Departmental Health and Safety Policy

The Department pledges to ensure that everyone working in it does so in a safe environment, whether in an office, in the laboratory and in the field (Sections 2 and 3, Health and Safety at Work Act, 1974). Our staff are committed to give highest priority to safe working practices in teaching and research; financial resources are available to ensure that the necessary safety equipment is installed. Safety policy is regularly reviewed in order to make improvements wherever necessary.

Section 7 of the 1974 Health and Safety at Work Act ensures that everyone working in the Department carries a responsibility towards safety, students and staff alike, and this booklet explains how this is implemented. Departmental Safety exceeds the legal requirements that are incorporated into College safety procedures which are explained in the Student Handbook issued by the College.

Notices in each of the teaching laboratories locate the nearest First Aid box and list those qualified in First Aid to contact in an emergency. General information about health and safety matters can be found on the Safety Noticeboard in the Department Foyer. If you have any questions or concerns about safety matters, consult whoever is in charge of your class (or your supervisor), the Departmental Health and Safety Co-ordinator, Dan Parsonage, or myself as Head of Department (see back page).

Thankfully, accidents are rare, but geologists do venture into hazardous areas, both in the field and in the laboratory. By recognising and assessing the hazards and using common sense, accidents are preventable.

JÜRGEN ADAM

(Head of Department)
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RHUL EMERGENCY PHONE NUMBER

444 (from internal phones)
01784 443888 or 01784 443333 (from mobile phones)

FIRE, POLICE, AMBULANCE 9-999
(from College internal telephone)
INTRODUCTION

Recent legislation makes safety in a college such as RHUL the joint responsibility of

(a) the College authorities, and

(b) every individual member of the College, whether staff or student

This booklet outlines the contribution you as a student are expected to make to the safe running of this Department and its various activities. Please look upon it as a constructive code of practice designed to help everyone work safely together, and not as a tedious set of rules to be tolerated grudgingly.

The booklet is designed to be used throughout your three or four years here; please keep it on your bookshelf for reference. Part A (sections 1-5) applies to all students and you should read this immediately. Part B (sections 6 onward) covers more specialised activities, and need only be read by those who engage in them.

Risk assessment is at the heart of all we do in the Department of Earth Sciences. Any procedure carried out in the department must be risk assessed regularly and each assessment signed and dated. All undergraduate teaching activities have been risk assessed and these assessments are kept in the office of the Technical Operations Manager and may be consulted there.

SAFETY PERSONNEL

Department staff responsible for safety matters

Mr D Parsonage (Safety Co-ordinator & Technical Operations Manager) Tel. 3595
Mr D Parsonage (Radiation/Laser Safety Officer) Tel. 3595
Dr D Lowry (Fieldwork Safety Co-ordinator/Advisor of lab. gases) Tel. 3587/3629
Dr C Manning (Disability Adviser) Tel. 3835
Mr M Longbottom (VDU Co-ordinator) Tel. 3622
Ms S Woods / Prof M King (COSHH) Tel. 3633, 4038

Deputy (if absent)

Mr J Brakeley Tel. 3633
Mr K D’Souza Tel. 3610
Mr D Parsonage Tel. 3595
Dr D Lowry Tel. 3105
Dr C Manning Tel. 3835
Mr D Parsonage Tel. 3595
Ms D Serpant Tel. 3588
Prof DA Waltham Tel. 3617
Dr I Watkinson Tel. 3896
Mr J Brakeley Tel. 3633

Staff qualified in First Aid

Prof J Adam Tel. 4258
Prof ME Collinson Tel. 3607
Mr K D’Souza Tel. 3610
Prof H Falcon-Lang Tel. 4039
Ms S Gibbons Tel. 3619
Dr N Grassineau Tel. 3810
Prof R Hall Tel. 3897
Prof MD King Tel. 4038
Dr D Lowry Tel. 3105
Dr C Manning Tel. 3835
Mr D Parsonage Tel. 3595
Ms D Serpant Tel. 3588
Prof DA Waltham Tel. 3617
Dr I Watkinson Tel. 3896
Mr J Brakeley Tel. 3633

Many other staff have received First Aid training, especially in Field First Aid.

COLLEGE EMERGENCY NUMBER 444
1. EMERGENCIES

1.01 **FIRST AID.** If you suffer an injury, or find someone injured, call the Technical Operations Manager (Ext. 3595, QB265) or another qualified First-Aider. A notice in each teaching laboratory gives a list of the nearest First Aiders and nearest First Aid box (for example, there is one accessible in the Earth Sciences foyer area).

1.02 **FIRE ALARM.** If the fire bells ring continuously:

- leave the building immediately by the shortest safe route, following the green Fire Exit signs. Do not stop to collect belongings.

- report to the **assembly point 15** on the south side of the building straight away; do not wander off without reporting.

- do not enter the building again until advised to do so by a fire marshall / member of staff.

- **Thursday 10.00 am : fire alarm testing.** The alarm will only ring for approx. 15 seconds.

1.03 **DEALING WITH A FIRE.** If you discover a fire:

- activate the nearest fire alarm immediately.

- leave the building.

- report to the assembly point (see 1.02).

**NOTE:** Make yourself aware of all emergency exits and where the fire alarms are situated.

2. GENERAL SAFETY IN THE DEPARTMENT

2.01 **Working hours.** The teaching laboratories are open to students from 9am to 6pm each weekday. Special arrangements must be made with the Technical Operations Manager for access outside these hours.

2.02 **Conduct.** Always behave in a restrained and responsible manner when in the Department. Never run in the corridors or on the stairs, or engage in horseplay indoors: you could cause an injury or damage.

2.03 **Belongings.** Please do not leave your belongings

- in corridors or stair wells;

- near exits, particularly fire exits;

- near to emergency equipment such as fire extinguishers;

- near to electrical equipment or sources of heat.

2.04 **Litter.** Dispose of litter properly. Never put matches or cigarettes into waste-paper bins, even when extinguished.

2.05 **Asthma, Diabetes, Epilepsy, etc.** Students suffering health conditions or taking medications which in some circumstances could render them unconscious MUST report the fact in confidence to their Personal Adviser or the Department Safety Co-ordinator, so that field trip
leaders can be advised accordingly. Note that ethical considerations forbid the Health Centre to pass on to departments relevant health information about individual students. The Department must be informed of any disability which is likely to affect safety, particularly in the field or laboratory. If in doubt, please consult Dr Christina Manning, the Department’s Disability Co-ordinator.

2.06 **Smoking** is not allowed anywhere in this building, or within 5m of the front entrance, or on field trips (see 5.11).

2.07 **Warning Signs** Under EU rules all labels and signs conform to the following colours:
- **Red** - Prohibition. e.g. No Smoking
- **Blue** – Mandatory. e.g. Face masks must be worn
- **Yellow** – Advisory. e.g. Radiation
- **Green** – Safety. e.g. Fire exit

**ANY ACCIDENT, INCIDENT OR POTENTIAL HAZARD WHICH OCCURS IN THE DEPARTMENT MUST BE REPORTED IMMEDIATELY TO DAN PARSONAGE**

3. SECURITY

For the protection of the building and its occupants Queen’s Building has a security system which automatically locks all doors at 18.00 every week night and opens them again at 08.00. All doors are locked from Friday night until Monday morning. If access is needed at night or over the weekend, an access card can be issued by the Technical Operations Manager, Dan Parsonage. This card is unique to the holder and should not be loaned or passed to anyone else. Failure to observe this rule will lead to the card being deactivated. Out-of-hours access to the departmental buildings via access cards is monitored all the time on a computer and misuse is sanctioned.

If you are in the building when it is locked, you should leave by the main door only. All other doors are monitored and if opened will cause an alarm.

Undergraduates’ access cards operate only between 06.00 and 22.00.

If you come into the department for some out-of-hours revision work for example, you may only use the teaching rooms normally used during the day, i.e. rooms 264, 240, JBB005, 227, 228 or 239. Come in pairs (‘buddy-system’) when working out-of-hours to be able to respond better should an emergency occur. You must leave by 22.00 at the latest.

You must carry a mobile phone with you that has the RHUL security number stored: **01784 443888 or 01784 443333 (from mobile phones) or 444 from an internal phone, or 01784-443063 for routine contact.**

Any problems with the security system should be reported to Dan Parsonage, or in an emergency to the Security Staff in Founders, ext: 3063.

4. LECTURES AND PRACTICAL CLASSES

Most of your lectures and practicals will be undertaken in departmental practical laboratories. When working in these laboratories you should be aware of the following potential hazards:

1. **Low shelves.** In some laboratories projection equipment is placed on low shelves. Take care to note where these are and avoid collisions.

2. **Rock drawers.** Be careful when pulling out rock drawers. Some of these are very heavy; note labels on the drawers. For access to high drawers (e.g. in room 264) the safety step ladders must be used. In these stacks special pull-out shelves are provided. Do not attempt to carry heavy drawers alone, and follow safe lifting practice.
3. **Map cases.** Maps are kept both in horizontal and vertical map cases which are large. Do not leave cases open as this will cause a hazard. Be careful of fingers when closing cabinets.

4. **Rock specimens.** Some specimens can be heavy and some have sharp points. Be careful when handling specimens and treat them with respect. Many specimens are irreparable and some are broken by students every year by inappropriate handling. Dilute HCl may be used during laboratory and field classes and particular caution has to be exercised in such cases.

5. **Paper.** When handling maps etc., take care not to cause paper cuts on your fingers.

6. **Microscopes.** These are heavy, intricate and expensive pieces of equipment. Please take care with handling these at all times. Seek instruction on their use. Please pay particular attention not to rack the lens into the microscope slide. This may damage the lens and break the slide. The slides are glass and hence present a potential hazard particularly if broken on the microscope, or dropped. **When changing between different magnifications, turn the ring but DO NOT pull/push the individual lenses/objectives.**

### 5. FIELD COURSES AND EXCURSIONS *

Geological fieldwork is an activity involving some inherent risks, for example in coastal exposures, at high altitudes, quarries or mines. Severe weather conditions may be encountered in all seasons, especially on mountains or near the coast.

In accordance with the Health and Safety at Work Act 1974, leaders will have been advised by the Department to take every reasonable care concerning the safety of all taking part in field trips. Before each trip, the course leader will outline to you likely hazards/risks associated with the trip, and the necessary precautions you should take. A detailed written risk assessment will be available for consultation before each field trip departs, kept in the Technical Operations Manager’s office, and a summary sheet will be handed out to students. However, the potential dangers make it imperative that students cooperate by behaving responsibly in order to minimise the risk of accidents. Each individual is responsible for his/her own safety.

The Department requires you to possess your own safety helmet, eye protection, personal first aid kit, whistle and emergency blanket. Please remember to bring these **on all field trips, otherwise you run the risk of not being allowed on the trip!**

College insurance does not include personal accident cover for students on field work. You may wish to insure privately against such risks, particularly for trips abroad (consult the leader). The EHIC (European Health Insurance Card) obtainable via the Department of Health (https://www.ehic.org.uk/Internet/home.do) provides basic medical cover in EU countries, although provisions vary greatly from one country to another. Allow several weeks for it to arrive, so apply early!

Please observe the following guidelines during field trips:

5.01 **Observe all safety instructions** given by party leaders. Anyone not conforming to the standards of behaviour required may be excluded from the field trip.

Stay with the party, except by clear arrangement with the leader(s). Assemble where requested (e.g. outside a quarry) in order to receive specific guidance on likely hazards. Observe instructions for reporting after completion of the visit.

* Based on guidelines issued by the Committee of Heads of University Geoscience Departments
Report any injury, illness, or any form of harassment immediately.

5.02 **Wear adequate clothing and footwear** for the terrain and weather likely to be encountered. The following will generally be required:
- warm shirt, loose-fitting trousers and brightly coloured anorak;
- warm sweater, woolly hat and gloves for mountain or winter trips;
- cagoule and water-proof over-trousers;
- walking boots (with ankle support!) with Vibram or similar soles; trainers or Wellingtons are not appropriate
- DO NOT wear shorts and singlets due to risk of sunburn and injury when walking through dense vegetation.

Leaders may refuse to allow ill-equipped students to participate in their field trips.

5.03 **Wear a safety helmet** (with chin strap) when advised to do so by the field trip leader. It is obligatory to wear a helmet when visiting working quarries, mines and building sites.

5.04 **Always wear eye protection** when hammering rocks or using a hammer and chisel, and when using dilute acids. Spectacle wearers should note that normal spectacles do not have the necessary impact protection.

**NEVER USE ONE HAMMER AS A CHISEL TO BE HIT WITH ANOTHER HAMMER,** because dangerous splinters of steel can fly off: There are too many one-eyed geologists already as a result of this practice.

Avoid hammering near or towards another person. Always look the other way when others hammer near to you. Hammer downwards, not sideways, if others are around. It is advisable to wear gloves when hammering, even in hot weather, as sharp chips can cut the hands, or when using appropriate chisels to minimise the risk of injury.

5.05 **Cliffs and quarries** require particular care, especially in gusting or strong winds. Ensure that rocks above are secure before venturing below, particularly during a thaw or in unstable places such as blasted quarry faces. Avoid unstable overhangs. Avoid loosening rocks on steep slopes, and beware of rockfalls. Never work or walk directly above or below another person on a steep slope.

**NEVER roll rocks down slopes for amusement. Even in remote places “trundling” can kill or cause serious damage.**

Beware of landslides and mudflows occurring on clay cliffs and in claypits.

5.06 **Avoid touching any machinery or equipment** in quarries, mines or building sites.

Never pick up explosives or detonators from rock piles; if found, inform the management immediately.

Comply scrupulously with local safety rules, blast warning procedures, and instructions given by officials.

Watch out for moving vehicles.

Beware of sludge lagoons.

5.07 **Do not climb cliffs, rock faces or crags** unless approved as an essential part of the work and properly supervised.

Take great care when walking or climbing over slippery rocks below high water mark on rocky shores. **More accidents involving geologists occur along rocky shorelines than anywhere else.**
5.08 **Beware of traffic when examining road cuttings.** Keep hammering to a minimum, and do not leave rock debris on the roadway or verges.

Railway and motorway cuttings are not open to geologists, unless special permission has been obtained from the appropriate authorities.

5.09 **Do not enter old mine workings** or cave systems unless authorised as an essential part of your work. Then only do so with proper lighting, headgear and route-tracing equipment, in the company of an experienced person. Ensure that someone on the surface knows your location and expected time of return. Be sure to report to them on returning to the surface.

5.10 **General behaviour.** All participants in field courses are expected to observe sensible standards of behaviour, to conduct themselves with consideration for others (particularly in hotels or other accommodation) and not to damage property in any way (e.g. climbing over walls, leaving gates open, trampling crops). Drinking of alcohol is not permitted during fieldwork. This includes break times while in field locations, and time spent in all forms of field trip transport.

Please do not disturb the environment more than is absolutely necessary. Remember that public access is an acute problem in the countryside.

5.11 **Smoking.** Smoking cigarettes, pipes and e-cigarettes is not permitted during fieldwork. This includes break time while in field locations, and time spent in all forms of field trip transport, including private cars. Smoking is only permitted on field trips in areas designated for smoking during rest stops while travelling, and in appropriate locations in the field trip accommodation.

5.12 **Toilet facilities.** You are reminded that many field trips will be to remote locations, and toilet facilities may be limited or non-existent. Leaders of trips will make every effort to find appropriate facilities as necessary.

### 6. INDEPENDENT FIELD WORK *

All the provisions in Section 5 apply also to independent fieldwork. The nature of the training, however, involves an important element of self-reliance, and students undertaking independent fieldwork are necessarily responsible for their own safety in the field. However, it is likely that students will be mostly working in pairs or small groups (the ‘buddy’ system). In this case you should agree a scheme for rescue in the event of an accident.

The following guidelines must be followed:

6.01 **Discuss likely safety problems** and risks, and the equipment required, with your project adviser beforehand. A field risk assessment form must be completed with your adviser beforehand.

6.02 **Plan your work carefully,** bearing in mind your experience and training, the nature of the terrain, and the weather. Be careful not to over-estimate what can be achieved. Familiarise yourself with local rescue/medical facilities.

6.03 **Leave information about your route each day,** either with a colleague or a local person, or by leaving a dated note or map on your tent or car. Never break arrangements to report your return. If camping, do so near to habitation if possible.

* Based on guidelines issued by the Committee of Heads of University Geoscience Departments
6.04 **Check weather forecasts.** Keep a constant look-out for weather changes. Do not hesitate to turn back if the weather deteriorates.

At high altitudes, thunderstorms and other sudden weather changes are particularly dangerous.

6.05 **Carry at all times the following items:**
- a small first aid kit
- emergency food & drink (chocolate, mint cake, glucose tablets, etc.) in addition to normal rations for the day
- a survival (bivouac) bag or emergency blanket
- map, compass and watch
- torch and whistle
- adequate spare clothing and waterproofs, even if the weather is good at the start of the day

6.06 **Avoid getting trapped** by the tide on intertidal banks or below sea cliffs.

Obtain local information about tides and currents. Carefully observe the high-tide mark when working along the shore. Local advice on coastal conditions can be obtained from H.M. Coastguard.

Always wear footwear when wading in rivers, lagoons or on the shore. Removing socks first will prevent the discomfort of wet feet for the rest of the day.

6.07 **Always try to obtain permission** to enter private property. Follow the recognised procedure for visits to quarries, building sites, etc. Be careful to report on leaving the site.

6.08 **Rock climbing and caving** should only be undertaken in the company of an experienced companion and with the prior approval of your project adviser or the Head of Department.

6.09 **Working off-shore requires special precautions.** Small boats should only be used in the company of an experienced boatman or colleague.

    *Always wear a life jacket (Mae West type).* Aqualung equipment should only be used by experienced, trained divers.

6.10 **Make sure you are conversant** with the particular safety and health requirements if you work in a new environment; for example, underground in a mine, or abroad in tropical, desert or arctic conditions.

6.11 **Know the International Distress Signal:**
- six whistle blasts, torch flashes, etc.;
- one-minute pause;
- another three blasts, flashes, etc. every 20 seconds.

6.12 **When working in mountains** or other exposed areas, familiarise yourself with the mountain safety code.

Be aware of the effects of exposure and hypothermia. Know in advance what to do in an emergency. Further advice is given in the following publications:

Mountain Safety: Basic Precautions. Published by Climber and Rambler magazine, Perth PH1 5TT or 56 Fleet Street, London EC4.

Safety in Mountains (1975) published by the British Mountaineering Council, Crawford House, Precinct Centre, University of Manchester, Manchester M13 9RZ. Available from Cordee, 249 Knighton Road, Leicester.
7. RESEARCH LABORATORIES & FACILITIES

Geochemistry and ICP Laboratories, office and stores (Room 041)
Supervising staff members: Dr. Nathalie Grassineau
Mr J Brakeley

Environmental Geochemistry (Room 017)
Supervising staff member: Prof. Martin King

Radiogenic Isotope Laboratory (Room 033)
Supervising staff members: Prof. Matthew Thirlwall
Dr. Christina Manning

Laser-Ablation ICP-MS Laboratory (Room 033a)
Supervising staff member: Dr. Christina Manning

Stable Isotope Laboratory (Rooms 047 & 006)
Supervising staff members: Prof. David Mattey
Dr. David Lowry

Atmospheric Monitoring Laboratory (Room 016)
Supervising staff members: Prof. Euan Nisbet
Dr. David Lowry

Sedimentology Laboratory (Room 004)
Supervising staff member: Dr. Amy Gough

Environmental Chemistry Laboratory (Room 001)
Supervising staff member: Dr. Kevin Clemitshaw

Palaeontology Laboratory (Room 261 + 220)
Supervising staff members: Prof. Margaret Collinson
Mrs. Sharon Gibbons

Structural Laboratories (Upper & Lower) (Rooms 037 & 204)
Supervising staff members: Prof. Jurgen Adam
Mr. Kevin D’Souza

Rock Crushing Laboratory (Room 053)
Supervising staff members: Mr. J Brakeley
Dr. Christina Manning

X-Ray Fluorescence Laboratory (Room 022)
Supervising staff member: Prof. Matthew Thirlwall
Dr. Christina Manning

X-Ray Fluorescence Preparation Laboratory (Room 045)
Supervising staff member: Prof. Matthew Thirlwall
Dr. Christina Manning

Computer Laboratories
Supervising staff members: Mr. Mark Longbottom
Mr. Frank Lehane

X-Ray Diffraction (Room 022)
Supervising staff member: Mr. J Brakeley

Thin Section & Rock Cutting Workshops (Rooms 009, 011 & 012)
Supervising staff member: Mr. Neil Holloway

Photography Studio (Room 219)
Supervising staff member: Mr. Kevin D’Souza
Isoprobe Laboratories (Rooms 030-032)
Supervising staff member: Prof. Matthew Thirlwall
Dr. Christina Manning

Electron Microscopy
Supervising staff member: Mrs. Sharon Gibbons

7.01 **Supervision.** A student may use the facilities in the Department when required by the course *only* under the direct supervision of one of the supervising staff for the laboratory concerned, who should be present in person. In no circumstances should you work alone in one of the laboratories.

7.02 **Coursework** involving the use of these facilities must be confined to the hours timetabled for the course concerned (although the course organiser may authorise special arrangements under 7.01).

7.03 **Independent project work** must be approved beforehand by the first-named staff member in the appropriate list above.

7.04 **Technical procedure.** Each student will be given written instructions for the experiment or analysis concerned, which must be followed to the letter. No other work should be attempted except as directed by the supervising staff member. You will be required to sign the code of practice for each Lab, as well as risk assessments. You will be required to sign a log book when entering the laboratory.

7.05 **Personal protection.** Every student using chemical facilities must wear an approved lab coat*

**Eye protection*** must be worn at all times in all laboratories that use substances covered by COSHH.

7.06 **General hygiene.** Smoking, eating and drinking are strictly forbidden in laboratories used for chemical work, because they provide an additional and unnecessary route for laboratory chemicals to enter the body.

Avoid leaning or sitting on benches, in case they are wet or contaminated.

Always wash your hands carefully on entering/leaving the chemical laboratories, particularly before/after taking food.

7.07 **Concentrated acids (but not hydrofluoric & perchloric acids)**
- Use must be confined to a suitable fume cupboard allocated to the student.
- The student *must* wear suitable eye protection and disposable gloves.
- Remember *never* to add water to a concentrated acid. Always dilute acids by adding the acid to water, slowly.

7.08 **Hydrofluoric (HF) and perchloric (HClO₄) acids** commonly used in rock digestion, are extremely dangerous reagents in inexperienced hands. *No student may use either acid at any time.* All operations involving these acids will be carried out by a supervising staff member.

7.09 **Organic solvents** commonly give off toxic, carcinogenic or highly flammable vapours. They should never be used in the open laboratory. Use and store only in a fume cupboard marked as being suitable for their use, from which naked flames and electrical heaters have been extinguished/switched off (to avoid igniting vapour). *Volatile organics must never be*

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* Available on loan from the Geochemistry laboratory, or the specific laboratory concerned.
introduced into a fume cupboard where perchloric acid has been used, as they may react explosively with its residues.

7.10 **Other hazards.** Many other dangerous chemicals are used in chemical laboratories. Laboratory apparatus can also be dangerous if used improperly. Do not tamper with anything you have not been specifically authorised to use.

This applies particularly to the specialised analytical instruments in the Isotope, ICP and XRD/XRF laboratories, which employ high voltages internally. No student should ever interfere with the internal circuitry of any instrument, or use an instrument which is under maintenance or repair.

7.11 **Accidents.** Relevant emergency action is described on posters in each laboratory. Before starting work, make sure you know the precise location of:
- fire extinguishers
- eye-wash/emergency shower equipment
- emergency instructions
- electrical mains isolator switch

7.12 **Breakages and spills.** *All spills should be reported to supervising staff immediately.*

Please report all breakages and defective or leaking containers to supervising staff immediately.

7.13 **Code of Practice.** The operation of each laboratory is governed by a Code of Practice. You will be required to read and sign if necessary. Additional copies are available.

7.14 **Warning.** Many instruments employ very high voltages, which in routine use are safely isolated inside the instrument cabinet. No student should ever interfere with internal circuits, or use an instrument that is under maintenance or repair.

7.15 **X-ray equipment** may only be used by students authorised by the Radiation Safety Officer. Each user must wear a TLD badge (radiation exposure monitor) available from the Radiation Safety Officer.

Users will be trained and supervised by one of the staff members listed for the laboratory, whose instructions should be followed carefully. The equipment has a high standard of design safety, but improper use may lead to a dangerous radiation dose.

7.16 **X-ray fluorescence spectrometer.** Student use is confined to class demonstrations and sample loading, the latter subject to the restrictions listed in 7.15.

7.17 **Rock-crushing equipment.** If you have rocks to crush, you will be given verbal and written instruction on the use of the equipment, which you should follow closely. Note that fine rock dust is a potential health hazard. Therefore make sure that the dust-extraction system is functioning properly. Masks are available and must be worn at all times when crushing rocks.

The written instructions describe the essential safety precautions appropriate to each piece of equipment. Note particularly the need to wear suitable eye protection when using machinery used for splitting and crushing rocks. *Never attempt to open or clean any electrically driven crushing equipment until it has come to rest and been switched off at the main isolator.*
8. AVOIDING PROBLEMS WHEN USING DISPLAY SCREEN EQUIPMENT (DSE)

Some users of Display Screen Equipment (DSE, also called VDUs, monitors, etc) may get aches and pains in their hands, wrists, arms, neck, shoulders or back, especially after long periods of uninterrupted work. Repetitive strain injury (RSI) has become a popular term for these aches, pains and disorders, but can be misleading. A better medical name for this whole group of conditions is upper limb disorders.

Problems can be avoided by good workplace and job design, and by the way you use your VDU and workstation.

8.01 **Get comfortable**: Adjust your chair and VDU to find the most comfortable position for your work. As a broad guide, your forearms should be approximately horizontal and your eyes the same height as the top of the VDU. Arrange your desk and VDU to avoid glare, or bright reflections.

8.02 **Keyboard use**: Adjust your keyboard to get a good keying position. A space in front of the keyboard is helpful for resting hands and wrists when not keying. Try to keep your wrists straight when keying.

8.03 **Using a mouse**: Position the mouse within easy reach, so it can be used with the wrist straight. Sit upright and close to the desk, so you do not have to work with your mouse arm stretched. Move the keyboard out of the way if it is not being use. Support your forearm on the desk and don’t grip the mouse too tightly.

8.04 **Reading the Screen**: Adjust the brightness and contrast on the screen to suit the lighting conditions in the room. Make sure the screen surface is clean.

8.05 **Posture and breaks**: Do not sit in the same position for long periods. Make sure you change your posture as often as practicable. Make sure you take frequent short breaks. 5 minutes every hour is better than 15 minutes every 2 hours.

8.06 **Laptop use**: Avoid using laptops if desktop equipment is available. Because of the smaller screen and space saving design, laptops may cause you to hunch over the screen and bend your wrists.

Make sure you are aware of your posture and try to follow the guidelines above.
Chain of command for safety matters in the Department of Earth Sciences

If you have any concerns over safety matters in the Department you should address these to the first person in the 'Chain of Command'. If you are not satisfied with the response you should consult the next person in the command structure.

Tutor or Class Student Supervisor

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Departmental Health and Safety Co-ordinator (Mr. D. Parsonage)

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Head of Department (Prof. J. Adam)

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College Safety Director (Mr. Douglas Searle)