building management
Installation materials for floorings, tiles & parquet; repair resin, sealing coats	Emissions	EMICODE	EC1 (-R) / EC1+ (-R)	EMICODE	All manufacturers offer materials with corresponding certification for installation of all floorings.	Check technical data sheet - does it show the EMICODE EC1/EC1+ seal?
Mounting foam for doors etc. and other applications	Hazardous substances, emissions	EMICODE, SVHCs	EC1 / EC1+ & SVHCs <0.1%	EMICODE certificate, MSDS (SVHC < 0.1%)	Many manufacturers offer mounting foams that are free of SVHCs (<0.1%) and have an EMICODE certificate. The EMICODE logo normally appears in the technical data sheet.	Visual check of packaging (construction site) and technical data sheet (proof of EMICODE EC1 / EC1+ and SVHC < 0.1%)
Doors, window sills, acoustic elements, partition walls	Solvents	VOC definition as per Directive 2004/42/EC	Either plastic surfaces (e.g. HPL) or UV paints (at factory)	TDS, manufacturer's declaration	These materials are produced on production lines; proof is provided by way of manufacturer declarations and/or the technical data sheet.	Visual check of technical data sheet or manufacturer's declaration (proof of use of HPL or UV varnish at factory).
Rubber insulation (e.g. cooling), insulation roll (e.g. ventilation) & pipe shell (e.g. heating)	Avoid solvent-based adhesives	VOC definition as per EU 2015/886	At least 90% of insulation with self-adhesive insulating material or fixed with pins (e.g. insulation roll)	Technical constr. manager's declaration	Self-adhesive insulation is identifiable on site by a visual check.	Visual check of insulation (construction site) and technical data sheet (proof of being "self-adhesive" + delivery notes of insulators (= proof that 90% of insulation material is self-adhesive or seamless)).

ECOLOGICAL CLEANING AGENTS

Cleaning agent	Relevant product ingredient(s)	Reference standard	Enhanced environmental & health requirements	Suitable proof	Explanation	Recommendations for quality assurance
Basic cleaning, post-construction and maintenance cleaning	Hazardous substances, solvents	EU Ecolabel criteria	EU Ecolabel or equivalent	TDS, MSDS	The EU Ecolabel for cleaning products is widely used.	EU Ecolabel (EU Flower) appears in data sheet and/or on packaging: visual check. Ensure that dosing aid provided is used.

Table 6. Ecological products for building and cleaning measures

Source: Compiled by Union Investment Real Estate GmbH



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