



## Geo

### Kortfakta

**Adress:** Svante Arrhenius väg 6A, 6B, 6C, 8, 12, 14

**Anläggningsnummer:** A0133025

**Byggår:** 1997

**Arkitekt:** Nyréns arkitektkontor AB

## General

### Address and telephone

Postal address: Stockholm University, 106 91 Stockholm

Telephone switchboard: 08-16 20 00

Website: [www.su.se](http://www.su.se)

Main entrance: Svante Arrhenius väg 8 B

Side entrances: Svante Arrhenius väg 8 A, C and 10 A-C

Central goods reception: Frescativägen 8

Joint recycling stations: Building T floor 1 and in the KÖL building

Gas supplies: Building R floor 1 and in the KÖL building

### Facility management

The Geosciences Building is owned and managed by Akademiska Hus with Stockholm University as the tenant.

The responsible facility manager and the onsite maintenance engineer are announced on notice boards at the entrances.



If you have any questions you are always very welcome to contact Akademiska Hus by telephone 08-685 75 00.

We hope that this user guide will help you to find relevant information and feel at home on your premises.

## Reporting faults

You can report faults regarding facility matters around the clock, at first hand at [www.akademiskahus.se](http://www.akademiskahus.se) where you follow the link "[Felanmälan](#)".

In addition urgent faults can be reported around the clock by telephone 020-55 20 00.

Faults related to department activities are handled by Stockholm University and the technical unit. Faults concerning locks, alarms and security matters are to be reported to the Key Office by telephone 08-16 25 20.

Other issues are handled by Stockholm University's customer service at telephone 08-16 24 00.

Please state the room number when reporting faults, this is found on a plate on the doorframe.

## Parking

Visitors and personnel are very welcome to use the metered parking areas, please refer to the campus map of [Frescati](#). At larger parking areas it is possible to pay in arrears.

Parking spaces for vehicles with a valid disabled permit are available at the northern entrances between building blocks T and X.

There are bicycle stands at the entrances of building blocks Y, U and S and moreover along the building.

## Working environment

In order to create and maintain a good working environment with high safety standards, it is necessary to apply and respect certain rules. For example, you are not allowed to:

- smoke indoors or within a 15 m radius outside entrances
- bring pets
- park bicycles indoors



- make holes in walls, floor or ceiling in order to fix furniture or equipment
- place furniture, freezers etc in operational- or public areas
- block doors to operational areas or evacuation routes
- ❓❓❓ modify or alter the installations of the building without prior approval of Akademiska Hus or Stockholm University
- transport, relocate or place heavy equipment without prior approval of Akademiska Hus

All delivery of goods are to be made via the transportation lifts in building T and X.

Make sure that doors and airing windows are closed and locked at the end of each working day.

## **Placarding**

Our ambition is a campus area as clean as possible, why we ask you to respect the fact that public announcements and advertising is only allowed at specific locations. Be aware of the fact that those responsible for posters will be held responsible for the clean up cost.

## **Information for the disabled**

### **Car parking**

Parking space for vehicles with a valid disabled permit is located at the northern entrances between buildings T and X.

Please refer to the campus map in the menu bar down to the right.

### **Entrances and lifts**

The main entrances are designed to comply with the accessibility standards and all floors can be reached by wheelchair.

### **Toilets**

Toilets adapted for the disabled are available in the building and these are equipped with a local safety alarm.

### **Auditoriums and lecture halls**



Auditoriums are fitted with assistive listening devices and, moreover, both auditoriums and lecture halls offer space for wheelchair users.

## The Building

### General

The Geosciences Building comprises five blocks denoted building R, T, U, X and Y which are connected via building S and V. Rental space is approximately 19 000 square metres.

Auditoriums are located in building block U and Y and the library in building block U floor 2.

Floor 0 consists of operational areas and on floor 1 there is a tunnel for goods transport that links the Geosciences Building with other buildings on the campus. Furthermore, the building houses lecture halls, laboratories, offices and a canteen.

### Locking

The main entrance of the Geosciences Building is open during the day. Access during night hours, weekends and holidays requires a valid pass card and associated code.

Pass cards and keys are managed by the Key Office at Stockholm University.

A loss of a pass cards or keys must be reported immediately.

### Bear security in mind!

Try to determine whether an unknown visitor has a legitimate errand in the building.

### Lifts

The Geosciences Building has two transport lifts -in block T and X, respectively- and three passenger lifts, one in each of block R, U and Y.

The transport lifts, referred to as 93 and 96, operates between floors 0-5 and have a loading capacity of 1600 kg, equivalent to 10 passengers. The clearance of each lift's door opening is W1400xH2000 mm and the cage size is W1580xD2170 mm.

The passenger lifts, referred to as 94, 95 and 97, have a loading capacity of 800 kg or 10 passengers and a cage size of W1320xD1370 mm.



Lift 94 operates between floor 1-5 and its door opening is W800xH2000 mm.

Lift 95 operates between floor 1-3 and lift 97 between floor 0-2; both have a door opening of W900xH2000 mm.

Please refer to the section "Alarms" for further information about the emergency alarm in the lifts.

## Framework

Pre-cast concrete elements constitute the framework of the building and the maximum load capacity is 4 KN/sqm with an evenly distributed load.

## Room numbers

In order to facilitate orientation in the building, all rooms are numbered according to the following principle:

**R**211b the first letter refers to the building block

**R2**11b the first figure refers to the floor

**R211**b the second and third figures refer to the room location on the floor.

**R211b** a letter after the room number means that the room is shared

### Bear in mind that:

The same room numbers are used in all building blocks. The first letter must therefore be used in order to locate the room in each block.



## Fire safety and Security

### Automatic fire alarm

Most parts of the building are fitted with smoke detectors that in the event of fire smoke automatically set off the emergency evacuation alarm and sirens will sound in the current building. The fire alarm is **immediately** forwarded to the rescue services.



You can trigger the alarm manually by pressing the push-buttons found along the evacuation routes on each floor.

A fire that can not be extinguished with the fire appliances available must be alerted via **telephone 112**.

Limit the seat of fire by closing windows and doors.

**The lifts must not be used in case of fire.**



## Evacuation

Naturally, not one fire is like another and actions must be taken with respect to the current circumstances. Nevertheless, learn the basic rule:

### RESCUE - WARN - CALL 112 - EXTINGUISH

- Save yourself and other persons in your vicinity, but do not expose yourself to danger.
- Warn others who may be in danger.
- Alert the rescue services by calling **112**.
- Extinguish the fire if possible.

From each workstation, you can reach at least two staircases that form evacuation routes independent of one another, these must not be obstructed. The evacuation routes are indicated by green, luminous evacuation signs that are always lit and have battery back-up in order to remain lit in the event of a power cut.

## Egen rubrik

Doors with green emergency knobs or sealed handles **may only** be used for emergency evacuation.

Evacuation plans are posted on each floor and point out the routes for evacuation, mustering points and stations with fire extinguish appliances.

**The mustering point is the grass lawn south of the house of Geosciences.**



If the fire alarm is set off all personnel is to leave the building, close all doors behind them and gather at the mustering point. Personnel must report to the evacuation co-ordinator and give their name and research group affiliation, or equivalent. You must not deviate from the mustering point before you have fulfilled this obligation.



### Fire compartments

The Geosciences Building is divided into a number of fire compartments in order to prevent fire and smoke to spread. In general each building, stairwell, floor, corridor, operational area, ventilation- and elevator shaft forms an isolated fire compartment.

Each fire compartment is enclosed by fire rated walls and doors. The doors on the perimeters of fire compartments are fitted with automatic door closers and **must under no circumstances** be wedged open or similar. When the fire alarm is triggered the doors are designed to automatically close and can also be closed manually by pressing push buttons marked "dörrstängning".



### Sprinkler

Building block U is fitted with an automatic water sprinkler system.

A triggered sprinkler alarm sets off the evacuation alarm which will sound throughout the building and the alarm **is forwarded to the rescue services**.

A sprinkler head consists of a glass bulb that bursts at 68°C or by inflicted damage and thus discharge water.



## Fire extinguish appliances and first aid

Fixed fire hydrants are strategically located in the building. At the rescue stations the following are found:

- emergency shower and eye rinse
- first-aid kit
- fire extinguisher
- fire blanket
- evacuation plan

## Eye rinses

Since bacteria, Pseudomonas och Legionella among others, easily grow in standing hot water, a fixed device for eye rinsing should be flushed at the beginning of each working day. This is according to the current work environment authority's statute book (AFS).

## Alarms

### General

In order to monitor the various technical features of the building there are a number of different operational alarms.

We distinguish between local alarms and those that are remote-connected to Akademiska Hus or Stockholm University.

Local alarms are handled and restored by the user.

### Safety alarm resting rooms and toilets

Resting rooms and toilets adapted for the disabled are equipped with local safety alarms with red push buttons labelled "nödsignal".

A triggered alarm is indicated by sound and a red flashing light outside the current room. **It is of great importance** that you, who hear or see this alarm, make contact with the person in distress.

The alarm is handled and restored by the user.



## **Safety alarm freezer rooms**

The safety alarm from freezer rooms is forwarded to the security unit at Stockholm University.

## **Lift emergency alarm**

If the lift stops between floors, the emergency button is to be pushed and held for at least 45 seconds.

An alarm signal will sound outside the current lift and the emergency alarm is forwarded around the clock to stand by personnel at Akademiska Hus.

Duty staff turns out in order to rescue those in distress.

## **Surveillance and burglar alarm**

The burglar alarm is managed by the tenant. The alarm is remote connected to the security unit at Stockholm University which, through a security company, turns out immediately.

Surveillance and systematic inspections of the premises are carried out by the security company.

Certain windows can be opened for airing. Bear security in mind and remember to **close these** at the end of the working day.

## **Refrigerator-, freezer- and climate alarms**

In case of room temperature deviating from the pre-set value a local alarm is triggered and a red light is lit in the corridor.

Alarms can be forwarded to the security unit at Stockholm University according to special arrangements.

## **Alarms from freeze- and low temperature boxes**

If installation of a remote connected alarm for low temperature boxes is desired you are very welcome to contact the security unit at Stockholm University, the user meets the cost for the installation.

## **Alarm ventilated work stations**



Please refer to the section "Safety ventilation" for further information.

## **Fire alarm**

Please refer to the section "Fire and evacuation" for further information.

## **Lighting and Electricity**

### **Lighting**

In public areas like corridors and staircases the lighting is time-controlled. In addition to the pre-set period of time the lighting is manually switched on by push buttons.

Lighting in meeting- and seminar rooms and, moreover, lecture halls can be altered.

Switch the lighting on by pressing the push button once and off by pressing it twice, press and hold the push button in order to fine-tune the lighting

The lighting in auditoriums is altered by means of a control panel.

In laboratories lighting is manually switched on and off via push buttons inside the door.

Lighting in the offices is controlled by means of presence detectors.

Individual lighting fittings can be turned off by using the pull cord switch. **Remember** that if lighting is desired then you must pull the cord switch a second time in order to turn it on.

A number of lights on each floor in stairwells and corridors always remain lit, referred to as guidance lighting.

Emergency lighting is switched on if the general lighting is cut off due to power failure.

### **Lighting outlets**

In offices the outlets for connecting suspended lighting fittings is mounted on the suspended ceiling. Bear in mind that only lighting fittings may be connected to these outlets, not any other type of equipment, since the outlets are powerless when the lighting is switched off.



## Power

On each floor there are locked electrical niches with distribution boards that provides the floor with electric power.

Keys to the distribution boards can be obtained from Akademiska Hus.

In the event of a short circuit you can manually restore the power by resetting the circuit breaker to the upright position. If the power failure recurs Akademiska Hus must be contacted, the root cause investigated and resolved.

Electrical equipment that requires more than 16 A is connected directly to the distribution board.

**Bear in mind** that in case of power failure or fan malfunction in the fume hoods these must be closed and the building evacuated.

If there is a need, a completely uninterruptible power supply (UPS) can be installed. The user meets the cost for UPS installation.

## Electrical- and magnetic fields

In order to minimise electrical and magnetic fields, the electrical installation has separated neutral and protective ground conductors, i.e. a TN-S system, which is also referred to as a five-conductor system.

The user's equipment must be designed to suit a five-conductor system in order to avoid interference with other electrical installations, i.e. the neutral and ground conductors must not be associated in the user's equipment. When equipment is purchased and installed the design must suit the five-conductor system.

All wires and cables should be of the shielded type.

## Equal potential system



The potential equalisation system is designed to equalise differences in potential energy between metallic objects in the building. All major metallic components have been connected to the system, e.g. cable trays, cable channels and metal ducts. EPS bus bars are installed in the electrical rooms and other areas.

## Room climate

### General

In order to maintain a good air quality, the air flow in the rooms is adjusted to the number of people and type of equipment the rooms are designed for. A very high outdoor temperature and air humidity during summer or a very low outdoor temperature during winter might lead to deviations in the indoor climate.

### Offices

The air flow in the offices is controlled by means of presence and temperature sensors. This means that the air turnover rate is automatically adjusted to the number of people present and current temperature, in addition to the continuous default air flow, and generating energy savings.

The default temperature in offices can be altered approximately  $\pm 2$  °C by manually adjusting a regulator by the door. The supply air lowers the room temperature and the radiators increase the room temperature.

Only the + and - keys are to be used. Other buttons have no function.

+ increases the temperature and - lowers the temperature. The newly set room temperature is displayed for a few seconds and thereafter the current room temperature is displayed. Lit **red** led indicates heating and lit **green** led indicates cooling. The led is unlit when the set temperature is reached.



## Laboratories

The ventilation in laboratories is adjusted to the current circumstances. In addition to a continuous air flow the air turnover rate is altered when hatches are opened during work at ventilated workplaces and generating energy savings. Please refer to the section "Safety ventilation" for further information.

In laboratories heating is achieved by radiators and the temperature is set by means of a valve.

**Bear in mind** that the impact of a manual adjustment of temperature may be delayed due to the thermal inertia of the building. The building framework stores heat and cold and counteracts swift changes.



## Sunshades

In order to maintain a suitable room climate and, moreover, to prevent glares the building is equipped with retractable awnings. These are automatically extended in case of sunshine provided that the wind force does not exceed a certain limit.

## Airing

Certain windows can be opened for airing. When opening a window **bear in mind** that a high outdoor temperature will increase the indoor temperature which in turn might lead to imbalance in the climate system.



## Laboratory with gowning room

In rooms with specific requirements on ventilation there are often gowning rooms in order to maintain a differentiated pressure to adjacent rooms/corridors.

It is important to **keep the doors to these rooms closed** since the ventilation control remains in current mode until the doors are closed.

## Safety ventilation

### General

Work with dangerous and/or volatile chemicals should always be done at the ventilated workplaces. There are safety-ventilated units in form of fume cabinets, downdraught benches and ventilated cabinets, sinks and slot ventilation. The chemicals should be stored in ventilated cabinets.

For the ventilation to provide the desired effect, it is important to follow the instructions at each workplace. In order to provide the maximum safety effect, windows in the vicinity of the workplace must be kept closed since draught will disrupt the air flow.

### Fume cabinets

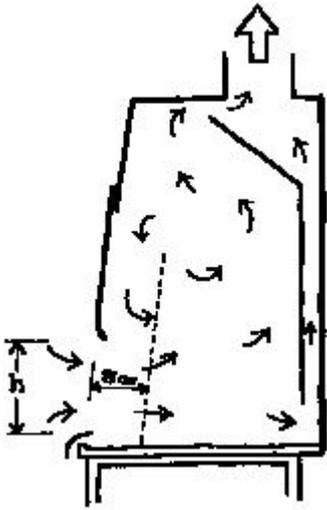
Fume cabinets always have a default air flow, even when the hatch is in its lowest position. The air flow always generates 0,5 m/s in the shutter opening, which prevents leakage. 0,5 m/s is maintained up to the marker for maximum hatch opening.

#### **Bear in mind!**

☐☐☐ The fume cabinet hatches are to be shut to the lowest mark when there is no activity in the cabinet. This will affect the room's general ventilation and the energy consumption.

☐☐☐ If the air flow in the shutter opening drops below the safety limit of 0.5 m/s the cabinet sets off an **alarm signal locally**.

☐☐☐ A triggered alarm will cut the power outlets on the front of the fume cabinet, referred to as electrical interlocking. The electrical interlocking is restored manually by means of a push button on the fume cabinet.

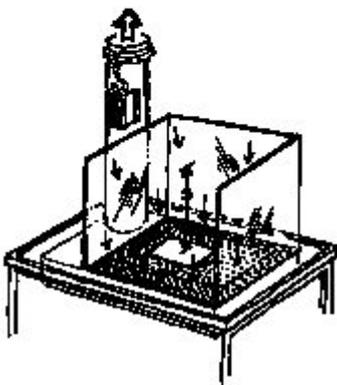


### **Downdraught benches**

Downdraught benches have a continuous exhaust air flow. By means of a switch above the door the flow can be rushed.

The air flow in the downdraught bench is then increased until the switch is set to off.

Downdraught benches are only appropriate for cold (isotherm) activities. In order to provide a satisfactory safety function, a maximum of 1/3 of the perforated surface may be covered and work must not be done higher up than 150-200mm.



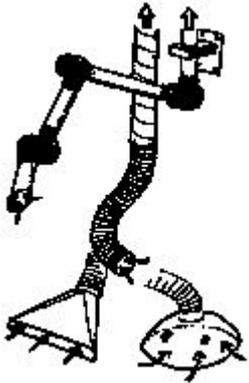
### **Slot ventilation**

Slot ventilation devices have a lower continuous default air flow. In order to provide a satisfactory



safety function, the exhaust opening and the source of contamination must not be further apart than 1,5 times the diameter of the opening.

For some slot ventilation devices the default flow can be rushed via a switch above the door.



### Ventilated cabinets

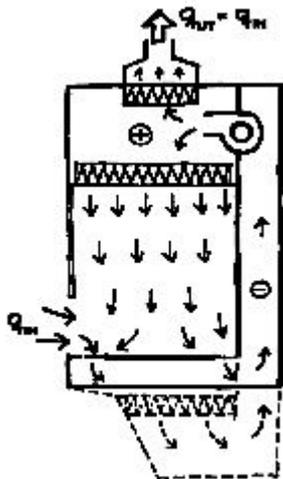
Ventilated cabinets are connected to the ducting system with a continuous air flow.

### Laminair Air Flow (LAF) benches

There are three different types of LAF benches:

One type is categorized as safety class II and is connected to the exhaust air duct via a draught baffle. Another type is fitted with HEPA filtered recirculation to the room and the third type has a horizontal flow and provides only product protection.

In the Geosciences Building there are special downdraught benches for "clean air" over the work area. Please refer to local instructions.





## **Wet/dry services and waste water**

### **Deionised water**

There is de-ionised water in the building which is distributed from the Arrhenius laboratory.

### **Cooling water**

There are a number of cooling water systems with various temperature for cooling equipment, chillers and rooms.

### **Gas and compressed air**

Gases are distributed from a joint and a local gas supply.

There is a compressed air system in the building which is distributed from KÖL.

## **Refuse collection**

### **General**

Office paper, newspapers and magazines are collected in waste paper bins at each working place. Each one empties their own waste paper bin at the recycling station on floor 1 in building T.

### **Conventional refuse**

Conventional refuse is stored at the recycling station and are sorted into the following fractions:

- Coloured and plain glass
- Hard plastic
- Metal
- Batteries in a battery box
- Soft plastic
- Plastic foam
- Cardboard and corrugated cardboard is dealt with in a cardboard compressor
- Domestic waste
- Fluorescent tubes, mercury lamps and light bulbs plus other electrical/electronic equipment



- Ink cassettes

## **Other refuse**

Refuse below are to be carefully tagged according to the procedures stated at [www.su.se](http://www.su.se) where information about collection hours can be found as well.

Chemical waste is stored in the room for dangerous waste at "Kemiska övningslaboratoriet" (KÖL), building 133:26, pending further transportation.

Radiological waste is stored in the Arrhenius laboratory building A2 while awaiting further transportation.

Hazardous waste, e.g. laboratory glass, is stored at "Kemiska övningslaboratoriet" (KÖL), building M2, pending further transportation.

## **History**

### **Frescati**

Frescati real estate area is located within the National City Park in Stockholm, north of Roslagstull between Brunnsviken and Stora skuggan. The name Frescati originates from the name of the Italian city Frascati.

Earlier the area was used as royal hunting grounds before experimental plantations, an agricultural museum and a veterinary Institute eventually were established. These can be considered as a prelude to a gradual development of education and research in the social sciences, natural sciences, humanities and law, which since 1960 are conducted at Stockholm University.

Activities are concentrated in the campus in Frescati. Moreover, the ambition to gather the subjects of Geosciences in Frescati has existed since the first institutions of the University moved from the inner city.

A fundamental objective of the Stockholm University is a close connection between research and education. On behalf of the geosciences the close relation to the sciences they are cooperating with in research and training will be of great value. Especially today's environmental problems require an interdisciplinary approach.



## **The Geosciences Building**

The Geosciences Building (Geo) was erected in 1996-97 and designed by Nyréns architect office AB with Snorre Lindquist as head architect. The building was awarded with the concrete element association's architecture prize in 1998.

The building consists of five linked building blocks and comprises five floors above ground, one level partially underground and one basement level. The building houses lecture halls, laboratories, offices, canteen, libraries and auditoriums.

Today the Geosciences Building houses the department of geology and geochemistry, department of physical geography and quaternary geology, department of human geography, library of Geo and the department of applied environmental sciences (ITM).

## **Art**

### **The artists**

Three artists, each representing very different artistic expressions, interact in the larger structure formed by the architectural landscape. It involves the search for an approach to the room's centre of gravity, proportion and periphery.

Annika Svenbro with her intimate sculptural language of design was to deal with the outdoor environment. She has selected two locations: a water fountain resembling a flower between two educational pavilions, and outside the main entrance a group of three sculptures.

Anders Kappel is a firmly committed artist concerning scientific matters. His six large painted and sculptured copper plates in the research entrance add weight and musicality to the research environment.

Paul Osipow is a painter of the purest water. He expresses himself in an abstract language of design with large areas in which he stretches the colour to the extreme. The room becomes dynamic. His wall painting at two floors in the large lecture pavilion and the library comprises not less than 260 sqm.

The arts program is supplemented with specially selected collages and drawings in the break



rooms.

/ Extract from the National Public Art Council publication from 1997 - A building that houses our Earth, Päivi Ernkvist, Project Manager National Public Art Council.

### **"You are not alone"**

The walking woman, slightly bent forward as if she was laden with an invisible burden, is placed in connection with the footpath from the Arrhenius Laboratory. In the flow of passersby she could be perceived as a stranger as well as any one. The resting introvert shape, which is facing the woman, combines features of foetus, animal and human. In contrast to the curvature of these organic shapes and the deep coloured surfaces of bronze stand the right angles of the shiny plates and their ability to reflect light.

Annika Svenbro has managed to create a place of intimacy and serenity, as she puts it in the sketch description. The title "You are not alone" is taken from Carl Jonas Love Almqvist poem "Songes".

/ Extract from the National Public Art Council publication from 1997, Jelena Zetterström

### **Egen rubrik**

Anders Kappel has returned to the relationship between nature and science many times, and in his work a fascination for the human desire to be nature's superior is not rarely expressed. Therefore it is hardly surprising that he in the sketch description of the work of art "Edges of Despair", designed especially for the areas shared by the subjects of Geosciences, is talking about the desire to exploit: about test drilling and exploitation of natural resources, about measuring, to classify and to systematize, about the strive to master but also about the desire of science to puncture our beliefs and understand the world around us, the earth's creation, as well as the mystery of the universe.

Some of this, Anders Kappel has made an effort to portray artistically in the work at Frescati for which he has been inspired among other things by the work of geologists, quaternary geologists, human- and environmental scientists, as well as by his personal interest in technology and science.

/ Extract from the National Public Art Council publication from 1997, Jelena Zetterström



## **"Ana, Kata, Periferi"**

The Greek word for "up", "down" and "periphery" has given the name to Paul Osipows large, painted relief, which forms the centre of the artistic expression of the Geosciences Building. Even here, in the title, there is an obvious rhythm, a rhythm recurring in the artwork itself that sets the room - or rather the rooms - in motion.

His work, described as a mixture of random and aesthetics by himself, extends over two floors and includes five wall sections corresponding to an area of 260 square meters.

In his sketch description the artist explains that his starting point has been the length and shape of the walls, and from the fact that these - and consequently also his pictures - never can be seen in its entirety. Hence the colour scale is limited: red, yellow, green, blue, black and white shapes on a red, blue, yellow and black, above the entrance, white background, which usually is formed by the wall itself.

/ Extract from the National Public Art Council publication from 1997, Jelena Zetterström