

# Space Management Policy

## (3) Vacating Rooms Policy

Valid from March 2019

(Please check the Space Planning website to ensure that this document is still the latest version)

UNIVERSITY OF STRATHCLYDE  
TIMES HIGHER EDUCATION AWARD WINNER  
**BUSINESS SCHOOL OF THE YEAR 2016**  
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## < Aim >

The aim of this document is to describe the process by which departments and/or third party occupants vacating rooms can ensure that the space they vacate is safe for those subsequently accessing it e.g. a new department, maintenance staff, contractors refurbishing the space etc. As part of this procedure guidance is provided on the expected practices necessary to decommission and/or decontaminate areas ranging from both low risk offices to higher risks areas such as laboratories and workshops.

## < Process >

For departments to conclude the room vacation process, the Head of Department must nominate a member of staff to manage it and to sign off the relevant checklist(s) to confirm that vacated rooms have been cleared of all department materials and are safe for occupation by a new department, maintenance staff, contractors etc.

The signing off process requires departments to ensure:

1. Office spaces are cleared of all items used or owned by the department and/or third party occupants.
2. Laboratory areas that have used chemical, biological, or radioactive substances have been appropriately cleared/decontaminated, disposed of and decommissioned prior to vacating the area.
3. All accessible work surfaces, fixtures and fittings within laboratories have been properly decontaminated, leaving them safe and without risk to anyone likely to access the area following vacation of the room.

**NOTE:** In some cases it may not be possible to confirm an area is free of contamination (e.g. chemical fume cupboards) and a residual risk may still exist. In these cases, Estates Services must be made aware of this in the decommissioning checklist and Departments should assess the likely risk based on their historical records and knowledge.

4. The relevant decommissioning checklist(s) have been completed, signed off and submitted to Estates Services, (and OHS&W where necessary,) to ensure there is a clear and concise audit trail of all actions taken to ensure room clearance and decontamination.
5. After vacating rooms, all room door keys, cupboard keys and furniture keys must be returned to Estates Services.
6. Only after all relevant checklists have been completed, signed and returned to Estates Services along with all keys and Estates Services have inspected the room will the room allocation be removed from the department in the Space Management Database along with the requirement to pay any future space charges.

The following three checklists have been provided to assist departments with completing the process of vacating offices, laboratories and workshops.

**For the avoidance of doubt this procedure applies to all third party occupants of rooms and all references to “Departments” also includes “Departments and/or third party occupants**

## < Vacating and / or decommissioning department rooms >

These four checklists and three appendices have been prepared to assist Departments with the process of vacating existing rooms.

**Checklist 1:** Applies to general offices

**Checklist 2:** Applies to laboratories or workshops

**Checklist 3:** Applies to the relocation of work equipment to a different laboratory or workshop

**Appendix 1:** Lab Decontamination and Decommissioning Procedures.

**Appendix 2:** Cleaning of Fume cupboards

**Checklist 4:** Fume cupboard Cleaning Record

**Appendix 3:** A flowchart illustrating the Department and Estates Services actions and payment responsibilities when rooms are vacated.

It is the responsibility of the vacating department to ensure and to pay for all department items removed from all rooms that are to be vacated including all offices spaces, storage areas, kitchens, cupboards etc. Departments wishing to leave any items behind other than office furniture can only do so with explicit written prior agreement from Estates Services.

**Note:** Any items left behind after vacating a room, which have not been explicitly agreed in advance and in writing with Estates Services, will be removed by contractors. All costs associated with this will be charged to the department and/or third party occupants. Departments leaving room clearance to Estates Services may incur costs at premium rates due to contractors working out-of-normal hours working to meet project timescales etc.

## Checklist 1: Vacating General Office Rooms

<b>Building</b>	
<b>Room number(s)</b>	
<b>Responsible person</b>	

<b>Action required: Remove all</b>	<b>Completed by</b>	<b>Date</b>	<b>Checked by</b>	<b>Date</b>
All confidential Waste (files, folders, records)				
All books, posters, department booklets, CDs & DVDs etc.				
WEEE waste - Electrical & Electronic Equipment				
Telephones				
Stationary including printer cartridges, paper, batteries etc.				
Crockery, glassware, kitchenware etc.				
All general waste – paper, cardboard etc.				
Any surplus photocopiers should now also be returned to Procurement.				

**Declaration:** This room has / These rooms have (*delete as necessary*) been cleared of all department materials and is / are safe for any personnel to enter. This checklist does not cover issues under the control of Estates Services, e.g. asbestos, mains gas, water, electrics, etc. Contact Estates Services before initiating work relating to any these issues.

**Head of Department (or designate)**

Signed.....

Print Name.....Position.....Date.....

**Estates Services Representative:**

Signed.....

Print Name.....Position.....Date.....

## Checklist 2: Laboratory Decommissioning Checklist

<b>Building</b>	
<b>Room number</b>	
<b>Responsible person</b>	

<b>Action required: Remove all</b>	<b>Completed by</b>	<b>Date</b>	<b>Checked by</b>	<b>Date</b>
All, chemical and biological radioactive materials to be removed from the laboratory (including cupboards, drawers, under sinks, fume cupboards, etc.)				
All gas cylinders to be removed				
All laboratory coats and other PPE to be removed				
All hazardous waste to be removed to store and accompanying S15 submitted to Hazardous Waste mailbox <a href="mailto:hazardous.waste@strath.ac.uk">hazardous.waste@strath.ac.uk</a> & OHS&W				
All hazard warning labels, signs, documentation etc. to be removed				
All sinks cleaned (biological areas to be disinfected, (including taps and drains)				
All benches to be cleaned and biological areas to be disinfected.				
All relevant equipment to be cleaned, disinfected and removed.				
All microbiological safety cabinets to be fumigated with written confirmation or evidence of decontamination to be available to Estates Services and OHS&W				
All fume cupboards to be cleaned with fume cupboard history / use to be provided Estates Services and OHS&W				
All radioactive materials to be removed appropriately and the Radiation Protection Officer to be informed of final decontamination list and the destination of all materials.				

All clinical waste to be removed via the Clinical Waste service by submitting the standard Clinical Waste pro-forma (CW1) to <a href="mailto:clinicalwaste@strath.ac.uk">clinicalwaste@strath.ac.uk</a> via the clinical waste stream.				
All laboratory glassware, containers, vials etc. to be removed.				

**Declaration:** This laboratory has / These laboratories have (*delete as necessary*) been left in a safe condition for any personnel to enter without taking any precautions against exposure to chemical, biological or radioactive material.

This checklist does not cover issues under the control of Estates Services, e.g. asbestos, mains gas, water, electrics, etc. and they should be contacted before any work relating to these issues is initiated.

**Head of Department (or designate)**

Signed.....

Print Name.....Position.....Date.....

**Estates Services Representative:**

Signed.....

Print Name.....Position.....Date.....

**Sent to Occupational Health Safety & Wellbeing**

(OHS&W).....Date.....

### Checklist 3: Relocation of Equipment to a Different Laboratory / Workshop

<b>Department:</b>	<b>Date of Move:</b>
<b>Current Location:</b>	<b>Responsible Person:</b>
<b>New Location:</b>	
<p>This checklist is designed to remind department staff of various questions that may need to be considered when re-locating work equipment to a different laboratory or workshop, the answers to which will:</p> <ul style="list-style-type: none"> <li>• Help to inform the assessment of risks</li> <li>• Allow work equipment to be suitably located, without unnecessary delay</li> <li>• Help a re-location to run smoothly and safely, and</li> <li>• Improve efficiency.</li> </ul> <p>Responsible persons are encouraged to amend and / or expand this checklist to fully address the requirements, work activities and accommodation specific to their department.</p>	

Ref.	Topic or Issue	Applicable ✓ Not Applicable (N/A)	Comments
<b>1.0</b>	<b>Isolation of Services</b>		
1.1	Can services such as electrical power, water, compressed air, compressed gas etc. be isolated in a safe manner by department staff or does this require the expertise of Estates Services?		
<b>2.0</b>	<b>Disassembling of Equipment</b>		
2.1	Will equipment be disassembled by departmental staff?		
2.2	If so, have safe methods of working been devised based on the significant findings of suitable and sufficient risk assessments?		
2.3	If not, who will arrange for external specialist assistance and liaise concerning an exchange of health and safety information?		
<b>3.0</b>	<b>Packing of Component Parts</b>		
3.1	Will component parts be packed by departmental staff?		
3.2	If so, have safe methods of working been devised based on the significant findings of suitable and sufficient risk assessments?		

Ref.	Topic or Issue	Applicable ✓ Not Applicable (N/A)	Comments
3.3	If not, who will arrange for external assistance and liaise concerning an exchange of health and safety information?		
<b>4.0</b>	<b>Disposal of Redundant Items</b>		
4.1	Have arrangements been made for the appropriate disposal of redundant items e.g. research samples, substances, chemicals, equipment, materials etc.?		
<b>5.0</b>	<b>Decontamination</b>		
5.1	Have arrangements been made to test for relevant contaminants, and where found, to ensure decontamination before vacating, in accordance with University procedures? Contact OHS&W for details.		
<b>6.0</b>	<b>Transportation</b>		
6.1	Has safe <b>egress from</b> the current location been considered in terms of doorways, corridors, steps, lifts etc.? Do any issues need to be referred to Estates Services or removal company?		
6.2	Has safe transportation been considered in terms of outdoor routes and routes in public spaces and across roads etc.?		
6.3	Has safe <b>access to</b> the new location been considered in terms of lifts, steps, corridors, doorways etc.? Do any issues need to be referred to the relevant project manager or removal company?		
6.4	If transportation is by departmental staff, have safe methods of handling been devised based on the significant findings of suitable and sufficient manual handling risk assessments?		
<b>7.0</b>	<b>Inspection of New Location</b>		
7.1	Does it appear that facilities have been provided according to the specification agreed with the department?		
7.2	Can a scaled drawing or diagram be obtained from the relevant project manager from Estates Services, which indicates fixtures and fittings mentioned at 7.4 below?		

Ref.	Topic or Issue	Applicable ✓ Not Applicable (N/A)	Comments
7.3	Are the physical dimensions, including ceiling height, sufficient to house the equipment to be re-located? Do any issues need to be referred to the relevant project manager?		
7.4	Have the <b>locations</b> , and where applicable the <b>functioning</b> , of the following been noted in relation to the <i>best positioning of equipment, assessment of risks and 'snagging'</i> :		
7.5	Light switches		
7.6	Light fittings		
7.7	Lighting motion detectors		
7.8	Electrical sockets		
7.9	Wall-mounted emergency stop buttons		
7.10	Visible cable trays		
7.11	Telephone points		
7.12	Heating controls		
7.13	Radiators		
7.14	Visible pipework		
7.15	Compressed gas/air supplies		
7.16	Water supplies		
7.17	Isolators for services		
7.18	Audio & visible alarms (e.g. laser on, O <sub>2</sub> depletion)		
7.19	Smoke/heat detectors		
7.20	Fire call-points		
7.21	Fire-fighting equipment		
7.22	Ventilation inlets, outlets and controls		

Ref.	Topic or Issue	Applicable ✓ Not Applicable (N/A)	Comments
7.23	Windows that open and do not open		
7.24	Direction of natural light		
7.25	Floor surfaces		
7.26	Wall surfaces		
7.27	Ceiling material and surface type		
7.28	Benches, cupboards, sinks etc.		
7.29	Storage areas (for stocks, waste etc.)		
7.30	Fume cupboards and microbiological safety cabinets		
7.31	Display areas, notice boards		
7.32	Noisy equipment or services plant		
<b>8.0</b>	<b>Unpacking of Component Parts</b>		
8.1	Will component parts be unpacked by departmental staff?		
8.2	If so, have safe methods of working been devised based on the significant findings of suitable and sufficient risk assessments?		
8.3	If unpacking is by others, who will make arrangements and liaise concerning an exchange of health and safety information?		
8.4	Have suitable arrangements been made to avoid the unnecessary storage, as well as the safe, prompt and appropriate disposal of packing materials?		
<b>9.0</b>	<b>Re-assembly of Equipment</b>		
9.1	Will equipment be re-assembled by departmental staff?		
9.2	If so, have safe methods of working been devised based on the significant findings of suitable and sufficient risk assessments?		
9.3	If not, who will arrange for external specialist assistance and liaise concerning an exchange of health and safety information?		



# Appendix 1: Lab Decontamination and Decommissioning Procedures

Information and additional details for key (identified) personnel to be aware of prior to starting decontamination / decommissioning procedures.

## 1. General

- 1.1. The Principal Investigator (PI) or a suitable and appropriate senior person should be assigned responsibility for each lab / area that has been previously, or is currently, used for biological, radioactive and chemical work.
- 1.2. If the time between vacation and demolition is very short, the process should start as soon as possible and the department should put together a planned and scheduled timetable of the activities and timescales required. Where possible, Occupational Health, Safety & Wellbeing (OHS&W) should be given a copy of this.
- 1.3. Where necessary appropriate Risk Assessments should be carried out not only for biological, radioactive and chemical work but all hazards should be considered (e.g. electrical, manual handling) for the processes to be carried out. For a decontamination / decommissioning campaign, some hazards may be different due to compressed timescales and this may present more opportunities for things to go wrong.
- 1.4. Ensure all materials and equipment needed for the cleaning processes are readily available e.g. disposable gloves, blue roll, waste bags, labels, swab counting materials, lab plan, marker pen, "decontaminated stickers/labels" to confirm areas once cleaned, suitable monitoring equipment, detergent, buckets, plastic sheeting, tape, suitable boxes for storing and transporting cleaned biological samples and equipment and ancillary materials from the lab, labels for boxes, identifying contents, where they have come from, where they are going to and who has packaged / signed off the box.
- 1.5. Any areas deemed to be a 'higher' risk (e.g. uncertainty in previous use, uncertainty in decontamination, use of higher activities of unsealed materials) should be identified.
- 1.6. All information from file history, surveys, etc. should be retained in a decommissioning file, as this may be required by the Scottish Environmental Protection Agency (SEPA) in the case of regulated materials and may also be important for the future.
- 1.7. Estates personnel or contractors may be asked to open sink traps, access piping or duct work etc. to allow monitoring. A Risk Assessment must be carried out for this work in consultation with SS, Estates Services (ES), Department and the RPA (for radioactive work) and be read and signed by those carrying out the work.
- 1.8. ES must be informed by the Department that the area cannot be accessed for refurbishment until written confirmation is provided to OHS&W by the Department and that regulated materials have been appropriately transferred and/or disposed of and the areas have been appropriately decontaminated.

## 2. Department Duties

- 2.1. Search the entire lab (including fridges and freezers), to ensure that there are no stocks or samples of radioactive, biological or chemical material remaining.

- 2.2. Dispose of any remaining radioactive samples or transfer these to a designated radiation area. Ensure no objects are disposed of with radioactive warning marking (tape or label) attached, unless they are being disposed of via an agreed / authorised radioactive waste disposal route.
- 2.3. Provide information on isotopes, biological agents and chemicals used previously.
- 2.4. Provide information on designated sinks, MSc's and fume cupboards.
- 2.5. Provide records of disposal and monitoring surveys undertaken for radiation and any other biological agent requiring such records.
- 2.6. Remove and dispose correctly of items such as benchkote, cinbins, glassware etc.
- 2.7. Wash bench, incubator and fume cupboard surfaces with suitable detergent (e.g. Decon / Virkon).
- 2.8. Steep sinks and traps with suitable detergent (e.g. Decon / Virkon) and flush through with water.
- 2.9. Swabs reading for radioactivity should be background; if not appropriate remedial action should be taken until area cleaned. If contamination still present specialist advice should be obtained from RPO/RPA.
- 2.10. Swabs reading for biological activity should be negative; if not, appropriate remedial action should be taken until the area cleaned. If contamination still present specialist advice should be obtained from DSC/BSA.
- 2.11. Forward a copy of the decommissioning log to OHS&W and retain a copy, along with all other relevant documentation and previous contamination monitoring records within the Dept.

#### **Departmental Safety Convenor / Radiation Protection Officer / etc. / Duties**

- 2.12. Co-ordinate any specialist help.
- 2.13. Co-ordinate RPA visits.
- 2.14. Ensure no refurbishment is carried out until the area is free from contamination.
- 2.15. Provide advice on disposal routes, monitoring procedures.
- 2.16. Liaise between all concerned groups.

### **3. Chemical Decontamination**

Appropriate Personal Protective Equipment (PPE) must be worn suitable for the work to be done. This will normally be lab coat, safety glasses and gloves.

Where biological or radioactive material has been stored refer to the guidelines on biological/radioactive decontamination before proceeding.

#### **3.1. Fume cupboards**

- 3.1.1. When embarking on a process of chemical decontamination it is necessary to gather as much information as possible on the use, past and present of the fume cupboard concerned, and where possible to review the substances used within the fume cupboard. The primary agent used to decontaminate for chemicals is soap and water therefore the purpose of this is to ensure that any substances incompatible with water can be identified and alternative ways of decontaminating found. It is recognised however that not all chemicals can be identified.
- 3.1.2. Prior to decontamination all equipment, containers etc. must be removed from the fume hood and all surfaces inside the hood scrubbed down with warm soapy water. If there is a sink within the fume hood this should be rinsed with copious amounts of water, preferably leaving the tap on for several minutes.

### **3.2. Benches and Worktops**

Clear all chemicals and equipment from worktops and benches. Use soap and water to wash down worktops, shelves and any other surfaces where chemicals have been used or stored.

### **3.3. Sinks**

Ensure copious amounts of water is used to washed down sink and drains to ensure any residual chemicals left in the sump/pipes are fully washed away. Wash down sink and surrounding area with soap and water.

### **3.4. Electrical**

Disconnect any electrical equipment prior to decontamination. Use soap and water to clean all accessible parts of the equipment ensuring that water does not interfere with the integrity of the electrical equipment.

### **3.5. Fridges and Freezers**

The contents of the fridge should be packed into suitable cool box containers for transportation. Otherwise any waste material should be disposed of through the hazardous waste route. The inside walls must then be washed down with soap and water.

### **3.6. Pipettes and small equipment**

- 3.6.1. Dispose of in the normal way by completing an S15 and disposing through the hazardous waste route.
- 3.6.2. Once a full wash down has been completed all items should be clearly labelled indicating what treatment they have undergone.

### **3.7. Waste chemicals**

Where the department identifies that chemicals require to be disposed of then the Hazardous Waste Adviser should be informed at least four weeks before removal is required, particularly where large quantities of unwanted chemicals are involved. This will allow for timeous removal of chemicals prior to vacating the laboratory. Use the S15 form and guidelines to dispose of such waste.

### **3.8. Chemical Procedures**

- 3.8.1. Empty and check all lab, fridges, freezers, cupboards and store areas for chemicals. Notify OHS&W immediately if any unexpected unauthorised biological material is found.
- 3.8.2. Transfer all chemicals to alternative, suitable and authorised chemical designated storage areas.
- 3.8.3. Dispose of ancillary lab waste items via the appropriate route e.g. unwanted chemical waste to the hazardous waste stream
- 3.8.4. Ensure any items that are NOT chemically contaminated and are suitable for disposal to normal domestic waste have any chemical warning markings (labels or tape) removed.
- 3.8.5. Appropriate PPE, such as lab coat, glasses and gloves should be worn at all times.
- 3.8.6. All small items of equipment should be washed down or if suitable, steeped in a solution of appropriate detergent for at least 24 hours, then rinsed and dried.

- 3.8.7. Identify all areas that have been cleaned and deemed free of chemical contamination by a visual mean e.g. label.

## **4. Biological Decontamination**

### **4.1. Microbiological Safety Cabinets (MSC)**

- 4.1.1. If there is any suspicion that pathogenic agents have been used in the cabinet following the previous maintenance check then the cabinet should be sterilised using formalin vapour. This will have a threefold effect of sterilising the cabinet, filters and ducting. This is an ideal time to sterilise all pipettes and small equipment that may have become contaminated over time by placing this material strategically in the cabinet so that they are effectively sterilised without comprising the sterilising process of the cabinet.
- 4.1.2. If cabinets are being disposed of, the sterilised filters can be removed and sent via the clinical waste stream for disposal.
- 4.1.3. All MSC's being moved over to the new building will have to be re-commissioned and tested - new filters should be installed as part of the process.
- 4.1.4. If, however, the agents used have not been of a pathogenic nature, then a full wipe down of the cabinet with 1% Virkon solution, followed by 70% Ethanol should suffice.
- 4.1.5. If in doubt at all, use formalin vapour! Remember, these cabinets will be dismantled either to transfer to the new building or to be disposed of. We have a duty to those who are carrying out this process to ensure that no risk is involved from any biological agents to their health and in the case of disposal, to the environment.

### **4.2. Centrifuges, buckets, rotors etc.**

- 4.2.1. All centrifuges should have their rotors plus buckets removed and swabbed thoroughly with 15 Virkon solution.
- 4.2.2. Buckets can be soaked in Virkon but if metallic, this must only be for a maximum of 10 minutes. This should be followed by a thorough wipe down using 70% Ethanol to remove the Virkon and ensure sterility.
- 4.2.3. Water baths should have a 1% Virkon solution added and the mixer switched on for 10 mins on to ensure all external working parts of the water bath have been decontaminated. The water bath should then be rinsed out and wiped down with 70% Ethanol.

### **4.3. Incubators**

- 4.3.1. All Incubators should be carefully disconnected from their gas supply.
- 4.3.2. If the incubator is for disposal, and has been used for any Class 2 tissue culture or propagation, then the incubator should be sterilised using formalin vapour.
- 4.3.3. If, however, the incubator will be moved to the new building and re-used, then DO NOT use formalin as the paraformaldehyde residue gets trapped in the filter and cannot be easily neutralised. A thorough swabbing using 1% Virkon solution should be used, followed by swabbing with 70% Ethanol and all trays and removable components should be autoclaved if possible.

#### 4.4. Fridges and Freezers

- 4.4.1. All fridges should be emptied of their contents and the interior of the fridge swabbed down with 1% Virkon. This is an ideal opportunity to dispose of out of date or unwanted / unlabelled / unknown items. These should be disposed of appropriately either by autoclaving, if a biological hazard, or through hazardous waste if chemical. If the fridges are being disposed of or moving to the new building and they have been used for the storage of biological material, then the interior should be swabbed and plated out on the appropriate growth medium to ensure no contamination remains.
- 4.4.2. The contents of the fridge should be packed in suitable cool box containers for transportation.
- 4.4.3. All freezers should be clear of all material prior to defrosting. As above, take the opportunity to dispose of unwanted / unlabelled / unknown items and dispose of appropriately. When the freezer is fully defrosted, the remaining liquid in the bottom of the freezer should be treated with powdered Virkon to form a solution and left for at least 30 minutes or overnight preferably to allow total kill of any possible contamination. The solution can then be absorbed with paper towels, bagged and autoclaved.

#### 4.5. Fixture and Fittings

- 4.5.1. **Sinks:** There should technically be no need to decontaminate any of the sinks from a biological perspective as no contaminated material should have been rendered to general drainage before being made safe.
- 4.5.2. **Benches:** All benches should be swabbed down with 1% Virkon solution followed by 70% Ethanol spray.
- 4.5.3. **Light/Socket Switches:** As a precaution, all switches that could have possibly been contaminated should be swabbed with 1% Virkon solution with care being taken to avoid any liquid coming into contact with electrical sources.

All of the above equipment should have post disinfection swabs taken and plated out on appropriate growth medium to ensure that no residual contamination remains. If positive results are obtained, then repeat the decontamination procedure.

#### 4.6. Biological Procedures

- 4.6.1. Empty and check all lab, fridges, freezers, cupboards and store areas for biological materials. Notify OHS&W immediately if any unexpected unauthorised biological material is found.
- 4.6.2. Dispose or transfer all biological stocks and samples to alternative, suitable and authorised biological designated storage areas.
- 4.6.3. Dispose of ancillary lab waste items via the appropriate route e.g. biological contaminated tips etc to the clinical waste stream.
- 4.6.4. Ensure any items that are NOT biologically contaminated and are suitable for disposal to normal domestic waste have any biological warning markings (labels or tape) removed.
- 4.6.5. Appropriate Personal Protective Equipment (PPE), such as lab coat, glasses and gloves should be worn at all times.
- 4.6.6. All small items of equipment should be washed down or if suitable, steeped in a solution of appropriate disinfectant for at least 24 hours, then rinsed and dried.

- 4.6.7. Post disinfection swabs should be taken and if not appropriate remedial action should be taken until area cleaned. If contamination is still present, following cleaning, specialist advice should be obtained from Departmental Safety Convener (DSC) / Biological Safety Adviser (BSA).
- 4.6.8. Identify all areas that have been cleaned and deemed free of contamination by a visual means e.g. label.

## **5. Radiation Decontamination**

### **5.1. General**

- 5.1.1. The assigned individual should work in collaboration with the appointed Departmental Radiation Protection Supervisor (DRPS) and OHS&W' Radiation Protection Officer (RPO) to ensure that a suitable programme of decontamination and decommissioning is scheduled and carried out for each defined area where work with radiation sources takes place (radiation area). Each programme should take account of the applicable points below.
- 5.1.2. All associated work activities should be risk assessed and accompanied by a safe method of working, based on the significant findings of relevant risk assessments.
- 5.1.3. In order to demonstrate that a radiation area is free from contamination, departments will be required to provide OHS&W with a Decommissioning Report that captures pertinent information, including a summary of its operational history, recent disposals of radioactive stocks, recent transfers of radioactive stock to new locations, results of contamination surveys, findings of assessments carried out by the external Radiation Protection Adviser (RPA) that consider the likely contamination of unrevealed surfaces (if applicable), actions taken to decontaminate the area and confirmation of decontamination etc. Please contact the RPO for further details.
- 5.1.4. OHS&W will give prior notice to the Scottish Environmental Protection Agency (SEPA) about each decommissioning programme, so one of their inspectors may wish to witness various aspects of the decommissioning process. In addition, OHS&W will provide SEPA with a copy of the Decommissioning Report.
- 5.1.5. The PI and DRPS should review all previous radioactive work undertaken at relevant locations, including, risk assessments, stock records, disposal records, past contamination monitoring records and applicable sinks or fume cupboards that were designated as routes for radioactive waste disposal. This information should be compiled into an Operational History section of the Decommissioning Report mentioned above. It will help determine the necessity for, and type of contamination surveys and/or other risk control measures that may be required over and above any normal procedures.
- 5.1.6. Decide which radioactive stocks are to be disposed of and ensure that any disposal will not exceed the monthly Authorisation assigned to the department by OHS&W under the University's Certificate of Authorisation from SEPA. If in doubt, check with the DRPS.
- 5.1.7. Identify appropriate and suitable locations to store any radioactive stocks that are to be retained. It is important to ensure that such stocks can be held within the new location under the University's Certificate of Registration from SEPA. Again, if in doubt, check with the DRPS.
- 5.1.8. If it is necessary to transfer radioactive materials from the building in which they are normally used, then please contact the RPO in case the requirements of the Carriage of Dangerous Goods and Transportable Pressure Equipment Regulations, 2009 (CDG09) need to be complied with.

- 5.1.9. Detailed contamination surveys should be carried out for all radiation areas; all results, and if applicable, subsequent actions for decontamination should be documented. Any contamination should then be removed as far as practicable.
- 5.1.10. Where a department is unable to carry out a contamination survey, then the RPO will make arrangements for a specialist to carry this out. Any reports produced will be copied to the department, OHS&W and ES.
- 5.1.11. Based on the Operational History and the results of contamination surveys, the RPA will advise on whether previously unrevealed surfaces (e.g. ducting, pipework, below linoleum, etc.), or non-surface materials (e.g. demolition rubble) will require to be monitored, in view of likely contamination. All advice, criteria, and processes used should be documented as part of the Decommissioning Report.
- 5.1.12. A radiation area sometimes presents significant challenges to the decontamination and decommissioning process, for example, it is extremely large, some parts are difficult to access (pipework, ductwork), there are additional hazards, such as asbestos, or access routes are restricted. In such cases, all parties concerned (PI, DRPS, ES, RPO and RPA) should discuss the issues and consider employing an external specialist waste contractor to carry out the necessary work, which would then be co-ordinated by the RPO.
- 5.1.13. If a radiation area has been cleaned, as far as practicable, but still has spots of detectable contamination then the RPO / RPA should be consulted with regard to definitions of radioactive waste under the Radioactive Substances Act 1993 (RSA93), the requirement to demonstrate that any residual / fixed contamination is below the RSA93 threshold and the most appropriate method of removal and/or disposal.
- 5.1.14. If it is envisaged there will be serious problems with disposals or the clean-up then the RPO will seek advice at the earliest stage from the appropriate SEPA inspector.

## **5.2. Example list of items that need to be checked and cleaned**

This is not an exhaustive list of items for inclusion in the cleaning programme so departments should add to it, as necessary.

- 5.2.1. Fixtures and Fittings
- Sinks and drains
  - Cupboards
  - Benching / worktops
  - Walls
  - Fume cupboards (see below)
- 5.2.2. Benching, cupboards, store areas, walls, door handles etc. should be washed down with a suitable solution of detergent e.g. Decon 90.
- 5.2.3. Sinks should be flushed continuously for as long as reasonably possible to dilute any radioactive material present. However, the time needed will depend on the types, amounts and activity levels of radioactive materials that have been disposed of down the sink. Each affected sink trap should then be removed and steeped in a suitable solution of detergent for at least 24 hours.
- 5.2.4. Monitoring / sample checks should be carried out after cleaning and the results documented in the Decommissioning Report.

### **5.3. Large Equipment – Movable**

- Microbiological safety cabinets
- Scintillation counters
- Centrifuges
- Incubators
- Fridges, freezers

- 5.3.1. Equipment should be washed down in a solution of detergent (if suitable for the equipment type), then rinsed and dried.
- 5.3.2. It is known that aqueous solutions of tritiated compounds stored in a freezer can contaminate the ice therein due to the release of tritiated water vapour through radiolysis. Thus, care should be taken when defrosting such freezers. Appropriate measures should be put in place to check for contaminated water and then to correctly dispose of it, as well as to clean, swab and monitor accessories such as trays, buckets etc. and the floor.
- 5.3.3. Monitoring / sample checks should be carried out after cleaning and the results documented in the Decommissioning Report.

### **5.4. Large Equipment – Generally Fixed and Non-movable (e.g. Fume cupboards)**

- 5.4.1. All easily accessible equipment should be washed down in a suitable solution of detergent (if suitable for the equipment type), then rinsed and dried. If in doubt about whether the detergent is suitable, contact the manufacturer of the equipment.
- 5.4.2. Floor space may be required for storing equipment parts, once these have been dismantled by contractors. Items may also require to be wrapped and sealed in plastic sheeting to prevent potential spread of contamination. This operation may need to be carried out by specialist contractors with subsequent disposal arrangements put in place. The RPA would be involved in such an assessment.
- 5.4.3. Monitoring / sample checks should be carried out after cleaning and the results documented in the Decommissioning Report.

### **5.5. Small Equipment**

- Water baths
- Pipettes
- Centrifuge buckets, rotors etc.
- Monitoring instruments
- Storage receptacles e.g. Perspex containers, lockable cash boxes,

- 5.5.1. All small items of equipment should be washed down or if appropriate, steeped in a solution of suitable detergent (e.g. Decon 90) for at least 24 hours, then rinsed and dried.
- 5.5.2. Monitoring / sample checks should be carried out after cleaning and the results documented in the Decommissioning Report.

## 5.6. Other Items

Before any storage bin, used for radioactive waste, is transferred to the University Radiation Waste Store or another location, it must be swabbed, checked for contamination and, if necessary, cleaned. Any amendments should be updated on the SPIDER database.

## 5.7. Radiation Decontamination – Practical Procedures

- 5.7.1. Before commencing, consult the department's safe system of work and adhere to all its preventive and protective measures.
- 5.7.2. Identify the locations of all radioactive materials in labs, fridges, freezers, cupboards and store areas etc.
- 5.7.3. Ensure that all sources held on the department's inventory are accounted for. Notify the RPO, immediately if any unexpected radioactive sources are found.
- 5.7.4. Dispose of, or transfer, all radioactive stocks and samples to alternative, suitable, authorised and designated radiation storage areas.
- 5.7.5. Ensure all accounting records on SPIDER are updated to reflect changes.
- 5.7.6. Dispose of ancillary waste items via the appropriate route e.g. radioactive contaminated tips etc. to the radioactive solid waste stream.
- 5.7.7. Ensure any items that are NOT radioactively contaminated, and are suitable for disposal to normal domestic waste, have any radiation warning markings (labels or tape) removed prior to disposal.
- 5.7.8. Wearing appropriate Personal Protective Equipment (PPE), as may be specified in the safe system of work, wash down all accessible areas of benching, worktops, drains, etc. with a suitable detergent solution such as Decon 90.
- 5.7.9. If safe to do so, wash down or steep, all small items of equipment in a solution of detergent for at least 24 hours, then rinse and dry.
- 5.7.10. Designated radioactive sinks should be flushed continuously for as long as reasonably possible. The sink trap should then be removed and steeped in Decon 90 for at least 24 hours.
- 5.7.11. Measure the background radiation and take background swabs.
- 5.7.12. Depending on the radioactive materials that were previously stored / used / disposed in the area(s), swab wipes should be taken from all accessible areas including benches, floors, equipment, fixtures and fittings (e.g. door handles) and counted in a scintillation counter (e.g. for 14-C and 3-H contamination), or direct contamination monitoring with an appropriate mini monitor instrument e.g. for 125-I and 32-P.
- 5.7.13. For the contamination survey, the surveyor should: prepare a sketch of the radiation area; record the background radiation against which to compare any detected contamination; record the results of contamination against applicable locations on the prepared sketch; physically mark the results in the radiation area itself, using a marker pen or tape; record any inaccessible parts not surveyed e.g. pipes, penetrations, ducting etc.. Please note, in the case of inaccessible parts, an area cannot be deemed as decontaminated until these have been accessed and the RPO should be consulted for advice.
- 5.7.14. Use the results of the contamination survey to assess what areas require cleaning, decontamination and/or further monitoring.

- 5.7.15. Swabs readings should be equal to background readings; if not, then appropriate remedial action should be taken until the area is clean. If contamination is still present, following cleaning, specialist advice should be obtained from RPO/RPA.
- 5.7.16. Clearly mark all areas that have been cleaned and deemed free of contamination by a visual measure e.g. using labels.

## Appendix 2: Cleaning of Fume cupboards

Fume cupboard Number.....

Room Number.....

Fume cupboards should be cleaned of any spillages as they occur, but should be subject to a “Deep Clean” every 3 years. This should be completed by the finishing PhD student for research labs or by a member of research staff.

### 1. Materials to be used

- 1.1. Disposable body suits (to be submitted to HWS as contaminated paper after the cleaning operation has taken place)
- 1.2. Face mask, suitable for dealing with particulates. Please ensure you contact your Face fit Advisor or OHS&W for advice on this.
- 1.3. Chemically resistant gloves along with Nitrile gloves
- 1.4. Face visor and/or safety glasses
- 1.5. Decon solution 50:50
- 1.6. Scourers and or long handled scrubbing brushes

### 2. Procedure

- 2.1. Fume cupboard should be emptied of all materials and the vented cupboard below should be disconnected.
- 2.2. The fume cupboard should be switched off at the isolator. If the fume cupboard is a “Slave” or “Master” then both cupboards should be made safe.
- 2.3. Any scaffolding should be removed and cleaned if necessary.
- 2.4. Scaffolding supports should be removed to allow access to baffle.
- 2.5. Baffle should be removed, to allow access to back panel.
- 2.6. The Decon solution should be sprayed on liberally and allowed to soak in for some time.
- 2.7. The Decon should be removed using the Fume cupboard water supply. For tough areas, a scourer, or scrubbing brush may have to be utilised. (These will possibly have to be included in the HWS return)

Continue steps 2.6 & 2.7 above, until the fume cupboard is clean.

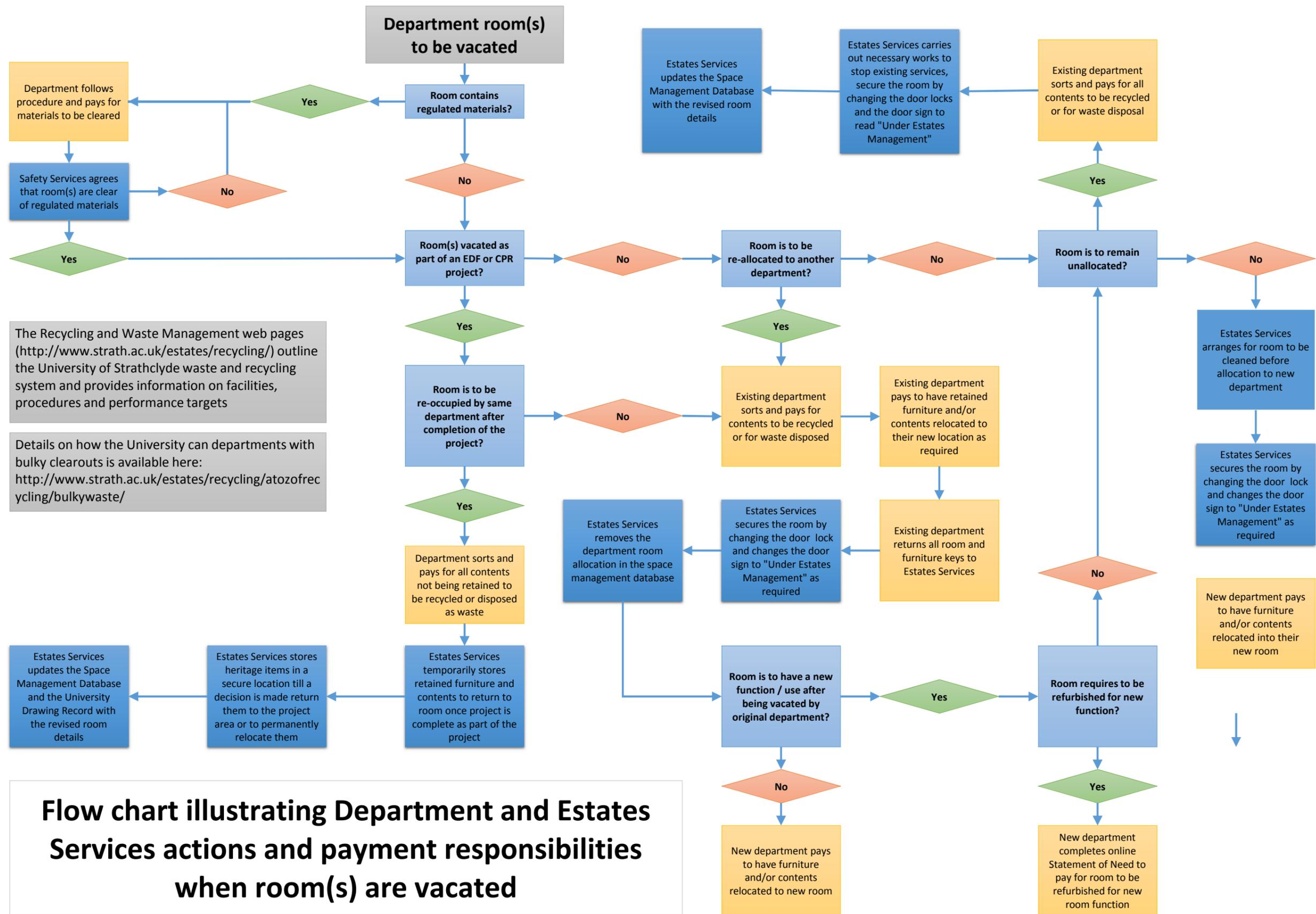
Replace the back baffle, scaffolding support and scaffolding, re-connect the vented cupboard and return the Fume cupboard to normal operation.

### 3. Disposal

All contaminated waste, paper, disposable suits, dust masks, scourers etc. should be double bagged and marked a contaminated chemical waste. This should go to the HWS for disposal. Complete the attached log in checklist 4 and obtain a counter signature from your supervisor/floor technician or Laboratory superintendent.



## Appendix 3: Flow chart illustrating Dept and Estates Services Responsibilities



**Flow chart illustrating Department and Estates Services actions and payment responsibilities when room(s) are vacated**