DECIVIL
DEPARTAMENTO DE ENGENHARIA
CIVIL, ARQUITETURA E GEORRECURSOS
TÉCNICO LISBOA

LABORATORY USER MANUAL

Department of Civil Engineering, Architecture and Georesources

Index

1. Introduction

The Department of Civil Engineering, Architecture and Georesources (DECivil) includes several laboratory facilities to support the activities developed on the Alameda campus of Instituto Superior Técnico.

On floor 02 of the so-called Civil Building one can find:

- Laboratory of Structures and Strength of Materials (LERM)
- Laboratory of Construction (LC)
- Laboratory of Hydraulics, Environment and Hydric Resources (LHARH)
- Laboratory of Transport Infrastructures (LVCT)
- Laboratory of Geotechnics (LG)

On the floor 01 there is another laboratory as well as support rooms for the laboratories listed above:

- Room 01.09 to support LERM
- Room 01.10 to support LVCT
- Room 01.12 is the Laboratory of Environment, associated to LHARH
- Room 01.19 to support LC
- Room 01.34 where the Laboratory of Architecture is located (ISTAR)

Also in the Civil Building, on the floor 03, there are two spaces associated with laboratories, namely:

- LHARH pump room
- LERM room where the concrete mixing plant is located

There are also three laboratories under the DECivil management located in the Mining building, which are not included in the scope of this manual:

- Laboratory of Raw Materials Processing José Quintino Rogado
- Laboratory of Geomechanics
- Laboratory of Mineralogy and Petrology

More information about the Department's laboratories can be obtained by following the link:

https://fenix.tecnico.ulisboa.pt/departamentos/decivil/unidades-de-apoio

2. Framework

This document aims to describe the general operating conditions of DECivil's experimental laboratories (and their associated spaces) located on floors 01, 02 and 03 of the Civil building. The locations of these laboratories and spaces are shown in Figures 1 to Figure 3.

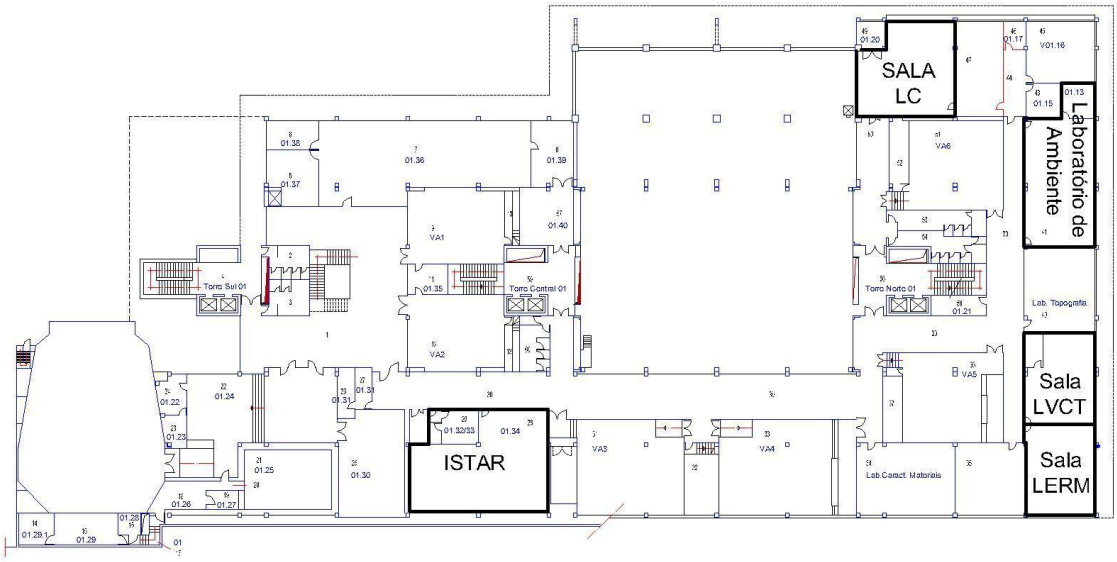


Figure 1 - Floor 01 blueprint of the Civil Building

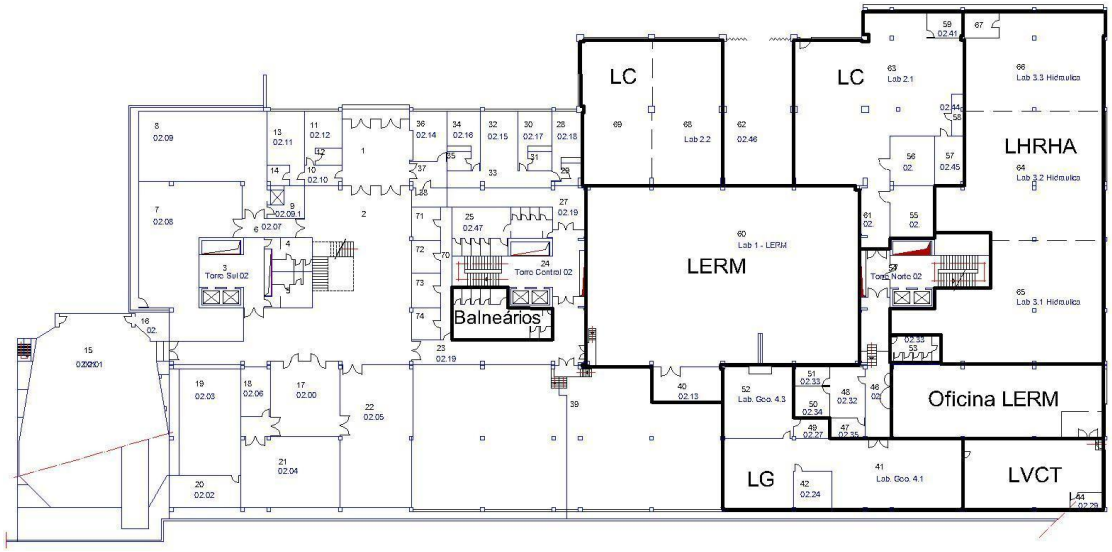


Figura 2 - Floor 02 blueprint of the Civil Building

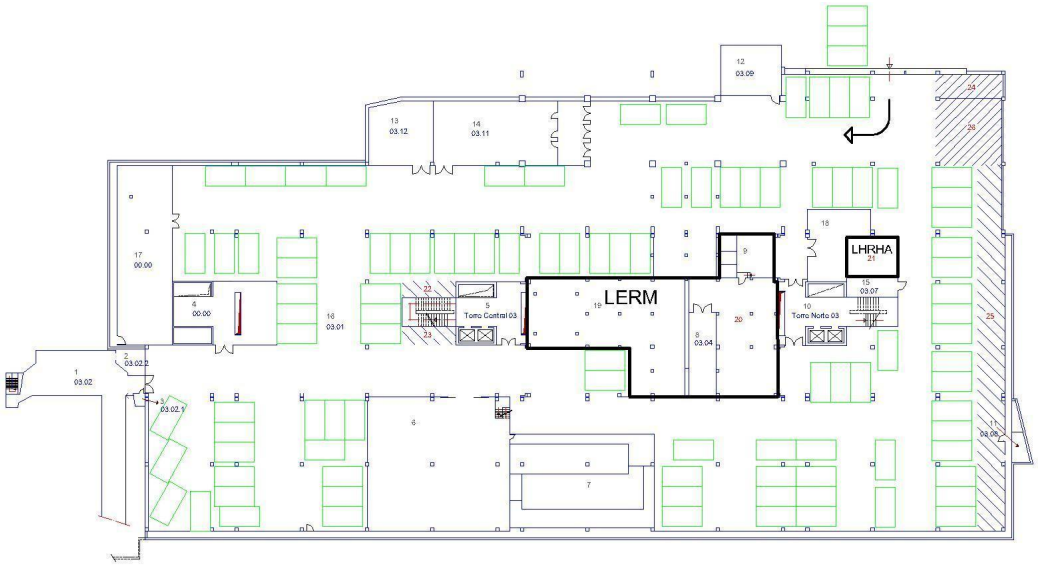


Figura 3 - Floor 03 blueprint of the Civil Building

On the floor 02 there is a mixed-use bathroom, with a space for changing clothes, a changing room for the exclusive use of laboratory technicians and, inside the LERM workshop, there is also a small closed room to support meals for technicians.

The experimental activities carried out in the DECivil laboratories have several scopes and, consequently, require several precautions that should be taken into account with this manual. These activities include:

- Classes of the 1st, 2nd and 3rd cycles supported by DECivil
- Master's dissertations (2nd cycle)
- Doctoral theses
- Postdoctoral projects
- Research projects
- Services provision

3. Organizational structure

The Director General of the Laboratories belongs to the DECivil Executive Commission. Each laboratory has a responsible professor, designated as Laboratory Director. Currently, the laboratories have a total of five technicians distributed as follows:

- Two technicians at LERM
- One technician at LVCT
- A technician split between the LHARH in the morning and the LC in the afternoon
- Two technicians in the LC, one of whom is allocated by LG

The general organizational structure can be consulted in Figure 4 and the detailed organizational structure can be consulted in Figure 5.

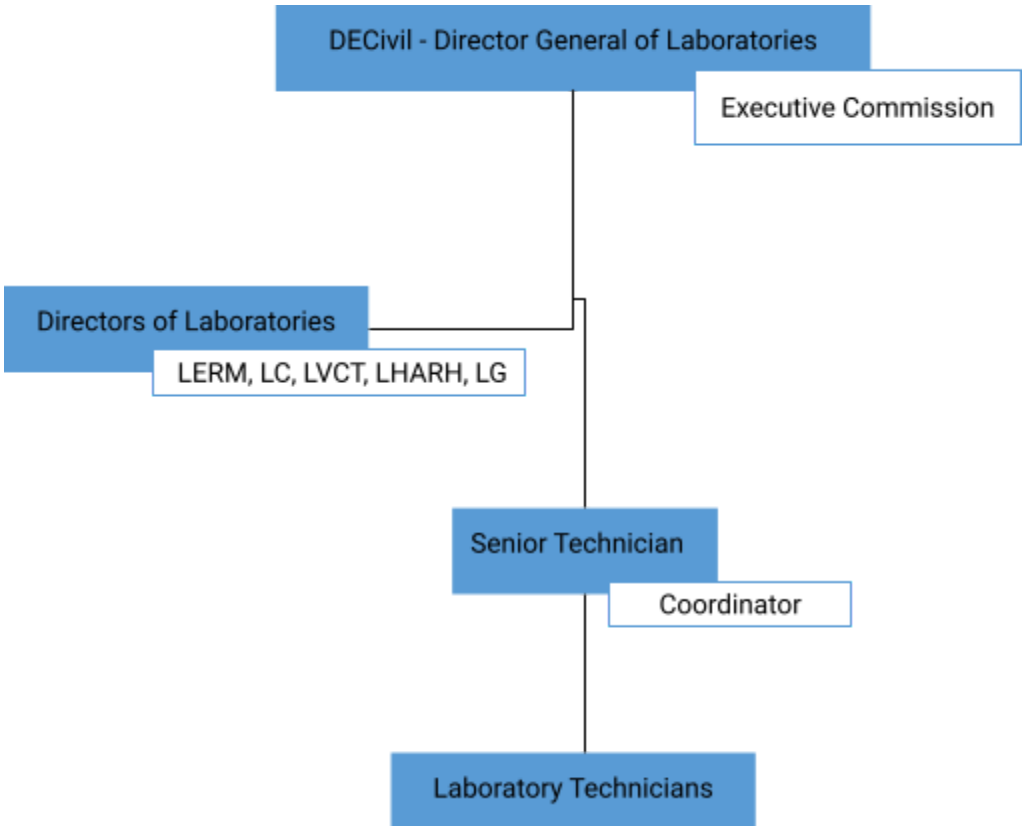


Figure 4 - General organizational structure

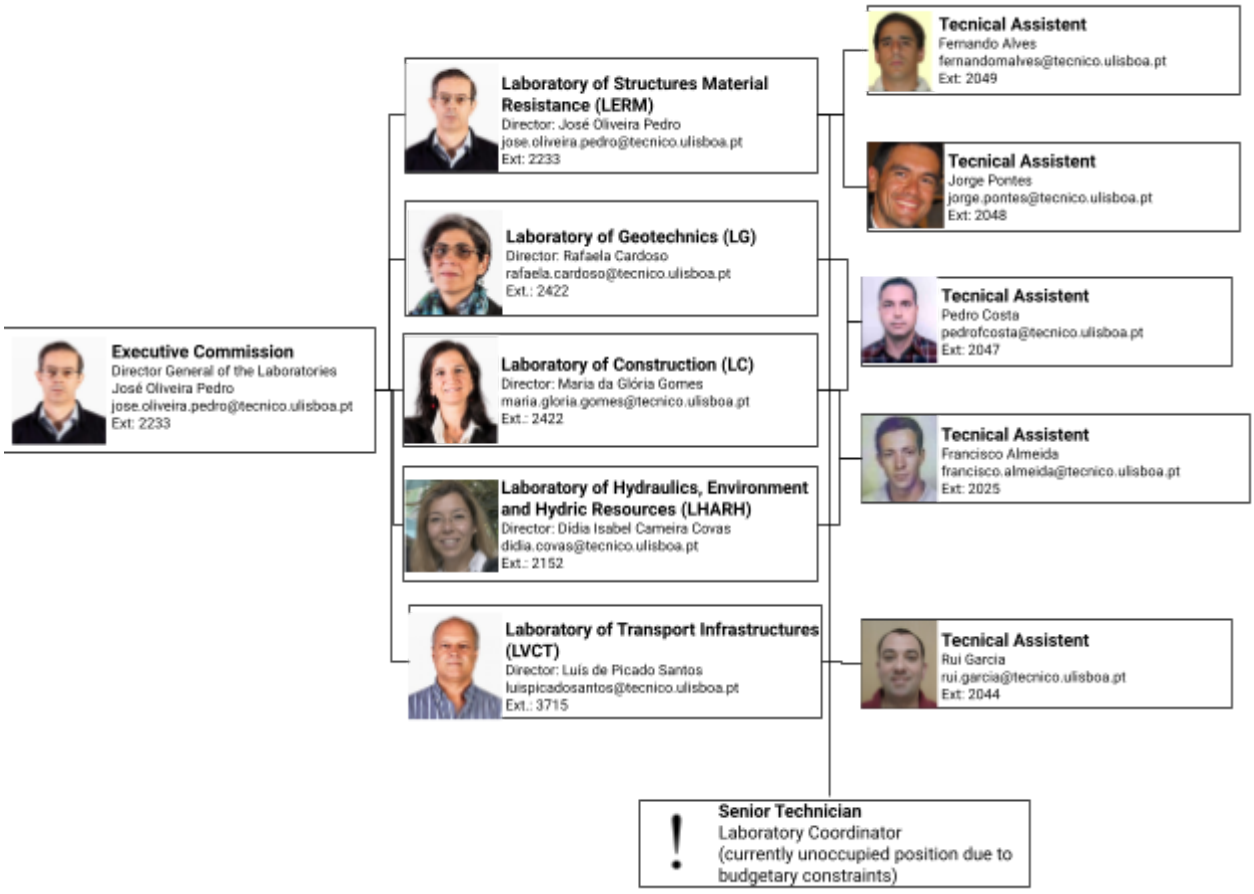


Figure 5 - Organizational structure of laboratories

4. Functions

The Directors of the Laboratories, who must be professors of DECivil, are elected for a period of two years, coinciding with the mandate of the Department's Presidency.

The Laboratories Coordinator reports directly to the Executive Commission and supports the general coordination of the laboratories in terms of personnel management, cleaning conditions, safety, waste management and access control. He collaborates actively with the various Directors of the Laboratories in responding to the specific needs of research and teaching, as well as in the supervision of equipment and in the management and allocation of laboratory technical personnel. It also develops tests, supports work and coordinates/performs maintenance activities, including the repair of laboratory equipment.

The technicians of each laboratory, although hierarchically dependent on the respective Laboratory Directors, are under the functional dependence of the Coordinator, to whom they report the activities. Their functions are to develop support work for laboratory classes, research and service provision, as well as to control the correct use of the various spaces and equipment assigned to their laboratory.

All DECivil professors are considered users of the laboratories and, as long as they are duly registered as such, the masters or doctoral students supervised by them, other elements that they can collaborate in the scope of teaching, research and service provision activities, and researchers from DECivil's research units. The registration of each user is made with the Director of the respective laboratory. Exceptionally, the admission of other users, namely master's or doctoral students, scholarship holders, professors and researchers from other departments of IST or from external entities, may also be considered by each Director.

It is the responsibility of each user to ensure that he has personal accident insurance in order to attend the laboratory facilities. It is also the responsibility of each user to use the appropriate safety and protection equipment for the work that is carried out and in accordance with the specific rules of each laboratory. ADIST or IST-ID employees are covered by their work insurance, IST employees are insured by the institution itself and IST students are covered by school insurance.

5. Opening hours

Two distinct periods of operation of the laboratories are defined, namely:

- Normal Hours of Operation (NHO): working days from 9:00 am to 5:00 pm
- Extended Hours of Operation (EHO): working days from 5:00 pm to 9:00 am, Saturdays, Sundays, holidays and IST official closing days

The NHO is defined, albeit with some flexibility, by the working hours of the employees of the laboratories, a period in which their presence is expected. The reference period for lunch is from 12:30 to 13:30 and can be adjusted in more or less thirty minutes in order to satisfy the needs of each laboratory. Jobs that require the support of technicians must be organized in such a way that they do not coincide with their lunch period and do not compromise that time. It may be the case that there are laboratory classes coinciding with this period, therefore, there is a specific need to adjust the lunch periods of the technicians.

6. Accesses and permanence in laboratories

All access from outside the laboratories on the floor 02 is blocked and reopened, every working day, by the guard on duty in the building, at 8:00 pm and 8:00 am, respectively. In the remaining periods, namely on saturdays, sundays, holidays and IST's official closing days, these accesses will remain blocked.

The access control to the laboratories is done through the glass door on the 2nd floor, from the north staircase and elevators nucleus of the building, by presenting the access card.

At the NHO, anyone with a building access card will be able to access the laboratories, with the exception of master students who have temporarily been granted access to the building for having a job on floors 2 or 3. If there are master students who require access

to the laboratories, this must be requested by the responsible professor to the Director of the Laboratory.

In EHO all access must be requested by the responsible professors to the Directors of the respective laboratories.

Laboratory users are responsible for ensuring the proper use of spaces and their equipment and assume responsibility for personal and material damages that may occur.

DECivil developed this manual containing the laboratory safety procedures, which must be applied. Ignorance of these procedures does not relieve users of the consequences of their failure to comply. To access and use the laboratories, all users must fill the form present in the subchapter 18.2 and send it by e-mail to the Civil Building Manager to pedro.miguel.sanches@tecnico.ulisboa.pt or, alternatively and preferably, fill and send the following online form.

Four distinct laboratory spaces were defined on the floor 02:

- Space 1: Laboratory of Construction (LC);
- Space 2: Laboratory of Structures and Strength of Materials (LERM);
- Space 3: Laboratory of Hydraulics, Environment and Hydric Resources (LHARH);
- Space 4: Laboratory of Geotechnics (LG) + Laboratory of Transport Infrastructures (LVCT)

.

Within the EHO there are two fundamental and cumulative rules that under no circumstances can be broken, namely:

- **No user can be alone in the labs.** At least two people must be present in the same space, and the second person does not need to have an access card, but must be recognizable by the Institution and have a connection to DECivil.
- The use of laboratory facilities at EHO requires users to announce their presence in the laboratories to the guard on duty, by going to the reception of the building or by calling (Ext. 2018) or notifying him when he makes the periodic round to the laboratory. This measure aims to inform the security personnel of the presence of users in laboratories outside the NHO.

Security guards on duty in the building will be instructed to carry out frequent rounds in the laboratory facilities. Whenever there are non-conformities in compliance with these two rules, this will be recorded in a report and the access of these users to the laboratories will be revoked indefinitely until a decision by the Executive Commission.

In the particular case of LERM, the presence of users in this period of EHO always requires the presence of at least one technician. Exceptions to this rule must be previously approved by the Laboratory Coordinator and the Director of LERM.

During a two-week period in August, defined annually by the IST Management Council, DECivil laboratories are closed. Access will only be allowed under exceptional conditions and with the authorization of the Director of the Laboratory, Building Management and the Security, Hygiene and Health Office (NSHS). Those responsible should inform the Building Management of the access needs during this period. In the non-working periods granted to the technicians, the laboratories will operate with the same rules as the EHO.

The yellow railing door at the entrance of the LERM will only open at NHO. Outside these hours, it should be open only if at least one of the technicians from this same laboratory is present.

The green metallic grid gate on the outer wall, west side, of Instituto Superior Técnico, which is located in the outer patio of the laboratories, is not an access point to them, so it must always remain closed except for loading and unloading or other works that by their nature require its opening.

7. Security

All technicians and users must contribute to the proper functioning of the laboratories, both in terms of the safety of installations, as well as tools and equipment.

The permanence and carrying out of work in the laboratory facilities must respect the safety rules in force, namely:

- ✔ strictly follow the instructions provided by the teacher/advisor and laboratory technicians;

- ✔ never work alone in the laboratory;
- ✔ never carry out unauthorized work. All procedures and equipment must be expressly authorized. New works must be expressly authorized by the Director of the laboratory;
- ✔ know the escape routes and the location of the emergency exits, as well as the safety equipment and its use;
- ✔ put all personal belongings in the lockers provided;
- ✔ use safety glasses or protective visor, mask with filter element for work with the production of odors or smells, protective helmet or earphones whenever necessary;
- ✔ avoid wearing rings in the laboratory, as irritating products may be housed under them;
- ✔ do not use long hair bands, wires or other accessories that may get caught in the equipment in operation;
- ✔ laboratory technicians must wear uniforms in which the laboratory where which they belong is identified. In this way it is possible to easily distinguish technicians from users;
- ✔ it is recommended that users wear a high visibility vest that allows their quick identification;
- ✔ avoid contact of any substance with the skin. Wear suitable gloves whenever necessary;
- ✔ do not wear contact lenses in the laboratory. Contact lenses are difficult to remove in case of splash or foreign object enters the eye;
- ✔ the body must be as protected as possible. It is prohibited to use sandals, slippers or other open shoes and flammable fabrics. Adequate closed footwear should be used, with toe cap that protects against mechanical damage and with non-slip and puncture protection sole;
- ✔ if you have long hair, it is recommended that you keep it tied during testing or when operating machines, in order to prevent it from getting caught in working equipment;

- ✔ keep the place clean, tidy and with unobstructed circulation. An adequate organization of the workspace minimizes the occurrence of accidents at work;
- ✔ do not put solid material inside the sinks or drains;
- ✔ do not put solvents or solvent residues in sinks or drains. Suitable containers must be used for this purpose, which must be correctly identified (see subchapter 11.2. Collection of Residue);
- ✔ comply with appropriate waste disposal procedures (see subchapter 11.2. Collection of Residue);
- ✔ check that the lab is safe every time you leave. Check if there are open water or gas taps or equipment improperly connected;

As a complement to this information, it is suggested to read the Laboratory Safety Manual made available by NSHS.

From time to time, and without prior notice, rounds will be carried out by the NSHS to verify non-conformities and non-compliance with these safety rules. The irregular situations detected will be recorded in a safety report and transmitted to the Director General of Laboratories, which may result in the cessation of access to them until a decision is made to the contrary.

In the laboratories, there are means of firefighting duly signed, as well as first aid boxes. In case of emergency, the instructions in the information leaflets existing on the building and in the private safety instructions available in annex 18.1 Private safety instructions (Internal Security Plan) must be followed. **To contact the Security Center, you must use the internal extension 2000 or telephone number 218418000**.

In the event of an accident at work, the injured person must complete the accident reports and, eventually, be accompanied by the medical monitoring report when traveling to the hospital unit. This procedure varies as follows.

For IST employees:

- https://drh.tecnico.ulisboa.pt/files/sites/45/md-nshs-14-r02-participacao-e-qualificacao-do-acidente-em-servico.doc
- https://drh.tecnico.ulisboa.pt/files/sites/45/md-nshs_13_r00_-boletim-de-acompanhamento-medico.doc

For ADIST employees:

- http://adist.pt/files/sites/39/participacao-de-sinistro-acidentes-de-trabalho.pdf

For IST-ID employees:

- http://ist-id.pt/files/sites/43/participacao-de-acidente-de-trabalho.pdf

For IST research fellows:

- http://drh.tecnico.ulisboa.pt/files/sites/45/participacao-de-acidentes-pessoais.pdf
- http://drh.tecnico.ulisboa.pt/files/sites/45/boletim-de-exame-medico.pdf
- http://drh.tecnico.ulisboa.pt/files/sites/45/boletim-de-alta-definitiva.pdf

8. Conditioned works

Tests with load systems, concreting, the use of cutting or drilling tools and noisy equipment, and other tests or work associated with the risk of accident or damage to equipment are only permitted within the Normal Hours of Operation and should only be done by laboratory technicians. Exceptionally, users will also be able to do so if they show competence and dexterity in carrying it out and with the authorization of the Coordinator of the laboratories or technicians. Outside these hours and without the presence of a technician, these works will only be allowed with the authorization of the Coordinator or the Director of the laboratory.

9. Equipment with special authorization

The laboratories have some equipment that, due to their characteristics, interferes with the normal functioning of the activities of other DECivil spaces. The use of such equipment requires authorization from the Laboratory Coordinator or the Building Manager. For safety reasons, this equipment must be operated with the presence of a technician and should only function, preferably, after 5 p.m.. The equipment with special authorization is the following:

- Gas oven (Prof. João Correia) - production of intense smells and fumes;
- Wind tunnel (LERM) - production of intense noise;
- Concrete crusher (LC) - production of intense noise.

10. Equipments, tools and spaces available

The laboratories have a great diversity of tools that are stored in their own places. Some of them are for the exclusive use of technicians and others can be used by users upon their request to the technicians. Users, when placing the order, will be responsible for the correct use of the tools. The tool, after use, must be cleaned, returned and stored in its own place. The tools must not be spread out nor carried away from the laboratory. The same procedure applies to laboratory equipment. Laboratory technicians may deny the loan if the conditions mentioned above are not observed.

The laboratories also have a wide range of equipment, the vast majority of which require specific knowledge for their operation. This equipment is for the exclusive use of technicians or, if they do not have knowledge to do so, of other users duly authorized by the Director of the laboratory. Some simpler equipment can be operated by users as long as they have authorization from the technicians and demonstrate knowledge and expertise to do so.

In the laboratories there are two vehicles managed by the Building Manager and that can be requested by users: a VW Transporter van of mixed category (passengers and cargo) with a capacity for 6 people including the driver, and a maximum allowed load of 950 kg and one Fiat Doblo van also of mixed category, with a capacity of 5 people including the driver. The driving of vehicles can only be done by personnel duly authorized to do so by means of a declaration signed by the President of Instituto Superior Técnico. The use request will have an associated cost and for that purpose it is necessary to fill the form provided by the Coordinator of the laboratories or by the Building Manager. In this document, the applicant must indicate the desired dates, the place of travel and the PEP code to which the cost of using the van will be charged. Vehicle maintenance is carried out by DECivil.

There is an electric front stacker and an overhead crane at LERM that can only be used by laboratory technicians, who have training and certification for handling this equipment. Maintenance and management of the stacker is joint and shared between LERM and LC, while maintenance and management of the crane is the responsibility of LERM.

In the LERM support workshop, where the necessary parts for assembly and testing are carried out, there are tools and equipment with some degree of danger that require specific knowledge for their handling. Thus, access to this space is only limited to LERM technicians and the Coordinator. The use of this space by another employee or user of the laboratories always requires authorization from the Director of LERM.

11. Cleaning

The cleaning of the laboratories located on the floor 02 is carried out by an external company and coordinated by the Building Management. When cleaning laboratories, only cleaning and replacement of trash bags, recyclable materials (in quantities transportable by cleaning employees) and washing floors are contemplated. Cleaning of benches, equipment and other laboratory setups are excluded. It is the responsibility of the users to ensure the cleanliness of the areas and spaces and to prevent the places to be cleaned.

The cleaning of the laboratory spaces on floor 01 is done daily in the afternoon. Regarding the cleaning of the floor 02 spaces, this is carried out weekly and, usually, always on the same days, according to the distribution in Table 1 - Cleaning scheme for the floor 02 laboratories (which may be subject to changes, depending on specific needs).

Table 1 - Cleaning scheme for the floor 02 laboratories

Dia	LC	LERM	LG	LVCT	LHARH	WC mista	Balneário
Segunda-feira	Manhã	Manhã	-	-	-	Manhã	Manhã
Terça-feira	-	-	-	-	-	Manhã	Manhã
Quarta-feira	-	-	Manhã	Manhã	-	Manhã	Manhã
Quinta-feira	-	-	-	-	-	Manhã	Manhã
Sexta-feira	-	-	-	-	Manhã	Manhã	Manhã

11.1. Pest control

Whenever traces of the presence of pests such as rats or cockroaches are detected in laboratory facilities, both indoors and outdoors, the Laboratory Coordinator or Building Manager must be informed so that the NSHS can be contacted. Any changes to the points of deratification and decockroaching must also be communicated to the Pavilion Management.

11.2. Waste collection

The floor 02 laboratories have their own containers, duly identified for sorting and separating waste, namely, common garbage, paper/cardboard and plastic. These containers are located in the central corridor between LERM and LC. All users must be responsible for the correct separation and disposal of waste, respecting the labels on the containers. Table 2 - Synthesis of the types of waste shows the types of waste. The

construction and demolition waste produced in the laboratories can be placed by the respective producers in the container that is located in the western patio. Only construction or demolition waste and rocks or soils are allowed. Other types of waste that may contaminate the waste placed in the container are not allowed.

Table 2 - Synthesis of the types of waste

Tipo de resíduo	**Caracterização do resíduo**
CDW (Construction and Demolition Waste)	Waste from construction, reconstruction or alteration of structural elements, including construction materials, aggregates, binders, mortar and concrete remnants, bituminous products, concrete and / or mortar specimens, etc.
Paper/cardboard	Residue from paper products, cardboard or derived therefrom.
Plastic	Waste from or derived from plastic products.
Wood and metal scrap	Residue from wood products or derived therefrom and products or metal scrap.
Urban garbage	Waste that, due to its nature or composition, is similar to the waste coming from homes.
Glass and Carbon Fibers	Residue from glass, carbon fiber products or derived therefrom.
Hazardous waste	Waste with at least one characteristic of danger to health or the environment.
WEEE (Waste from Electrical and Electronic Equipment)	Waste from all electrical and electronic equipment.

Waste paper, cardboard and plastic must be placed in the containers existing in the laboratories and destined for this purpose. Their sorting must be done according to the information on the container label. Note that the paper/cardboard that is separated must be of good quality and must not be contaminated (with grease, bathroom paper, etc.). Contaminated paper is considered to be urban waste and should be disposed of as such.

Whenever there are wood and metallic materials to dispose of, these must be stored in the laboratories in an appropriate place until they are sufficient to be transported to the compactor on the Alameda Campus, and can be placed behind it, without obstructing accesses to the other existing ecopoints on site.

Fiberglass and carbon residues should not be placed in the open container that is located outside. These materials must be stored in the laboratories in an appropriate place until they are sufficient to fill a container intended for this purpose only.

In both previous cases, whenever there is a sufficient amount to dispose of, the Laboratory Coordinator or the Building Manager must contact the NSHS in order to proceed with their removal.

Due to its characteristics, hazardous waste must be stored in a safe place until it can be transported to the waste warehouse located in Jardim da Química (Alameda Campus). These residues must be properly packaged and conditioned and all containers must be identified with a chemical risk label (indication of the LER code, Table 3) provided by the NSHS. In case of exceptional needs for the delivery of waste or the supply of empty containers, the presence of an NSHS employee must be requested.

Table 3 - Examples of hazardous waste e respective LER codes

Residue Example	**Hazardous Waste LER Code**
Hydrochloric Acid	LER: 06 01 06* - “Other acids ”(e.g. Acids)
Sodium Hydroxide	LER: 06 02 05* - “Other bases” (e.g. Bases)
Silver nitrate	LER: 06 04 05* - “Waste containing heavy metals” (e.g. heavy metals)

The laboratories have no collection point for waste from electrical and electronic equipment, so all equipment of this type can be placed in the electron points located in Jardim da Química (Alameda Campus). They also have no collection point for batteries

and accumulators, so these types of waste can be placed in containers in other buildings. If it is necessary to dispose of larger batteries, contact the NSHS.

For more information on waste, see Annex VII of the NSHS Laboratory Safety Manual.

12. Intervention requests

The correct functioning of laboratory facilities, spaces and associated networks (for example, water distribution, compressed air, waste water) must be guaranteed. Whenever anomalies are detected that affect their normal functioning, they must be reported to the Building Manager, who will be responsible for following up the resolution process by using the available means. Users with an active account on the DECivil Intranet should report these situations directly through the following link:

https://www.civil.ist.utl.pt/admin/submissaoPedidos.php

13. Execution of works

The execution of any works or interventions in the laboratories must be authorized by DECivil. It is the responsibility of the Building Management to streamline procedures with the Works Office and the Maintenance Office, carrying out the respective monitoring together with the Laboratory Coordinator. It is suggested to read the rules for carrying out IST works and maintenance requests at the following link:

http://dtecnica.ist.utl.pt/files/normas_obras_mant.pdf.

14. Outdoor spaces

The outer space of the laboratories must not be used as a storage place for materials or products. In situations of lack of space inside, or due to the dimensions of some products and materials, it can exceptionally be used for this, provided that users have the proper authorization, the spaces are organized, the accesses are unimpeded and the decantation pit accessible.

15. Procedures in case of external visits

The Instituto Superior Técnico promotes annually, with internal and external entities, activities that aim to promote or publicize the existing courses (for example, Summer at Técnico, study visits).

External visits require the authorization of DECivil, in coordination with the IST Management Council.

16. Procedures in a pandemic situation

Due to the pandemic triggered by the SARS-CoV-2 virus, IST implemented, in early March 2020, a Prevention and Action Plan to contain the spread of the disease COVID-19. The measures presented, which reflect the recommendations of various entities such as the Directorate-General for Health or the World Health Organization, have been implemented on all IST campuses and will, of course, be subject to changes imposed by the IST Central Bodies.

In this Plan, the rules to be applied in the laboratory facilities are defined and they are transferred to the DECivil laboratories as follows:

1. The use of a mask is always mandatory during the stay in the facilities.
2. The calculation of the capacity is carried out in such a way that, at each moment, a distance of 2m between all occupants is guaranteed.
3. Maximum occupancy ratio of 5 m^2 per person.
4. It is recommended that in each laboratory, for security reasons, a minimum of 2 people permanently. Laboratories can be locations with a high risk potential resulting from the handling of tools, equipment and chemicals.
5. If it is not possible to implement, cumulatively, the rules mentioned above, the NSHS must be informed in order to monitor the Laboratories that do not satisfy these conditions.
6. If possible and/or appropriate, the distribution of existing equipment and work tables should be reorganized in order to optimize the use of spaces, ensuring the existence of a 2m distance between the occupants.
7. In the circulation within the spaces, and in their entry and exit, behaviors that allow the maintenance of interpersonal distance should be adopted.
8. A poster containing a clear indication of the maximum capacity of the space and the name and contact telephone number of the person responsible for laboratory safety, as shown in the attached model, is affixed to the door of each laboratory, or in another equally visible and easily consulted place.
9. It is the responsibility of the laboratory security officer to define the rules for implementing the principles set out above, taking into account, in particular, the size of the spaces, the type of existing equipment, the type of work developed and the efficient and effective use of existing resources according to the needs of the work to be carried out, establishing the hours of operation of the laboratory and defining/approving the scales of use, if applicable.
10. The person responsible for the safety of the laboratory must always be contactable during the opening hours that are defined for the respective space.
11. NSHS supports the implementation of the rules, clarifying doubts and serving as a center for sharing good practices.
12. The NSHS, together with the building managers, monitors and inspects the implementation and compliance with the defined principles and rules, and is responsible for issuing recommendations for improving safety conditions at work.

17. Improvement suggestions

Suggestions for improving this manual should be addressed to the Building Management at pedro.miguel.sanches@tecnico.ulisboa.pt, which will subsequently send them to the DECivil Executive Commission for consideration.

18. Attachments

18.1. Special safety instructions (Internal Security Plan)

INSTRUÇÃO PARTICULAR DE SEGURANÇA

LABORATÓRIOS

EM CASO DE DERRAME

•Utilizar um produto absorvente disponível para o efeito.
•Equipar-se com os equipamentos de proteção individual apropriados (ver FDS do produto)
•Informar o Gestor do Edifício.

PREVENÇÃO

- Informar o Gestor do Edifício se detetar qualquer deficiência no laboratório.
- Não fumar nem fazer fogo no interior do laboratório.
- Manter o espaço permanentemente limpo e organizado.
- Manter sempre atualizadas as fichas de dados de segurança dos produtos utilizados.
- Mantenha sempre as prateleiras de armazenamento arranjadas de maneira a que o material armazenado não possa cair.
- Não fazer nem utilizar instalações elétricas improvisadas.
- Manter desobstruídas as vias de circulação e saídas de acesso.

EM CASO DE INCÊNDIO

1. Acionar o Botão Manual de Alarme mais próximo e informar a Central de Segurança NSHS (EXT. **2000** ou telefone **218 418 000**).
2. Se possível, cortar a corrente elétrica do local no quadro parcial.
3. Tentar extinguir o incêndio com os extintores colocados na zona, sem correr riscos.

Nota: Nunca utilizar água ou outros agentes à base de água sobre a instalação elétrica em tensão.

4. Se não conseguir dominar o incêndio, fechar a porta e abandonar o local.

INSTRUÇÃO PARTICULAR DE SEGURANÇA

ARMAZÉNS

PREVENÇÃO

- Informar o Gestor do Edifício se detetar qualquer deficiência no armazém.
- Não fumar nem fazer fogo no interior do armazém.
- Manter o espaço permanentemente limpo e organizado.
- Mantenha sempre as prateleiras de armazenamento arranjadas de maneira a que o material armazenado não possa cair.
- Sempre que seja necessário armazenar materiais em pilhas estas deverão ter a forma de pirâmide e, se manuseadas manualmente, não deverão exceder 1,80 m de altura. Quando a armazenagem for feita em prateleiras os materiais mais pesados deverão ser colocados nas prateleiras inferiores.
- Não fazer nem utilizar instalações elétricas improvisadas.
- Não efetuar trabalhos a quente ou com produção de chamas, sem retirar os materiais combustíveis das proximidades. O Gestor do Edifício e o Delegado de Segurança terão de ter conhecimento e dar autorização.
- Manter desobstruídas as vias de circulação e saídas de acesso ao armazém.
- Manter as portas de acesso ao armazém fechadas.

EM CASO DE DERRAME

•Utilizar um produto absorvente disponivel para o efeito.
•Equipar-se com os equipamentos de proteção individual apropriados (ver FDS do produto)
•Informar o Gestor do Edifício.

EM CASO DE INCÊNDIO

1. Acionar o Botão Manual de Alarme mais próximo e informar a Central de Segurança NSHS (EXT. **2000** ou telefone **218 418 000**).
2. Se possível, cortar a corrente elétrica do local no quadro parcial.
3. Tentar extinguir o incêndio com os extintores colocados na zona, sem correr riscos.

Nota: Nunca utilizar água ou outros agentes à base de água sobre a instalação elétrica em tensão.

4. Se não conseguir dominar o incêndio, fechar a porta e abandonar o local.

INSTRUÇÃO PARTICULAR DE SEGURANÇA

ARMAZEM DE CONSTRUÇÃO

PREVENÇÃO

- Informar o Gestor do Edifício se detetar qualquer deficiência no armazém.
- Não fumar nem fazer fogo no interior do armazém.
- Manter o espaço permanentemente limpo e organizado.
- Mantenha sempre as prateleiras de armazenamento arranjadas de maneira a que o material armazenado não possa cair.
- Sempre que seja necessário armazenar materiais em pilhas estas deverão ter a forma de pirâmide e, se manuseadas manualmente, não deverão exceder 1,80 m de altura. Quando a armazenagem for feita em prateleiras os materiais mais pesados deverão ser colocados nas prateleiras inferiores.
- Não fazer nem utilizar instalações elétricas improvisadas.
- Não efetuar trabalhos a quente ou com produção de chamas, sem retirar os materiais combustíveis das proximidades. O Gestor do Edifício e o Delegado de Segurança terão de ter conhecimento e dar autorização. Manter desobstruídas as vias de circulação e saídas de acesso ao armazém.
- Manter as portas de acesso ao armazém fechadas.

EM CASO DE DERRAME

•Utilizar um produto absorvente disponível para o efeito.
•Equipar-se com os equipamentos de proteção individual apropriados (ver FDS do produto)
•Informar o Gestor do Edifício.

EM CASO DE INCÊNDIO

1. Acionar o Botão Manual de Alarme mais próximo e informar a Central de Segurança NSHS (EXT. **2000** ou telefone **218 418 000**).
2. Se possível, cortar a corrente elétrica do local no quadro parcial.
3. Tentar extinguir o incêndio com os extintores colocados na zona, sem correr riscos.

Nota: Nunca utilizar água ou outros agentes à base de água sobre a instalação elétrica em tensão.

4. Se não conseguir dominar o incêndio, fechar a porta e abandonar o local.

INSTRUÇÃO PARTICULAR DE SEGURANÇA

ARRECADAÇÃO

PREVENÇÃO

- Informar o Gestor do Edifício se detetar qualquer deficiência na arrecadação.
- Não fumar nem fazer fogo no interior da arrecadação
- Manter o espaço permanentemente limpo e organizado.
- Mantenha sempre as prateleiras de armazenamento arranjadas de maneira a que o material armazenado não possa cair.
- Sempre que seja necessário armazenar materiais em pilhas estas deverão ter a forma de pirâmide e, se manuseadas manualmente, não deverão exceder 1,80 m de altura. Quando a armazenagem for feita em prateleiras os materiais mais pesados deverão ser colocados nas prateleiras inferiores.
- Não fazer nem utilizar instalações elétricas improvisadas.
- Não efetuar trabalhos a quente ou com produção de chamas, sem retirar os materiais combustíveis das proximidades. O Gestor do Edifício e o Delegado de Segurança terão de ter conhecimento e dar autorização. Manter desobstruídas as vias de circulação e saídas de acesso à arrecadação.
- Manter as portas de acesso à arrecadação fechadas.

EM CASO DE DERRAME

•Utilizar um produto absorvente disponível para o efeito.
•Equipar-se com os equipamentos de proteção individual apropriados (ver Ficha de dados de segurança do produto)
•Informar o Gestor do Edifício .

EM CASO DE INCÊNDIO

1. Acionar o Botão Manual de Alarme mais próximo e informar a Central de Segurança NSHS (EXT. **2000** ou telefone **218 418 000**).
2. Se possível, cortar a corrente elétrica do local no quadro parcial.
3. Tentar extinguir o incêndio com os extintores colocados na zona, sem correr riscos.

Nota: Nunca utilizar água ou outros agentes à base de água sobre a instalação elétrica em tensão.

4. Se não conseguir dominar o incêndio, fechar a porta e abandonar o local.

INSTRUÇÃO PARTICULAR DE SEGURANÇA

CASA DAS MÁQUINAS

PREVENÇÃO

- Informar o Gestor do Edifício se detetar qualquer deficiência no local.
- Não fumar nem fazer fogo no interior deste local.
- Manter o espaço permanentemente limpo, organizado e assegurar a eficácia das suas condições de ventilação.
- Não utilizar este espaço para armazenamento de materiais.
- Não fazer nem utilizar instalações elétricas improvisadas.
- Não efetuar trabalhos a quente ou com produção de chamas, sem retirar os materiais combustíveis das proximidades. O Gestor do Edifício e o Delegado de Segurança terão de ter conhecimento e dar autorização.
- Manter desobstruídas as vias de circulação e saídas de acesso ao local.
- Manter as portas de acesso ao local fechadas.

EM CASO DE INCÊNDIO

1. Acionar o Botão Manual de Alarme mais próximo e informar a Central de Segurança NSHS (EXT. **2000** ou telefone **218 418 000**).
2. Se possível, cortar a corrente elétrica do local no quadro parcial.
3. Tentar extinguir o incêndio com os extintores colocados na zona, sem correr riscos.

Nota: Nunca utilizar água ou outros agentes à base de água sobre a instalação elétrica em tensão.

4. Se não conseguir dominar o incêndio, fechar a porta e abandonar o local.

EM CASO DE DERRAME

•Se ocorrer um derrame de óleo de lubrificação, limpar imediatamente o produto derramado para evitar a formação de vapores inflamáveis.

•Utilizar um produto absorvente disponível para o efeito.

•Informar o Gestor do Edifício .

INSTRUÇÃO PARTICULAR DE SEGURANÇA

CARPINTARIA

NO FINAL DO DIA DE TRABALHO

•Remova todos os materiais combustíveis desnecessários para local adequado.

•Antes de sair, certifique-se, que todos os equipamentos não essenciais estão desligados.

PREVENÇÃO

- Informar o Gestor do Edifício se detetar qualquer deficiência no local.
- Não fumar nem fazer fogo no interior deste local.
- Manter o espaço permanentemente limpo e organizado.
- Não utilizar este espaço para armazenamento de materiais.
- Limitar as quantidades de produtos químicos inflamáveis.
- Não fazer nem utilizar instalações elétricas improvisadas.
- Não efetuar trabalhos a quente ou com produção de chamas, sem retirar os materiais combustíveis das proximidades. O Gestor do Edifício e o Delegado de Segurança terão de ter conhecimento e dar autorização.
- Manter desobstruídas as vias de circulação e saídas de acesso ao local.
- Manter as portas de acesso ao local fechadas.

EM CASO DE INCÊNDIO

1. Acionar o Botão Manual de Alarme mais próximo e informar a Central de Segurança NSHS (EXT. **2000** ou telefone **218 418 000**).
2. Se possível, cortar a corrente elétrica do local no quadro parcial.
3. Tentar extinguir o incêndio com os extintores colocados na zona, sem correr riscos.

Nota: Nunca utilizar água ou outros agentes à base de água sobre a instalação elétrica em tensão.

4. Se não conseguir dominar o incêndio, fechar a porta e abandonar o local.

EM CASO DE DERRAME

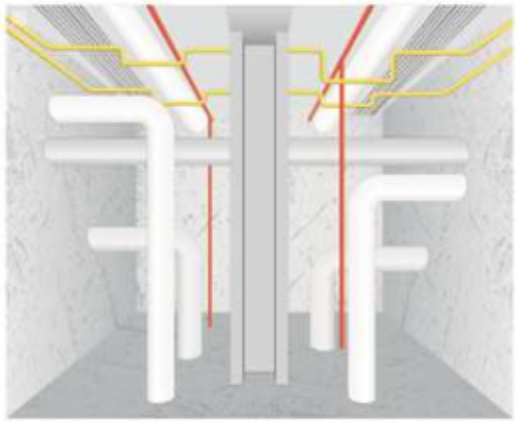
•Utilizar um produto absorvente disponível para o efeito.

•Equipar-se com os equipamentos de proteção individual apropriados (ver FDS do produto)

•Informar o Gestor do Edifício.

INSTRUÇÃO PARTICULAR DE SEGURANÇA

GALERIA TÉCNICA



PREVENÇÃO

- Informar o Gestor do Edifício se detetar qualquer deficiência no local.
- Não fumar nem fazer fogo no interior deste local.
- Manter o espaço permanentemente limpo, organizado e assegurar a eficácia das suas condições de ventilação.
- Não utilizar este espaço para armazenamento de materiais.
- Não fazer nem utilizar instalações elétricas improvisadas.
- Não efetuar trabalhos a quente ou com produção de chamas, sem retirar os materiais combustíveis das proximidades. O Gestor do Edifício e o Delegado de Segurança terão de ter conhecimento e dar autorização. Manter desobstruídas as vias de circulação e saídas de acesso ao local.
- Manter as portas de acesso ao local fechadas.

EM CASO DE INCÊNDIO

1. Acionar o Botão Manual de Alarme mais próximo e informar a Central de Segurança NSHS (EXT. **2000** ou telefone **218 418 000**).
2. Se possível, cortar a corrente elétrica do local no quadro parcial.
3. Tentar extinguir o incêndio com os extintores colocados na zona, sem correr riscos.

Nota: Nunca utilizar água ou outros agentes à base de água sobre a instalação elétrica em tensão.

1. Se não conseguir dominar o incêndio, fechar a porta e abandonar o local.

INSTRUÇÃO PARTICULAR DE SEGURANÇA

COZINHA

FUGA DE GÁS COMBUSTÍVEL

1. Fechar a válvula de corte de gás, se possível.
2. Informar a Receção.
3. Arejar o espaço, abrindo portas e janelas.
4. Não acender fósforos ou isqueiros, nem acionar interrutores.

PREVENÇÃO

- Informar o Gestor do Edifício se detetar qualquer deficiência na cozinha.
- Manter a cozinha permanentemente limpa e arrumada.
- Verificar e limpar regularmente os queimadores e todos os dispositivos para a sua regulação.
- Verificar regularmente as condutas de evacuação de fumos e gases da combustão, exaustores ou chaminés e os respetivos filtros.
- Afastar os aerossóis das chamas.
- Ao instalar equipamentos, verificar se estes não impedem a acessibilidade aos meios de proteção contra incêndio e se a evacuação não fica impedida ou prejudicada.
- Não permitir a ligação de vários equipamentos elétricos à mesma tomada.
- Manter desobstruídos os acessos à cozinha, não permitindo a acumulação de objetos combustíveis na sua proximidade.
- Manter as portas de acesso à cozinha sempre fechadas.

EM CASO DE INCÊNDIO

1. Acionar o Botão Manual de Alarme mais próximo e informar a Central de Segurança NSHS (EXT. **2000** ou telefone **218 418 000**).
2. Se possível, cortar a corrente elétrica da cozinha no quadro parcial.
3. Efetuar o corte do gás combustível na válvula de corte parcial.
4. Tentar extinguir o incêndio com os extintores colocados na zona, sem correr riscos.
5. Em caso de incêndio numa frigideira use a manta ignífuga para extinguir o incêndio.

Nota: Nunca utilizar água ou outros agentes à base de água sobre a instalação elétrica em tensão.

6. Se não conseguir dominar o incêndio, fechar a porta e abandonar a cozinha.

NO FINAL DO DIA

- Remover todos os materiais combustíveis desnecessários para local adequado.
- Antes de sair, certificar-se que todos os equipamentos não essenciais estão desligados.

DECIVIL
DEPARTAMENTO DE ENGENHARIA CIVIL, ARQUITETURA E GEORRECURSOS
TÉCNICO LISBOA

18.2. Declaration of compliance with safety procedures

_____, ist-ID_____

1. I declare that I am aware of the existence of the Laboratory User Manual of the Department of Civil Engineering, Architecture and Georesources of the Civil Building.

2. I declare that I will comply with all the rules, indications and methodologies defined in this Manual, as well as I will ensure that they are complied with.

3. I declare that I understand and accept that failure to comply with or disregard the rules, indications or methodologies contained in this Manual may lead to the inhibition of my access to the DECivil laboratories for an indefinite period, to be determined by the Director of the laboratories.

Date: _____

User signature: _____

Received: _____

18.3. COVID-19 measures poster

TÉCNICO LISBOA

COVID-19
Medidas de Segurança

Medidas de desconfinamento para este laboratório
Deconfinement measures for this lab

Responsável de segurança / Safety manager

Telefone / Phone

E-mail

Horário de funcionamento / Working hours

Nº máximo de pessoas em simultâneo
Maximum number of people at the same time

Uso de máscara é obrigatório em toda a área do campus
The use of face mask is mandatory

Lavar frequentemente as mãos de preferência com água e sabão ou, no caso de não ser possível lavar, proceda à desinfeção com solução alcoólica
Wash your hands frequently with soap and water. If soap and water are not readily available use alcohol-based hand sanitizer

Distanciamento interpessoal mínimo de 2m
Minimum interpersonal distance 2m

Ventile regularmente os espaços
Regularly ventilate your workspace

COVID19_IST_informacoes@tecnico.ulisboa.pt