
GUIDE TO THE SCHOFIELD CENTRE FOR NEW USERS

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INTRODUCTION:

Welcome to the Schofield Centre. It is hoped that this document will help you find your way around the Centre throughout your stay. You will be shown around the Centre by a member of staff and you are, of course, free to ask anyone at anytime if you are unsure of what to do or do not understand anything.

The Schofield Centre was opened on 11 November 2001 by Mark Whitby, the President of the Institution of Civil Engineers. The University gave its permission to name the building after Emeritus Professor Andrew Schofield FRS under whose leadership the Geotechnical Centrifuge Centre had burgeoned on the adjacent site from 1971-1998. Robert Mair, on his appointment as Professor of Geotechnical Engineering, had led the Geotechnical Group in a joint bid for JIF funding, the success of which led to the new building, which more than doubled the size of the Centre, and which gave it a new mission in Geotechnical Process and Construction Modelling. Professor Malcolm Bolton moved his office into the new Schofield Centre in November 2001 to become its first Director, having previously been Director of the Geotechnical Centrifuge Centre since 1995. The new building added about 550 m² of new ground-floor laboratory space to make a total of 1000 m², and added 170 m² of first-floor office space to make a total of about 300 m². Remarkably, this 125% expansion of space was fully utilised within the first year of operation and continues to be fully utilised. Fast response to industry-led research demands is an important facet of what we want to achieve.

The mission of the Centre is:

to advance the understanding of soil mechanics and the science of geotechnical modelling, so as to facilitate industrial collaborations leading to an improved appreciation of geotechnical processes, and thereby to innovations in design and construction.

It is our intention to serve all academic staff who wish to lead projects that can contribute to our mission.

We currently accommodate around 20 research students and provide facilities for research fellows and for 10 MEng project students and overseas visitors.

Introduction to staff:

- Prof Gopal Madabhushi – Director
- Dr Stuart Haigh – Assistant Director
- Magdalena Charytoniuk – Schofield Centre Manager
- John Chandler – Senior Chief Technician
- Kristian Pether – Senior Centrifuge Technician
- Mark Smith – Senior Centrifuge Technician
- Chris McGinnie – Senior Electronics Technician
- David Layfield – Senior Technician

The Safety Officer for the Schofield Centre is Dr Stuart Haigh

The Fire Manager for the Schofield Centre is Magdalena Charytoniuk.

The Department Environmental Co-ordinator is Magdalena Charytoniuk.

The First Aider for the Schofield Centre is Kristian Pether.

Our cleaner is Maria Thompson.

ADMINISTRATION:

1. Location of toilets:

Newer male, female and disabled toilets are on the ground floor towards the front of the open laboratory. There are older male and female toilets at the top of the back staircase by the electronics workshop.

2. Internal/external post:

At the Schofield Centre we rely on a daily courier and Purchasing Office to take mail to and from the Schofield Centre. They will collect and take back to the main Department anything to be posted internally and externally. The technicians also make trips from the Schofield Centre to the main department as and when is required in the pick-up to collect deliveries from the stores.

Within the Department the postal service is very efficient. Mail is also delivered to anywhere within the university for free, simply mark the top right hand corner of the envelope with UMS (University Messenger Service). This may however take about 2-3 days.

External mail, which is work related, can be put in the "out tray" downstairs and will be sent 2nd class unless otherwise stated on the front. Private mail will also be sent if it is already stamped.

3. Use of equipment and facilities:

- **printers:** the cost of using the colour printer is high. For draft copies use the black and white printers and always print double sided.

- **photocopier:** we have one photocopier, which is located outside Prof Madabhushi's office, which requires a job number and valid swipe card. This photocopier will scan to PDF (free), e-mailing the file back to your e-mail address and print in colour, double sided (paid service). The photocopier can also be used as a black and white printer but this facility should only be used in emergencies or for A3 printing. A driver for the photocopier can be obtained by following the instructions:

The simplest way to connect to the new printer is:

1. Click Start, then ALL Program, then Accessories and then Command Prompt.
2. Type start \\papercut\schofield and then hit "Return".
3. The printer drivers will then automatically install on your system and the name of your printer will be **Schofield on papercut**. Click next once the drivers have installed.

Please also see <http://www-h.eng.cam.ac.uk/help/printing/client.html> for help but remember to use [\\papercut\schofield](http://papercut\schofield) and not [\\papercut\printers](http://papercut\printers).

If you are having problems speak to Chris or Magda.

Please consider paper usage and use scan to PDF wherever possible. Students and Visitors can load credit on to their security card. Please see:

<http://epos.eng.cam.ac.uk/>

- **software:** all software on any computer must be licensed.

Software Licensing - Action Required by Everyone

Please read the following carefully since it is important that everyone ensures that any software they are using is being used legally.

If you are in any doubt about the legality of any software you are running, please contact one of the Department's Computer Officers for advice - the old maxim that ignorance of the law is no defence applies!

There have been several occasions recently when a Computer Officer has been asked to fix a problem on a PC and has discovered while doing so that the software on it is unlicensed. This is not something which

can be ignored by Computer Officers nor by the Department: it is illegal. It is similarly not something which the owner of the computer should be allowing to happen. ^[1]

In many cases, the problem arises because of a lack of understanding of the licensing rules, particularly over Microsoft products. For the two main Microsoft products, Windows and Office, no site licensing deal exists: each machine using them must have its own licences. There is no longer even a provision allowing non-concurrent use on two machines.

For any licensed software, the burden of proof if we were to be investigated would lie with us, both collectively and individually. We must be able to demonstrate (usually by production of a licence) that the software is licensed.

If you are responsible for a computer running software which requires a licence, you must therefore be able to prove that it is licensed. If you cannot, the only solution is to buy a new licence.

Problems tracing licences frequently arise when a computer is handed on from one person to another. It is the recipient, i.e. the current user, who is responsible for ensuring that the software is properly licensed.

The Department's Computer Officers can provide advice on the cheapest suppliers of licences for most common software. ^[2] Computer Officers can also advise on free alternatives to common licensed software, such as the Linux operating system and the OpenOffice suite.

Use of software such as Skype which acts as an internet telephone may use large amounts of bandwidth, as it will often relay other users' calls through your computer. If you use Skype, you should ensure that the program is completely exited after use, not just minimised to the system tray.

Programs such as 4 on Demand, Sky Anytime and BBC iPlayer cause large amounts of traffic even when they appear not to be running at all, and should not be installed, otherwise large fines are likely to be incurred from the Department to you the user. It is quite likely that other online TV programs will cause similar issues, so you are strongly advised to exercise caution when using such programs. To view TV programs as they are **broadcast live from your computer requires a TV licence which we do not have so do not do this.**

We also remind you that the **use of peer-to-peer file-sharing software** such as (but not limited to) KaZaA, Gnutella, BitTorrent, eDonkey and Direct Connect, which is most often used for sharing music and films, **is banned**. We also remind you that the sharing of copyrighted material, such as music and films, by any means is also prohibited, not least because it is for the most part illegal.

If you are planning on using remote access software, please inform Magda that you are doing so. The Engineering Department has no formal policy on this at the moment but are monitoring this.

[1] See the rules at: <http://www-h.eng.cam.ac.uk/help/jmrm/rules/licence.html>

[2] See also: <http://www-h.eng.cam.ac.uk/help/tpl/programs/licensing.html>

- **laptops:** if you use a laptop please make sure that the virus definitions are up to date and that before you attach the laptop to the network the hard disk is scanned for viruses. Also, obtain an IP address from Chris. Please see Chris for advice.

- **internet:** primarily for work related searches to the web. We access the internet via the main Engineering Department's servers which have their own firewall. However, be vigilant regarding security risks and computer viruses.

- **fax:** the fax machine is located in Magda's office. Place the document in the feeder face down. Dial the number and press "Start". The number of the fax machine is: 01223 760777 and is on the University network so dialling out you will require a (9).

- **scanner:** located near the tea area. Use the network to save the scanned image. See also "photocopiers" above for scan to PDF facility.

- **digital cameras:** Magda has a stock of cameras to lend. Delete all photos once you have downloaded them on to your computer and return the camera promptly when you no longer use it.

4. Backup of files:

The Engineering Department will give people space on the Department's servers to store data. Please ask the computer officers for details:

operators@eng.cam.ac.uk

It takes snapshots (incrementals) 4 times a day, of which we keep 1 per day for 3 days, 1 per week for 3 weeks, and 1 per month for 6 months.

To access your teaching system home directories from windows you need to map the network drive:

<\\file-serv.eng.cam.ac.uk\js138> (replacing js138 with your id)

When you are finally leaving the Schofield Centre having received your PhD you must remove ALL your files from your computer. Take DVD copies of your data/images and give it to your supervisor and one DVD copy for yourself.

I also suggest that from time to time you take a DVD/external hard drive or other device copy of your data for extra security.

5. Use of kitchen facilities, etc.:

There is a microwave available if you need to stay late to work and do not wish to cycle back to the town centre to eat. Tea, coffee, milk and bottled water are always available and in general most people gather in the tea area at 10.30 am and 3.30 pm for a break.

In order for these facilities to continue, it is your responsibility to keep the area clean and tidy. Put crockery and cutlery straight into the dishwasher after use and switch the dishwasher on when necessary. All utensils need to be placed with their openings face down to be washed and rinsed properly and nothing should obstruct the two spray arms. Put the dishwasher tablet in the slot, close the door, switch the ON button, choose the 50°C Eco or 65°C program plus "Vario Speed" button to shorten the washing cycle and press the "Start" button. Never open the dishwasher while ON. The washing cycle is finished when none of the displays are lit. You can then empty the dishwasher.

If you bring some lunch with you, which needs to be kept cool, feel free to use the small fridge. But please do not store more food than you need for one day and make sure that out of date food kept in the fridge is thrown away.

Keep the work surfaces clean and tidy. Use the splatter lid when using the microwave and wipe out after use.

Further facilities nearby are:

William Gates building:

<http://www.unicen.cam.ac.uk/food-and-drink/places-eat/out-university-centre/computer-laboratory-cafe-william-gates-building>

Cavendish Laboratories canteen: <http://www.phy.cam.ac.uk/intranet/services/commonroom>

Hauser Forum cafe: <http://www.hauserforum.com/cafe/>

Sainsbury's at Eddington (North West Cambridge Site)

6. Telephones:

All the telephones should only be used for making internal or local calls. Please speak to Magda if you wish to make any other type of call.

To make an external (outside the University) call, dial 9 followed by the number.

Details of how to use your phone, which is on the University network can be found next to the telephone. Useful tutorials and comprehensive user guides can be found on www.phone.cam.ac.uk. Your phone may be either the 7941G or 7961G.

NOTE: In the event of power failure the telephones will cease to function. You are advised to take your mobile with you in the event of a fire, etc.

EMERGENCY SERVICES:

Fire, Police or Ambulance dial: 9 999 or 112

For routine security dial: 31818

There are online directory enquiries at:

http://www.bt.com/directory-enquiries/dq_home.jsp and
<http://www.thephonebook.bt.com/publisha.content/en/search/international/index.publisha> for international code numbers.

7. Recycling of paper, environmental issues, etc.

Boxes are provided by the printers to place unwanted paper which is then given up for recycling.

Recycled material should be placed in the blue recycling bins by everyone's desk. There is another bin next to this bin for landfill stuff, e.g. food waste and polystyrene pellets from packaging. Plastic bottles should have their top removed, but the top and the bottle can be recycled. Please flatten the bottles and cardboard boxes before putting them in the bin.

Batteries - put in the box in the compressor room on the ground floor

Waste electrical items, e.g. computers, cables, hard discs, etc – continue to put in dolav box near consolidometers on the ground floor

Water: for preference please use a glass which can then be washed up.

Turn off lights and computers when not in use.

8. Rubbish

It is your responsibility to keep your desk space clean and tidy.

It is also your responsibility to ensure that the area of the Laboratory you are working in is kept tidy. Once you have finished an experiment please tidy your equipment away so that the next person who wishes to use the equipment knows where to find it. If you are unsure what to do with it please see John Chandler.

At the end of your studies, when it is time to leave, please ensure that everything is removed from your desk. You should discuss with your supervisor and John Chandler what to do with your equipment in the Laboratory.

MIXED RECYCLING



For further information please visit www.environment.admin.cam.ac.uk/recycling

TRANSPORT:

1. Schofield Centre bike

A bicycle is available for visitors and for students in an emergency. Magda has the key, lights and a helmet. Given the high rate of thefts of bicycles in Cambridge, it is your responsibility to make sure that the bike is securely locked to something unmoveable. In the event of the bike being stolen it will be your responsibility to replace it.

2. Car Parking

At present there is no restriction on students bringing their cars to the Schofield Centre. Please let Magda know the registration plate of your car.

3. Bicycle parking

There is an undercover bicycle rack at the side of the Centre near the covered store and bike racks around the side near to the entrance. Please do not park your bike against the white wall as it damages the paintwork. Remember to lock your bike. A good lock is a necessity! Please take care not to lock your cycle to neighbouring cycles.

British Antarctic Survey have asked me to remind you that you should not be using their car park as a short cut. There have been several incidents involving bikes from the Centre and there was nearly a very serious accident when someone from the Schofield Centre cycled into their car park roadway without lights through a no-entry sign and was nearly knocked down by a car leaving the car park. So please use the main roadway to get to and from the Schofield Centre and when it is dark always use lights.

4. Use of pick-up truck

Students may occasionally be required to drive University vehicles. Comprehensive cover is provided for all University vehicles on the condition that they are used on University business. **On no account must University vehicles be used for private motoring;** private motoring includes travel between home and the University.

Students intending to drive a University vehicle must provide a copy of their driving licence to the Department showing that they are suitably qualified to drive. A provisional licence is not acceptable. Special restrictions apply to minibus drivers. Please see Magda for further details.

It should be noted that theft from unattended vehicles is not covered under any of the University's insurances. Equipment or belongings should therefore not be left in an unattended vehicle.

In the event of an accident, students should follow the procedures which are kept in each University vehicle.

Occasionally students may be asked to use their own vehicle on University business, for which the Department will pay a mileage rate. Students will need to provide evidence to the Department that they have proper insurance. A valid insurance certificate will be required showing that the terms of the policy allow use on business and do not exclude cover for passengers (if passengers are being carried).

There are two pickup trucks located at the Schofield Centre:

Ford Ranger (managed by CSIC technician Peter Knott) can be booked as follows:

- (a) John Chandler needs to be informed and his permission granted;
- (b) the mileage is logged in the mileage book located inside the vehicle, at the start and the end of the journey, together with the driver's name and date of the journey.

The driver will have to submit a photocopy of their EU or UK driver's licence (only EU or UK driving licences are accepted) to Peter before the keys can be released.

Isuzu Rodeo – in all instances see John Chandler for permission to use.

5. Bus

The University part-funds the Route 'U' bus service, which runs from Madingley Road Park and Ride to Addenbrooke's Hospital Bus Station, via many University sites including stopping outside the main Engineering Department, and can be used for £1 per journey, by staff and students who have a valid University Card. Details of the route and timetable are provided below.

<http://www.environment.admin.cam.ac.uk/what-are-we-doing/travel/catch-bus>

Route U buses come from the Madingley Road Park and Ride site then travel through the West Cambridge Site along High Cross, Charles Babbage Road and JJ Thomson Avenue. Bus stops are located as follows:

From City Centre to Madingley Road Park and Ride

J J Thomson Avenue, outside the Whittle Laboratory.

Charles Babbage Road, just west of the raised table at the J J Thomson Avenue/Charles Babbage Road junction.

High Cross. Second lamp post north of the Charles Babbage Road/High Cross junction

From Madingley Road Park and Ride to City Centre

Charles Babbage Road, to the east of the Charles Babbage Road/High Cross junction, at the first concrete field access.

J J Thomson Avenue, just north of the raised table at the J J Thomson Avenue/Charles Babbage Road junction.

J J Thomson Avenue, opposite the William Gates Building.

6. Travel Insurance

If you are travelling on University business, for example attending a conference or seminar, you must take out the University's travel insurance policy. This is a single trip policy and can be obtained on-line at <http://www.admin.cam.ac.uk/offices/insurance/travel>.

For every travel on University of Cambridge business, the Risk Assessment needs to be completed to accompany the Travel Insurance request. Please remember about it every time you're requesting Travel Insurance:

<https://safety.eng.cam.ac.uk/workingaway/Travel-Working-Away>

FIRE AND SAFETY AT THE SCHOFIELD CENTRE:

1. Tour of building. You should have been shown around the Centre when you first arrived. If this has not happened please let Magda know.
2. Note Fire Exits.
3. The Schofield Centre operates a “No Smoking” policy anywhere in the building.
4. In the event of a fire – see Appendix 1.
5. All personal electrical appliances brought to the Schofield Centre should be PAT tested BEFORE they are plugged in to the socket. Please see Richard Adams, who will arrange this.
6. Only one extension lead can be used per one socket.

Fire Alarm Activations:

98% of attendance to fire alarms by Cambridgeshire Fire & Rescue prove to be false alarms.

Between the hours of 0900-1700, Monday to Friday (excluding bank holidays) the Fire Service will NOT respond to automatic fire alarm activations, they will only respond to someone confirming that there is a fire. Currently in the majority of University buildings, when a fire alarm activates a signal is transmitted directly to the University Security Control Centre (USCC) and they contact the Fire Service who then mobilise appliances accordingly.

From the 1 June 2013, when a fire alarm activates a signal will continue to be transmitted directly to USCC and the building evacuation procedures must commence immediately.

Within 5 minutes of the activation, providing it is safe to do so, the Fire Safety Manager or designated person/s must investigate the cause of the activation, usually by interrogating the fire alarm panel and inspecting the area of activation.

If a fire is discovered they must immediately call the Fire Service on 999 (or 1999) and notify the USCC by dialling 101.

If no fire is discovered and the cause can be confirmed e.g. dust, system fault, accidental activation the USCC must be notified by dialling 101.

If 5 minutes elapse or the cause of the activation cannot be confirmed USCC will call the Fire Service.

If the fire service has mobilised and it is subsequently confirmed as an unwanted activation, the Fire Safety Manager or designated person should contact the USCC to confirm there is no fire, USCC will then notify the Fire Service. Generally, the Fire Service would turn off their sirens and return to the fire station or may still attend the site.

ACCESS ARRANGEMENTS AT THE SCHOFIELD CENTRE:

1. The Schofield Centre is staffed by the technical staff between the hours of 8.30 am and 4.30 pm and by the administrator until around 5.30 pm Monday to Friday.
2. You will require an access card giving you 8am - 11pm / 7 days per week access to the Schofield Centre and the main Trumpington Street building. The front door to the Schofield Centre remains locked at all times. The doors on the first floor at the Schofield Centre are automatically locked between the hours of 5.00 pm and 8.00 am and all day at weekends. You cannot work in the ground floor laboratory without someone else being in the building. You will also require permission from the Senior Chief Technician to work out of hours and this requires someone to be within shouting distance at all times. A form for working out of hours can be found on the GradGuide. 24 hours' notice should be given.
3. As well as an access card you will also need a key to the front door, (number P272).
4. Upon entry to the building please sign in. When you leave please sign out.
5. When you leave the building please make sure that the windows in your area are shut. If they are required to remain open, please arrange for someone else to shut them.
6. **VERY IMPORTANT:** If you are last out:
 - a. Turn off both vacuum pumps and both compressors unless a sign is present indicating that they are being used overnight. (You were shown the positions of the switches for both sets on your tour).
 - b. Check doors and windows throughout the whole building are locked, enter the code on the security panel, and finally lock the door.
7. The Department accepts no responsibility for personal loss or damage to personal property. Please ensure that you take care of your personal belongings whilst at the Schofield Centre.
8. **Do not** let strangers without keys or entry cards into the building. All day visitors to the Schofield Centre must sign the Visitor Book located in the entrance and carry their Visitor pass with them at all times.

WORKING OUT OF HOURS:

1. Normal working hours are from 8.30 am till 4.30 pm, Monday to Friday. During these hours there is usually someone available in the laboratory. This enables a rapid response in the event that something goes wrong.

Laboratories and workshops are out of bounds to undergraduates and visitors unless they are supervised. Only authorised persons are allowed in plant and machinery rooms.

Out of Hours

For people wishing to work outside normal working hours, the following are requirements:

- A person may work alone in an office, on paperwork, without special permission of any kind.
- All those working out of hours are expected to have a good working knowledge of the Emergency Procedures, since they may be the first to discover something that requires action.
- The risk assessment for any work other than office work must have taken account of the increased risk of working out of hours. **ONLY** those with the requisite skills may work out-of-hours. **ONLY** those who have secured the agreement of the Technicians may work out of hours.
- No-one may work alone in a laboratory area - there must always be someone within calling distance who would know what to do in the event of an emergency.
- Anyone working late in the laboratories (anywhere downstairs + electronics workshop) must get a late working form signed. **IN ADDITION, THEY WILL PUT THEIR MOBILE PHONE NUMBER, NAME, AND DATE ON THE WHITE BOARD AND DECLARE THEIR LATE-WORKING**

LOCATION IN THE BUILDING, SO ANY SECURITY OFFICER ENTERING THE BUILDING WILL KNOW WHERE THE WORKER IS. Laboratory working is only permitted if two people are present. If one person has to leave for any reason, the other person MUST return to the office area.

- Any person who thinks they may be the last to leave must apply due diligence to the task of checking. THEY SHOULD SWEEP THE TOP FLOOR, BOTH SIDES, TURNING OFF LIGHTS, CLOSING DOORS, AND CHECKING THE TOILETS. THEN SWEEP THE SIDE LABORATORIES VIA THE BEAM CENTRIFUGE CONTROL ROOM, THE CALIBRATION ROOM AT THE FAR END, AND THE MAIN LABS - TURNING OFF LIGHTS. FINALLY, CHECK THE GROUND FLOOR TOILETS, AND HAVE A LAST LOOK UPSTAIRS TO MAKE SURE NO ONE HAS ENTERED DURING THE TOUR. Only then set the alarm, close and lock the door.

BUYING EQUIPMENT

1. Job Numbers

1. To buy every piece of equipment you will need a job number. Please make sure you use the correct one which can be obtained from Magda or your supervisor.

2. Purchasing

- a. Before goods or services are obtained from outside the Department, a CUED Purchase Requisition should be set up.
- b. Online requisitions and purchase orders in the Department should be created using the EDRS (Engineering Department Requisition System <https://edrs.eng.cam.ac.uk/>). This page gives information on Departmental use of EDRS and details the procedures which must be followed. Requisitions which do not conform to these will be returned by the Department's Purchasing Office.
- c. At the Schofield Centre purchasing can be made by the following people:

Magdalena Charytoniuk, John Chandler, Stuart Haigh, Kristian Pether, Chris McGinnie, Gopal Madabhushi, Giovanna Biscontin.
- d. Please fill in the Purchasing form which can be obtained from one of these people and ask one of these people to place the order for you.

3. Purchasing thresholds

The [University's Financial Regulations](#) require supporting documentation to be provided for purchases above certain thresholds. The Department's thresholds are different from the University's, and are the ones to be used when raising requisitions in the Department. The following table shows the Departmental thresholds.

Order value (pre-VAT)	Supporting documentation required
Under £1000	No quotation required
£1,000 - £25,000	Three competitive quotes unless it is a marketplace order
£25,000 - £50,000	Either three competitive quotes or three written proposals required, depending on complexity, risk and value of the purchase - contact the Purchasing team to discuss
Over £50,000	Three invitations to tender - contact the Purchasing team to discuss
EU Threshold, (goods and services) 1st January 2018 £181,302	EU Tender - contact the Purchasing team to discuss
EU Threshold, (works) 1st January 2018 £4,551,413	EU Tender - contact the Purchasing team to discuss

Where the above steps are not followed the legal position is that the purchase has been made not by the University, but by the individual. The individual who placed the order must pay the expense incurred as a private transaction and then you may reclaim by means of an expense claim form. Details of which can be found at:

<https://www.researchandfinance.eng.cam.ac.uk/finance-purchasing/gen-finance-mgt#expense-claims>

4. Return of goods

If you need to return goods to the supplier for whatever reason, the supplier must be contacted and authority obtained before the return can be made. This authority is normally given a Returned Material Authority (RMA) number. All returns are to be made via the Purchasing office. This will ensure the completion of all required documentation and enable “proof of purchase” to be provided for the items to be returned

Some items of stationery can be obtained via Magda.

5. Claiming back expenses

- a. Persons wishing to claim for reimbursement of expenses should complete the appropriate form [available at the Research and Finance Office website: <https://www.researchandfinance.eng.cam.ac.uk/finance-forms>] and send it to the Finance Office showing clearly to send the cheque to the Schofield Centre (for ease of return).
- b. This form is to be used for all expenditure including travel and subsistence. Claimants should read the reverse of the form, which gives details of the current rates, which are revised annually on 1 August [current rates]. If the expenditure being claimed is from a research grant, full details of the grant codes and categories should be supplied. Please see Magda for more details.
- c. Note that the form **MUST** be authorised by someone other than the claimant. Forms must be completed in sterling - foreign currencies may be shown in narrative boxes and should be converted at the rate shown in the Financial Times.

6. Getting things done in the Main Engineering site Workshops

There have been a number of problems with things being made in the Workshop. We have therefore adopted the following procedure which should be followed:

- a. Any drawings produced for the workshops should be made carefully, be fully calibrated Engineering drawings using a programme such as Pro-Engineer, and should be reviewed by a 2nd person.
- b. A quotation/price for the work should be obtained from the Workshops for the work BEFORE the work is submitted.
- c. Once a quote has been received, a job number should be sought from Magda or your supervisor.
- d. Once the work is with the workshops any modifications made to the work once it is submitted should be noted and a price obtained for the extra cost. These details should be given to Magda.

GRAD GUIDE

An on-line guide to the Geotechnical group can be found at:

<http://www-geo.eng.cam.ac.uk/gradguide>

This web site provides:

- useful direct links to on-line geotechnical journals,
- standard forms used when planning projects,
- links to a variety of geotechnical literature and information services,
- a description of the faces and facilities of the research group.

Creation of own Web Page

Please create your own web page as soon as feasible. Look at the web pages of other people in the Group to get an idea of what to say. The geotechnical group WebPages are the public face of the Group and we usually have at least 100 visitors to the site everyday.

An entry for you has been created on our geotechnical and environmental research group webpage (<http://www-geo.eng.cam.ac.uk/>).

Please feel free to complete your biography and upload a picture of yourself.

To do this you will need to:

- Open the webpage (see link above)
- navigate your way to the list ('People' tab > 'Graduate Students' or 'Visitors' on the top menu),
- select your name from the list,
- login (top right hand corner 'Log in' – use your raven username and password (this should have been setup for you),
- select the 'edit' tab,
- you should be able to upload your picture on the 'basic information tab' (click the save button at the bottom of the screen before exiting the page),
- enter your biography by clicking on the 'professional information' tab.

You are welcome to logon anytime you like to update your photo and information about yourself.

Contact Jen Flack or Magdalena Charytoniuk if you are having problems or need further information.

ROSCOE LIBRARY

The Roscoe library is a collection of geotechnical literature which was originally established by Professor Roscoe in the 1960s. Subsequently, material has been donated by Professor Schofield and others, and the collection now includes both reports and journals. Mengchen Sun is the student in charge of the Roscoe Library this academic year.

Much of the material in the Roscoe Library is IRREPLACEABLE and provides an archive of soil mechanics history. It is therefore of some importance that:

1. NO ROSCOE LIBRARY MATERIAL IS TO LEAVE THE BUILDING EVER, and
2. No Roscoe Library material is to be kept on a desk for long periods of time.
3. A library of PDFs of our Geotechnical theses is being created. Those theses which now have a PDF can be found on the Schofield Centre network on the computer ARCHIVE_III:

\\ARCHIVE_III\Literature\Cambridge Theses & MPhils

JOURNALS RECEIVED AT SCHOFIELD CENTRE or can be accessed on-line

Some on-line journals can be accessed through a link on the Gradguide links page.

EXPERIMENTAL TESTING

We aim to improve our procedures for equipment development and project planning so as to minimise unforeseen delays, optimise our use of technician time, and clarify to everyone what is going on. This applies to all projects which aim to use substantial technical resources, and especially to physical modelling projects at the Schofield Centre. The procedures are as follows:

1. **Project Approval Document (PAD)** (downloadable from the Grad Guide)

A **Project Approval Document (PAD)** is to be created by the **research worker** who will do the job, and will be **countersigned** after having been approved by the **project leader**, and by an **Authorised Engineer**. The purpose of the PAD is to collect together all information required for Risk Assessment. It becomes an attachment to the **CUED Risk Assessment** form, together with **COSHH** forms on the use of hazardous substances (if applicable). The PAD collates the necessary additional information on physical modelling requirements such as centrifuge package balance and safety checks, and details of robotic actuators.

The departmental risk assessment should be completed by the student and supervisor and a copy returned to the department safety office before work commences. Our increasing interest in chemical modification of soils, and in contaminant migration and remediation processes. Chemical safety is the responsibility of the project leader and a COSHH form will need to be signed off by them. The PAD is signed by an Authorised Engineer named on a current list (see Appendix 2) approved by the Director. Every draft PAD will be the subject of a discussion between the Project Leader, Chief Technician, and Authorised Engineer. The Director or Assistant Director must approve any permanent modifications to the facilities. Projects should have a PAD in place so that the technicians are aware of the objectives of the experiment, knowing the job number and timescales involved PLUS the SAFETY HAZARDS. Once all the signatures are in place please give copies to the Chief Technician and Senior Engineer and retain a copy for your own records.

Each PAD should refer to a test series, rather than an individual test and will include:

- names of project leader (supervisor) and experimental worker (student)
- aims and objectives
- design of experimental rig
- soil preparation techniques
- data requirements
- analysis of hazards, risks and controls
- list of personnel required and authorised to fix and run the experiment
- outline centrifuge balance calculations, setting a range of expected values
- drawings of package, naming items, showing key dimensions

The use of pre-existing authorised documents to demonstrate safety issues is permitted if there is no uncertainty about their relevance. A photocopy of another research worker's PAD or balance calculations may be provided by the Chief Technician, who will advise on the correct identification of equipment to which reference is being made. Care must be taken to identify containers individually by name, colour, etc. and a check carried out on their reported weight, if previous calculations are to be taken as relevant.

2. **Project Schedule (PS)** (downloadable from the Grad Guide)

A **Project Schedule (PS)** must be created by the **research worker** following discussions between the **research worker, the project supervisor, John Chandler and Stuart Haigh**. The PS will typically aim to cover 6 to 12 months work, but it must be **updated regularly** - e.g. **after** every significant test, and **before** every significant modification to equipment. It will include separate items for the **design / manufacture / calibration / proof testing / use** of equipment, and will focus on the **technical assistance** which will be requested, and the **sequence** of activities. Dates can be requested for the completion of tasks, but the optimum organisation of the Group's resources might require variations. Resource scheduling is carried out every week at the **Monday Management Meeting** held at the Schofield Centre, at which we refine the plan for the following month's work by the Group's technical team. All current PS sheets will be taken into account, together with background tasks such as equipment refurbishment and maintenance. **Magdalena Charytoniuk** will circulate to the Group the minutes of these weekly meetings, so that

everyone can see how their own work should progress. It is understood that small (e.g. one hour) jobs will often be unpredictable and will need to be fitted in without the need for advanced warning and planning; some slack in technicians' schedules will allow for this.

3. Experimental rigs will be designed to show certain minimum safety margins. Critical load combinations during authorised testing will be established. Ductility and continuity will be maximised in the design of the soil containment. A document "Design of Safe Centrifuge Packages" covers essential information and can be found on the Gradguide.
4. **No experimental work will be carried out by anyone working alone in the laboratories. The use of cranes, machine tools and the fork lift truck is restricted to technicians.**
5. Before each centrifuge test, the experimental worker will demonstrate that the centrifuge should remain in balance, as defined by the PAD. The project leader will ensure that an independent check is carried out. Unless the mass distribution is inherently evenly balanced, a sketch of lumped masses and centres of mass of named components will lead to a manifest which demonstrates moment balance (mass x radius) throughout the test. Calculated out-of-balance during long tests is permitted only within these tolerances:

- 10m beam centrifuge – 5kg at 4m radius at 125 g (or pro rata)
- 2m drum centrifuge – 2kg at 1m radius at 350 g (or pro rata)
- 0.8m drum centrifuge – 1kg at 0.4m radius at 350 g (or pro rata)

The drum centrifuges can be filled with soil up to the top of their ring channel. The beam centrifuge can accept a 900 kg package on a swing, to work at 125 g. An Authorised Technician will record the actual weights of all discrete packages and assemblies introduced on to a rotor, and will check them against the manifest.

6. Two Authorised Users, as named in the PAD, will be present in a centrifuge control room to monitor appropriate sensors when certain critical operations are carried out:
 - speed is raised
 - water is supplied
 - actuators are operated

One person will act as the Authorised Research Worker responsible for the data and the other as the Authorised Technician responsible to the Director for safe and efficient working of the Centre. A current list of Authorised Users will be posted at the Centre. Students and visitors will not initially be Authorised Users.

In view of the importance of correct monitoring, the research worker will demonstrate the success of their data acquisition system to their supervisor, and to the authorised technician, at least two days before a test. Significant readings will be output onto digital displays. Significant control switches will be labelled. The authorised technician will monitor the speed of the machine, and check the level of noise, vibration, and bearing temperature, where applicable. One Authorised User may be left in a control room to monitor safety if no critical operations are carried out; a second Authorised User must be on call in the Centre.

7. The Director may exceptionally give permission for a drum centrifuge to be operated in the absence of personnel. In this case, access to the machine room will be barred, and a warning notice will be posted. An experimental worker desiring to interact with the experiment must be accompanied, as indicated in rules 3 and 5 above.
8. Packages and other critical components which are to be centrifuged for the first time, or which are to be used at a higher acceleration than their previous maximum, should be subjected to a proof test at an acceleration 25% higher than that requested for normal testing. In the case of a proof test the Engineer authorising the PAD will also be present. Items which will be limited to a working acceleration less than the maximum working value listed in rule 5 will be marked clearly with that limiting acceleration.
9. Lasers will be used only as agreed by the Chief Technicians – users of Class 3 lasers and above must register for eye tests, and ALL users of lasers must wear safety goggles.

10. It is the responsibility of everyone at the Centre to work safely, to report apparent hazards or faults immediately to a technician, and to discuss with the Director any concerns that they may have regarding their use of the Centre.
11. When working in the Laboratory you should wear long trousers (not shorts), shoes (not open toed sandals) and should not be wearing a tie.
12. At the end of a centrifuge test a Centrifuge Test Report should be produced. This will give details of the aims of the centrifuge test and the degree to which they were met. Particular emphasis should be placed on areas in which the experimental equipment did not perform adequately in order that it can be modified for subsequent tests. Any transducers which fail during the test should be returned to Chris McGinnie for repair or replacement.

The PAD, Centrifuge Balance calcs, Junction box setup and Centrifuge test report forms can be found in the Grad Guide.

Timetabling of beam centrifuge tests take place at a meeting of the Centre staff and students once a term. If you have any concerns regarding the scheduling, please speak to your supervisor and Magdalena Charytoniuk.

It is vitally important that you liaise with the technicians regarding your experiment, so that they are fully aware of you aims, expectations and timescale. Without this dialogue they will be left in the dark.

COMPUTER NETWORK

1. Most people at the Schofield Centre are allocated a pc with access to the network.
2. Chris has details of IP addresses and network settings if you wish to connect your laptop to the network as well.
3. Magda will provide you with a login/username on the network.
3. **Before connecting a laptop to the network it is essential that you run a disk provided by Chris which will check for viruses.** ALL computers must have McAfee VirusScan installed and set to AUTO UPDATE. These can be downloaded from the Computing Service website.

MICROSCOPE/ACCUSIZER ROOM

This should be kept locked at all times except when in use. If you wish to use the room please see either Gopal Madabhushi, John Chandler, Magdalena Charytoniuk or Stuart Haigh.

Instructions for use are displayed in the room.

SAFETY: hazards, risks and rules

What is a **hazard**?

- a potentially dangerous or damaging influence:
 - machinery, vehicles, centrifuges, power tools.
 - electricity, loose or exposed wiring.
 - chemicals, radiation, lasers, X-rays.
 - air-borne dust, especially silica.
 - falling objects, heavy lifting, pits.
- includes individual behaviour:
 - carelessness, disregard of safety rules.
 - untidiness, eating or drinking in dirty conditions.
 - smoking.

What is a **risk**?

- the possibility (degree of probability) that some hazard will actually cause damage.
- risk assessment should be carried out by everyone proposing to do something.
- the circumstances should be assessed as a whole, together with any control measures.
- the perception of risk is subjective, and every individual should assess their own safety.

What is a **control measure**?

- a provision introduced by a responsible staff member to reduce the risk of some hazard.
- examples – covers on machines or electrical wiring, fume cupboards, protective clothing, dust masks.
- it is your individual responsibility to use the control measures responsibly.

What is a **rule**?

- responsible staff members will set rules for safe conduct so as to reduce particular risks to acceptable levels.
- types of rule include:
 - limits on behaviour, e.g. not working alone in a laboratory after hours.
 - authorisations, e.g. checking design of test rigs and approval of test procedures.

What other **resources** exist?

- The Little Green Safety Book.
- University Safety Manual, COSHH Regulations, etc.
- Documents on the use of: centrifuges, lasers, pressure systems, cryogenics, ionising radiations.
- The Departmental Safety Officer (Mr Ian Slack).

Who to **ask**?

- In planning work, discuss with your supervisor.
- In justifying your safety, discuss with the staff member responsible for that laboratory.
- If there is an immediate anxiety or accident, report it to a technician.

- If there is an emergency requiring first aid - contact a first-aider, Kristian Pether or Richard Adams.
- If there is a fire: hit the nearby alarm – “break glass”.

This is your **responsibility**:

- This handout is an example of the introductory safety training you may eventually have to give your own staff.
- Construction is the most dangerous sector of industry.
- Civil Engineers have a duty to respect CDM and HSE regulations on construction safety.
- Limit State Design concerns the recognition of hazard scenarios and failure mechanisms.
- You should undertake a Risk Assessment Exercise on your own activities.

SUPERVISORS AND ADVISERS

All research students carry out their work under the direction of a supervisor, who is normally a member of the Department of Engineering academic staff, but may occasionally be a member of the research staff. The duty of your supervisor is to guide your research, and to keep an eye on your progress towards completing your dissertation. He or she will meet you on a regular basis, and will make suggestions about the initial direction of the project, and provide assistance and advice as and when necessary. Your supervisor will also advise you about attendance at courses and conferences, and will help you to decide on the next stage of your career after the PhD. It is most important that you keep in close touch with your supervisor, especially if you are 'stuck'.

While individual supervisors may vary in their approach, it is generally expected that you will meet your supervisor at least once a week in your first year; and that you produce a report on your work at regular intervals. In the second year, you and your supervisor should agree a programme of regular meetings, at least once a month. The frequency of these meetings would depend on your progress. The third year (and fourth year if necessary) would take this a stage further with meetings being arranged according to need, but at least once a month. At this final writing stage, you should be producing drafts of sections of your thesis, which the supervisor will be able to read and comment on.

The supervisor will write regular reports on CGSRS (the Cambridge Graduate Supervision Reporting System) which you will be able to view on CamSIS. If you have difficulty finding your reports, you should contact the Graduate Secretary. The supervisor will keep a record of your meetings and progress. Supervisors are often busy, so it is best to be proactive in your approach: if you need help and your supervisor seems elusive, do not hesitate to seek him or her out! An email message is often a good way of making contact.

Besides your supervisor, you will also be allocated an Adviser at Engineering, who may be another senior member of your research group. This is someone you can contact for additional help and support. This person will normally also be one of your assessors for your first year report. It would be expected that you would see your Adviser on a regular basis. If by the end of your first term you do not know who your Adviser is, then ask your Supervisor in the first instance, or the Divisional Administrator.

ATTENDANCE IN THE DEPARTMENT

Experience has shown that coming to the Schofield Centre on a regular basis is extremely beneficial for the progress of a student's research. Accordingly, you are expected to keep regular hours, and to be present in the Centre for a substantial part of each weekday, for example 0900 to 1730 or 1000 to 1830. Attendance is not expected at weekends or in the evenings (though you may, of course, come in if you wish, although not in the Lab). You are entitled to holidays (normally 6-8 weeks per year in total) and you are urged to take some holiday every few months to provide a proper break from study.

Please keep your supervisor informed if you are going to be away for an extended period, for whatever reason. Any planned absence of more than 2 weeks must be discussed with the supervisor in advance, and also your College Tutor if you are an international (non-EU) student, since the immigration regulations require the University to keep track of students' movements more closely. Good communication is a firm foundation for a fruitful working relationship.

SEMINARS, COURSES AND CONFERENCES

Because Engineering is a large department, there are many seminars every week, in term time at least. Each group has a weekly seminar, and there are other seminar series of more general interest. You will be expected to attend the specialist seminar related to your research area, and other more general seminars on offer (normally Thursday afternoons between 4.00 and 5.30 pm).

Going to scientific conferences is regarded as an important part of the training of research students (see below), and the Department will normally support your attendance at three meetings (national or international) during your three years. You will be expected, though, to try to get at least partial funding from your College, the Department or from your funding agency. You should discuss with your supervisor which conferences you should be attending. Prior approval to attend any conferences or to work away must be sought from your supervisor. A reimbursement form can be obtained from Magda which you can have approved after your travel.

Your first conference visit will usually be as an observer, but later you will be expected to present a poster or paper as appropriate. Some financial support may also be obtained from the Cambridge Philosophical Society, which all research students are urged to join.

PROGRESS OF RESEARCH

Most student funding lasts for three years, and you are expected to complete your research and submit your dissertation no later than the end of your tenth term. In the first year you will be mainly reading the literature and attending courses while working on an initial 'starter problem'. In the next 18 months you will be carrying out the main calculations that will form your thesis, and the final 6-9 months in writing up. Your University fees will be automatically remitted from the tenth term onwards. You may be able to get some help with maintenance: from your funding body; from your College; and also funds are available from the Cambridge Philosophical Society (see above). It is essential that you submit your thesis before the end of your fourth year, when you will automatically be removed from the Register. If you think that you may have difficulties in meeting this deadline, you must discuss this with your supervisor at the earliest possible opportunity.

While your supervisor is available for advice and direction, you have the final responsibility for writing and submitting the dissertation, and for checking that the work in it is free from error. The work presented must be your own; if some of the material has been produced in collaboration, this must be declared, on a form available from the Board of Graduate Studies. Your supervisor can advise you in doubtful cases.

RESEARCH TRAINING AND TRANSFERABLE SKILLS TRAINING (TST)

The purpose of graduate study is not just to produce a brilliant thesis, but also to learn the skills which will allow you to have a successful career, whether in research and teaching, or beyond academia, for example in industry. Your supervisor, as well as helping you on the creative side, will be responsible for much of your training, by helping you to acquire the skills needed to survey the literature, show you how to organise your work and how to keep records, and to present your results in a clear and coherent way.

Other aspects of research training and TST are addressed as follows:

Presentation skills:

Your work must be communicated to be effective. You learn communication skills primarily by giving talks and using feedback to make improvements. Different research groups at Engineering have different ways of organising this aspect of your training.

Towards the end of the first year the annual Geotechnical and Environmental workshop is held. The event is sponsored by Atkins and you will be expected to present your research work to the group.

At the same event towards the end of the second year you will be expected to produce a poster of your research work and discuss it with the Head of Division, Atkins, and your colleagues.

In the third year, it is expected that you will give a full-length seminar at Engineering and a seminar at another institute and/or a talk at a conference.

Courses on writing and presentation

The Research and Communication Club co-ordinated by Professor Abir Al-Tabbaa takes place in Michaelmas and Lent terms.

APPENDIX 1

Fire Instructions

IF YOU DISCOVER A FIRE:

Immediately operate nearest fire alarm call point.

Between the hours of **0900-1700, Monday to Friday** (excluding bank holidays) the Fire Brigade will **NOT** respond to automatic fire alarm activations, they will only respond to someone confirming that there is a fire. After 5 minutes of the fire alarm ringing the Fire Brigade will respond.

Leave the building immediately upon hearing the alarm. Outside working hours telephone Security on 31818 or 999 to confirm that there is a fire in which case the Fire Brigade will come immediately.

If it is a false alarm then telephone Security on 31818 and tell them so.

Attack the fire, if possible, with the appliances provided but without taking personal risks.

FIRE ALARM AND EVACUATION PROCEDURE:

Proceed to the assembly point at:-

GRASS VERGE BY SCHOFIELD CENTRE ENTRANCE

USE THE NEAREST AVAILABLE EXIT.

DO NOT STOP TO COLLECT PERSONAL BELONGINGS

DO NOT RE-ENTER THE BUILDING

NOTE: The Local Fire Manager (Magdalena Charytoniuk) will take charge of any evacuation

WHEN DEALING WITH FIRE:

If a person's clothing is on fire, wrap a blanket, rug or similar article closely round them and lay them on the ground to prevent flames reaching the head.

If electrical appliances are involved, switch off current before dealing with the fire. Do not use water type extinguishers.

Shut the doors of the place in which the fire is discovered. If possible shut windows and switch off power, gas and water.

IT IS IN YOUR OWN INTERESTS:

- to study this notice, to know what to do in the event of fire and how to use the fire appliances.
- to make yourself familiar with all means of escape in the case of fire.
- avoid creating any obstructions of staircases, landings and other escape routes at all times.

OUTSIDE CONTRACTORS PLEASE NOTE:

- make sure if creating dust or fumes that detectors are isolated. Failure to do so which results in the Fire Brigade being called out on a False Alarm will result in a fine.

APPENDIX 2

SCHOFIELD CENTRE - AUTHORISED BEAM CENTRIFUGE USERS - 11 June 2018

1. The following are Authorised Centrifuge Engineers who may take responsibility for countersigning a Project Approval Document (PAD) submitted by a Project Leader:

Prof Gopal Madabhushi (Director)
Dr Stuart Haigh (Assistant Director)
Dr Mohammed Elshafie

2. In addition to the Authorised Centrifuge Engineers the following may act as Project Leaders:

Prof Abir Al-Tabbaa
Emeritus Professor Malcolm Bolton
Emeritus Professor Robert Mair
Emeritus Professor Andrew Schofield

3. The following may act as Authorised Centrifuge Technicians who take responsibility for the safe mechanical operation of centrifuges at the request of the Director:

Mr John Chandler
Mr Kristian Pether
Mr Mark Smith

4. The following may act as Authorised Centrifuge Technicians who take responsibility for the safe mechanical operation of centrifuges at the request of the Director for specific tasks:

Prof Gopal Madabhushi
Dr Stuart Haigh

5. The following are Authorised Electronics Technicians who may represent the project leader during the firing of earthquakes on a centrifuge:

Mr Chris McGinnie

6. The following are Authorised Centrifuge Research Workers who, in addition to the Authorised Engineers, may work unsupervised with an Authorised Technician to conduct centrifuge tests. In earthquake tests Prof Madabhushi, Dr Haigh or an Authorised Electronic Technician will be present to ensure safe operation. In every case the person acting as an Authorised Research Worker will have been named as such in the PAD covering the test in question.

Talia da Silva
Srikanth Madabhushi
Fiona Hughes
Deryck Chan
Jad Boksmati

7. The following are listed as research workers on centrifuges, but they should be accompanied by an authorised user during testing.

Chuhan Deng
Thejesh Garala
Andrei Dobrisan
Samy Garcia-Torres
Vipul Kumar
Alessandro Fusco