



Aston University
Birmingham



Estates & Capital Developments

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DRAFT DOCUMENT

**Contractor Procedure for the Control &
Suppression of Dust, Fumes & Vapours**

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Forward:

This document and associated appendix has been developed by Aston University to be used in conjunction with their Safety Code of Practice for Contractors.

The aim of the document and its appendix is to control the potential risks to health, safety and welfare that could ensue from the production of dust, fumes or vapours whilst carrying out works / projects within the buildings and campus of the University.

This document will supplement and provide further detail to a number of sections within their Safety Code of Practice for Contractors, those sections being as follows:

Section 3: Before Starting Work

Section 8: Risk Assessments and Method Statements

Section 9: Auditing / Monitoring

Section 25: Demolition

Section 32: Hazardous Substances and Materials

Section 31: Site Housekeeping

When using this document's detailed system and procedure reference should be made to all appropriate sections of the Safety Code of Practice for Contractors applicable to any works / project being carried out.

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1. Introduction:

The production of dust, fumes or vapours emitted or developed during any refurbishment, upgrade or construction works, can if not appropriately controlled have wide ranging effects on staff, students and members of the public.

The production of dust, fumes or vapours will have a wide variance of effects on people, as no two individuals are alike in their tolerance or reaction to these air borne particulates.

A percentage of the population suffer from conditions affecting the respiratory system, the dermis (skin), eyes and digestive system, which can be exacerbated or irritated by exposure to dust, fumes and vapours. Within these groups there are individuals that can and do have violent reactions to a wide range of substances or conditions.

Some forms of dust and fumes are known to cause serious medical conditions such as silicosis and other lung diseases even cancer.

In light of this potential risk, Aston University has undertaken the development and implementation of systems of controls, checks and balances to prevent any harm or injury occurring to its staff, students and members of the public who visit the University premises.

The University in its educational and business undertakings carries out work, developments or procedures that could be adversely affected by dust, vapours and fumes. If these undertakings are affected by the uncontrolled production of dust, fumes or vapours, it could result in substantial lose of revenues to the University

Likewise the University posses and uses large numbers of pieces of equipment, some of which is sensitive to dust, fumes or vapours. Again if any dust, fumes or vapours are produced and not appropriately controlled, this also could have detrimental affects for the University and its revenues.

The University have taken these steps to further ensure that its endeavours comply with Environmental Legislation, ensuring controls are in place that prevent the intentional or unintentional release to the atmosphere any dust, particles, fumes or substances that could affect the environment as a whole or any person in particular.

2. Requirements of Principal and Sub Contractors:

Any program of works, project or undertaking on behalf of the University is required to be Risk Assessed. This is detailed in the University document Safe Code of Practice for Contractors (*section 8*), which supports and upholds Health and Safety Legislation and Regulations throughout.

In any operation or undertaking that has the potential to produce dust, vapours or fumes. The University require that an appropriate and sufficient Risk Assessment is carried out.

This should be for any operation or undertaking that has cause to use, any substance or material of any nature. These substances and materials risk assessments must be carried out using and in conjunction with applicable Hazard Data Sheets or applicable manufactures / suppliers information.

The University further require that the risk assessments also use the **University Risk Matrix Form (see Appendix A)** in the formulation / development of risk control measures detailed in the Safe System of Work (Method Statement) that will detail the task and the use of the substance / material within it.

3. The risks:

The use of any substance or materials during undertakings which contain or produce levels of respirable fumes, vapours or dust or that produce fumes or vapours that can through exposure affect the eyes and throat. Are a risk that can in most instances be measured and provide information of the level of that risk to health and safety. However these levels may when recorded, be within the acceptable parameters detailed in EH 40 Standards but still have affects on some individuals.

The University has a large number of staff and students passing through its buildings daily, these individuals are further supplemented by the many visitors to the University Campus. All of these persons differ in many ways and one of them is their tolerance to and ability to cope with levels of fumes, vapours and dusts. Some of those persons cannot tolerate even the acceptable levels or standards and react to lower levels or standards.

Along with the risks of potential exposure there are the further risks of Fire and Explosion.

These risks become likely when dust, fumes and vapours are produced from work / project activities.

It is well known that dust in appropriate amounts and levels provide a combustible medium, when left to build up both on surfaces and within the air as clouds. Given the right circumstances dust in the air can if ignited produce an explosive blast especially in confined space working this could be a room with a closed door. This situation may develop when sanding of masonry material, walls and wood is occurring.

Fumes and vapour may be produced as both a by product or directly from the product or materials being used. These are normally non flammable/ non ignitable, however there are materials / substances that have the potential to produce flammable / ignitable fumes and vapours. Dependent upon the material / substance used and its produced fumes or vapours, there is a potential difference in ignitable flash points (the temperature at which the material / substance or its fumes / vapours may ignite at).

Again these fumes or vapours have the potential risk of fire or explosion. This risk can be further increased by the amount of fumes or vapours that are allowed to build up within a given area, with a higher potential risk in smaller spaces.

Any machinery that may be used for what ever reason is another potential risk. As machinery could have to be placed in areas or positions that are trafficked or used by persons other than the Contractor work force. There are a wide number of risks that could be present / develop in this situation, ranging from electrical shock, impact injury through to restriction of passage.

Contamination from dust, fumes and vapours is also possible of and to equipment, departments and processes and procedures undertaken within the University. Throughout the University a wide range of equipment is used, ranging from computer hubs and mainframes to sensitive laboratory equipment. Contamination of this equipment in any form could result in considerable cost as well as commercial damage to the Universities undertakings. Running along side this contamination of any nature is a high risk to a wide range of processes and procedures carried out by various University Faculties, especially within the laboratory environment as contamination here could have very serious consequences.

It is knowing that these potential risks could be present that the University require that all risks are identified, assessed and controlled to the best possible and achievable level, ensuring that the lowest number of individuals and or situations at all times that could be affected, exposed or put at risk is achieved.

4. The Systems:

The University requires that the system detailed is adhered to at all times when works / projects have the potential to produce any dust, fumes or vapours.

The system requires that all requisite regulatory processes are carried out and that these processes along with any further controls are undertaken and put in place prior to any works / projects that

The following steps and action must be undertaken by the Principal Contractor / Sub Contractor with every works / projects carried out:

1. That all Hazard Data sheets relating to the substances / materials that will be used on works / projects are obtained.
2. If the works / projects will or has the potential to produce dust, fumes or vapours. This must be identified in one or more generic forms (silica dust, brick dust, wood dust, paint fumes, liquid vapour, etc.) and this detailed in a manner similar to a hazard data sheet.
3. That any other available information or detail relating to the works / project must be obtained. This may include any substance registers, Health and Safety Files of previous works / projects that have taken place in the proposed works / project area. As an example this could be an asbestos register, works / projects specification or project plan
4. A suitable and sufficient Risk Assessment must then be developed using all available information obtained. The Risk Assessment is also to use a reference in its development to the **Universities Risk Matrix Form (Appendix A)** which details levels of dust, fumes and vapour indicators and outlines process control measures that should be considered in the development of a Safe System of Work (Method Statement). This assessment is to be carried out by any sub contractor and is to consider all staff and any other persons that may be affected by any activities. Generic risk assessments will not be accepted by the University in any format. All assessments must be specific to works / projects being undertaken.
5. Using the Risk Assessment a Safe System of Work (Method Statement) should then be developed. The Safe System of Work should detail, how the works / project is to be carried out. Any and all processes / actions that will be used or implemented in the control of dust, fumes or vapours, if these are a by product of the works / projects in question.
6. A copy of all Hazard Data Sheets, Information, Risk Assessments and Safe Systems of Works must then be made available to the University Authorised Representative assigned to the works / projects.

7. Under no circumstances must works / projects that have the potential to produce dust, fume or vapours be commenced until all information, assessments and safe systems of work been approved by the University Authorised Representative
8. The University Authorised Representative will on receipt of the information, assessments and safe system of work check these documents off against the **University Works / Project Controls Pro Forma (Appendix B)**.
This document will be used to ensure that all of the appropriate Processes, Assessment's and information have been produced and carried out by the Principal Contractor / Sub Contractor or any persons undertaking the works /projects.
9. During works / project the University Authorised Representative will carry out periodic works / projects audits for compliance and adherence to the Works / Projects Safe Systems of Work, with particular emphasis on the control measures developed by the Contractor / persons for dust, fumes or vapours. The University Authorised Representative will use the **University Works / Project Site Audits Form (Appendix C)** in carrying out this process, cross referencing the Works / Projects Safe System of Work developed and the **University Risk Matrix Form (Appendix A)**.
10. The Principal Contractor / Sub Contractor or persons in control of the works / projects will be required to undertake their own site audits to ensure that adherence to the Safe System of Work are being complied with and a record of this audit is available in document form (hard or electronic copy) for inspection by the University Authorised Representative.
11. If during the works / projects audits carried out by the University Authorised Representative any non compliance / adherence to the Safe System of Work is found. These will be immediately brought to the notice of the Principal Contractor / Sub Contractor.
12. It will be required by the University that the Principal Contractor / Sub Contractor Works / Projects Manager address any non adherences to the Safe System of Work immediately.
13. If however the non adherences to the Safe System of Work are found by the University Authorised Representative, to be such that the risk is of a level to produce an uncontrollable risk or danger. The works / projects will be halted on the instruction of the University Authorised Representative. This will happen with immediate effect and notification given to all involved and the Principal Contractor / Sub Contractor works/projects manager.

- 14.** In the event of a halt in works / projects by the University, those works / projects will be subject to a further audit by the University Authorised Representative and dependent upon the findings of that audit appropriate action will be implemented by the University.
- 15.** In the event of a serious failure and non adherence to the Safe System of Work the University reserve the right to terminate the works / projects in accordance with the Contract details and requirements issued by the University at the start of those works / projects.
- 16.** Any non adherence to the Safe System of Work and its rectification / reaffirmation will be undertaken by the Principal Contractor / Sub Contractor Works / Projects Manager involved at their own (applicable contractor) expense.
- 17.** In the event of a halt to works / projects by the University. The works / projects will not be allowed to recommence until such time as the University Authorised Representative have been satisfied that the continuation of the works / projects will not cause or produce a risk.
- 18.** In recommencement of the works / projects call may be made to the University Health and Safety Advisor, who will with the University Authorised Representative inspect and verify or restrict recommencement of works / projects.
- 19.** Copies of site audits carried out by the University will be held on file within the Estates Department until completion of the works / projects and there after for a period of six months within the works / projects Health and Safety File.

5. Works / Project Curtailment / Stoppage

All works / projects or any part of those works / projects, can only be curtailed or stopped when appropriate instruction has been received from a University Authorised Representative.

All authorised persons will be notified and recorded at initial works / projects meeting.

Under no circumstances must any works / projects be curtailed or stopped by any other person other than an authorised person. However if there is a risk of immanent injury, harm or damage the works / projects can be stopped immediately by University Management and notification made to Principal Contractor works / projects manager and University Authorised Representative.

Reference should be made to section 8 of this document for confirmation of University Authorised Representative in the event of works / projects curtailment / stoppages.

6. Monitoring of Dust, Fumes and Vapours

All works / projects that produce or have the potential to produce any dust, fumes or vapours that are in excess of any standards detailed in the Health and Safety Executives Publication EH40 (current issue) or any other applicable guidance note, memorandum. Detailed in any authoritative body standard, guidance or recommendation, or that could be deemed as being of a level that would cause discomfort or produce a reaction from persons not involved with the works / projects. Should be monitored and this be carried out in accordance and compliance with an acceptable or applicable standard detailed by the Health and Safety Executive or any other enforcing body or organisation.

All monitoring processes must be carried out by a competent and experienced person and where applicable be qualified and / or accredited by an appropriate body.

Monitoring must be carried out in a timely manner and at appropriate or defined intervals (in accordance with guidance notes or applicable standards) throughout the works / projects.

Records of all monitoring must be kept and made available during the works / projects to the University Authorised Representative and all other persons / organisations that would have a right to there inspection.

On completion of works / projects copies of the monitoring records must be provided to the University Authorised Representative on the day of completion and / or hand over. All appropriate monitoring will be carried out by the Principal Contractor / Sub Contractor or his appointed agent.

7. Rectification of Non Compliances

Any non compliance of the requirements detailed within works / projects specification or in accordance with this document, will be required to be addressed immediately by the Principal Contractor / Sub Contractor.

Any non compliance will be undertaken by the Principal Contractor / Sub Contractor at his own cost.

All non compliance when addressed will be notified to the University Authorised Representative, who will inspect and record compliance within site records.

If due to non compliance any damage or loss occurs, rectification will be the responsibility of the relevant contractor who will bear all costs.

8. University Authorised Representative

All works / projects carried out by Principal Contractors / Sub Contractors will have allocated / nominated to its undertaking a University Authorised Representative.

An Authorised Representative will be a named individual of the University staff or its management or an individual that has been contracted by the University to be its representative for specific works / projects.

A number of non named University staff and management members will also be classified as Authorised Representatives. These non-named representatives will be restricted to members of the University Estates Management team, University Health and Safety / Fire Safety Officers and University Security Officers.

In the event that any works / projects need to be curtailed or stopped due to unforeseen situations. Where harm or damage is caused or could be caused, or where elements of the works / projects cause disruption or major disturbance to the normal running of the University. Or un-assessed risks to health, safety, welfare or security are encountered.

Those individuals detailed in this section above, will have the automatic right to require curtailment or stoppage of or all or any part of any works / projects.

If any curtailment or stoppage is required this may be carried out by the University Authorised Representative verbally in the first instance, with conformation in writing of that verbal notification. Copy of written notifications will be lodged with the University Estates and Security departments, and a copy provided to the Principal Contractor or Sub-Contractor for inclusion within the works / project Health and Safety Plan.

Under no circumstances must works / projects be curtailed or stopped for or on the request of any Non-Authorised person/s. Only those detailed in this section as University Authorised Representative have the right to curtail or stop any works/project.

Appendix A:
University Risk Matrix Form

University Risk Matrix Form

This Risk Matrix has been produced by Aston University as a guidance document to assist in the production of appropriate and sufficient Risk Assessments and the development of Method Statements (Safe Systems of Work), for works / projects carried out within the University buildings and campus.

The document provides outlines to the type of activities that may be carried out but it will be required of all Contractors to assess their works / project and set those undertakings against appropriate activity levels, risk groups and using the activity matrix apply appropriate control measures.

Type of activity: Works that will be carried out or similar works to that being undertaken.

A: Inspection and non invasive activities, including but not limited to removal of fascias, boards, tiles and other such items for visual inspection in corridors and none permanent populated areas:

- Painting and preparation works, in corridors and none permanent populated areas.
- Electrical and plumbing works, of a minor activity which do not generate dust, fumes or vapours or require the cutting of access holes in walls and ceilings.
- Visual inspection above ceiling tiles where there is minimum disturbance of dust or insulation materials.

B: Small scale, short duration activities which create minimum dust, drilling of walls and ceilings of small holes up to and including 30 mm in walls and 100 mm in ceiling tiles or plaster board:

- Minor chasing out works for cable or pipe works of up to and including 1 meter in length where dust migration can be controlled with a minimum level of action being taken (dust sheeting and on going clean down)
- Painting and preparation works within permanent populated areas, where the level of painting and preparation is no greater than 1 square meter of painted or prepared area.

C: Any works / project of long / short duration which generates a moderate to high level of dust or requires minor building works, demolition or removal of any building fabric, components, assemblies or fixtures:

- Any sanding of walls both for filling of cracks, minor plaster works, paint on walls and fixtures or wall coverings.
- Removal and installation of floor coverings, vinyl and carpet, ceiling tiles of more than four in total.
- Any caseworks or plaster board walls or structures which include the construction of frameworks and retainers.
- Works or projects that include minor duct work or electrical work above ceilings or that would require fitting to walls.
- Any major cabling works that require the drawing through of cables up to and including 16mm twin and earth or armoured cable.
- Any new M & E Installation, rectification or modification of any nature or size

D: Major construction works that include new and / or refurbishment works where dust, fumes and vapours production are a common occurrence:

- Major painting or preparation works, requiring preparation that would include the sanding of a number of walls, floors or ceilings.

Control Risk Groups: Details of areas and locations or similar, that works / projects could be carried out in with the lowest risk areas detailed within the first group and highest in the last group.

i: Low Exposure: Corridors / low level occupation areas, plant rooms, ducts and stair wells.

ii: High Exposure: Offices, lecture and study areas, laboratories, general use public areas coffee shop, eateries, library and workshops.

iii: Sensitive Exposure: Areas of sensitivity IT rooms and controlled areas, accommodation areas:

- Catering areas for food preparation.
- Any clean room areas or areas of equipment that is sensitive or that could be affected by atmospheric dust, fumes or vapours.

The Control Risk Groups are an indication of areas or locations that are contained within the University buildings or campus.

A Control Risk Group level must be assessed / identified and set against the area or location of the works / project to ensure appropriate scoring on the **Activity / Control Matrix** section of this document.

Activity / Control Matrix:

The matrix provides detail by cross reference, of the minimum level of control measure that University require. In the event of a Company wishing to apply a higher standard once the Risk Assessment process has been completed they should notify the University Estates and Capital Developments department/Manager or University representative of their intentions.

	Type: A	Type: B	Type: C	Type: D
Risk Group i	Class 1	Class 2	Class 2	Class 2
Risk Group ii	Class 1	Class 2	Class 3	Class3
Risk Group iii	Class 2	Class 2/3	Class 3	<i>Referral</i>

The use of the **Activity / Control Matrix** will require that the type of activity that is to be carried out within the works / project is firstly identified. The next process is to identify the **Risk Group** that will be potentially exposed during the works / project.

Once these have been established the Matrix can then be applied and the **Class of Control** can then be identified. The Class of Control identified once the assessment process has been undertaken is the **minimum level** that is acceptable by the University. If the Principal Contractor / Sub Contractor wishes to increase the level of control to the next class this would be acceptable. It is **not acceptable** that a lower class is implemented after appropriate identification of Type or Group has been carried out under any circumstances.

Class of Control: Types of control measures needed to be implemented on works / projects that ensure appropriate levels of protection.

Class 1 :

- Undertake works / project by means and use of minimum dust, fume and vapour control. Carry out clean down of works with standard cleaning procedures.
- Use natural ventilation to disperse fumes and vapours from work / project area.
- Ensure appropriate notices and restrictions are in place prior to works / project commencement.

Class 2 :

- Isolate area of work / project in the immediate area to prevent dust, fumes and vapour passing from area to immediate surrounding area.
- Provide a means of access and egress from the area that will control dust fumes and vapours.
- Ventilate area by means of natural ventilation if possible and supported by mechanical means.
- Block off any means that dust, fumes and vapours can escape to other areas other than external atmosphere.
- Seal all unused doors and internal windows, vents and ducts.
- When undertaking works of a building nature that produces dust, wet mist surface to reduce dust level.
- Contain construction waste in covered containers.
- Place dust attract mats at entrances and exists to works / project.

Class 3 :

- Isolate work / project area from all other areas of the University by means of a barrier that provide a seal to floors walls and ceiling.
- The barrier must have an entrance that has a lobby or secondary area that has a two door system on either side of the lobby area.
- Dust, fumes and vapour control measures must be put in place that provide a negative pressure system within the work / project area.
- The use of mechanical ventilation extract system to be used on works / project that produce high levels of dust, the system may need to include and utilise filter systems.
- Isolation barriers must remain in place until completion of all works / project undertakings and full and appropriate cleaning and atmosphere extract.
- Air sampling and tests may be required in accordance with the works / project carried out.
- All clean down processes must be of a nature that eliminates all dust disturbance (wet process).
- If clean down requires the use of vacuuming the vacuum cleaner must be fitted with an appropriate level filter and this must be cleaned and effective during vacuum process.
- The removal of the works / project barrier and its seals must be carried out with care and any debris attached to it removed or cleaned down during removal process.

The use of any University equipment is not to be undertaken to implement any control measures without the express written permission of the University Estates and Facilities Department or the designated University representative.

The class of control are indications of measures that will need to be implemented prior to and during all works / projects.

The class of control must be assessed / identified and set against the level of controls needed to ensure appropriate protection is achieved and level of scoring in the **Activity / Control Matrix** section of this document.

Appendix B:
University Works / Project Controls Pro Forma

University Works / Project Controls Pro Forma

This document is to be used by the University Estates & Capital Developments Department and University Representatives to assess that all appropriate information, documents and details have been obtained, developed or supplied for the works / project detailed.

All information, documents and details must have been received and / or provided before commencement of the works / project.

Under no circumstance must any works / project commence without all appropriate Risk Assessments having been carried out firstly and that a Method Statement (Safe Systems of Work) has been developed from these assessments and communicated to works / project staff (training provided if necessary) appropriately.

IS THERE EVIDENCE OF:

Hazard Data or Material Data sheets available	Yes	No
Generic Data Information available	Yes	No
Do the above reflect works / project specification	Yes	No
Risk Assessments available (<i>Essential</i>)	Yes	No
Safe System of Work available (<i>Essential</i>)	Yes	No
Program of Work / Time Program (Gant Chart or similar) available	Yes	No
F 10 available (<i>Essential on CDM works / projects</i>)	Yes	N/A
Contact details for works / project available	Yes	No

Comments:

If the works /project are of such a nature or location that the risks involved are of a high level or fall under the requirements of CDM Regulation it will also be necessary to ensure that the Health and Safety Information Pack and the Initial Health and Safety File are available prior to works / project commencement.

IS THERE EVIDENCE OF:

Health and Safety Information Pack available	Yes	No
Initial Health and Safety Plan available	Yes	No

Comments:

Date:

Name:

Position:

Appendix C:
University Works / Project Audits Form

University Works / Project Audits Form

This document is to be used by the University Estates and Facilities Department and University representatives, to assess that all appropriate actions and details of the Safe System of Work are being applied and carried out by the Contractor for the works / project detailed.

This document is to be used as a visual check and inspection tool of the site / location of the works / project, to confirm compliance with Contractor Requirements or to highlight failures or non compliances within the works /project.

THE FOLLOWING ARE VISUAL CHECKS AND INSPECTIONS ONLY:

Works / Project Specification on Site	Yes	No
Is Specification being complied with	Yes	No
Are amendments / instructions on site	Yes	No
Are these amendments / instructions dated	Yes	No
Is material used as specified	Yes	No
Is a copy of F10 available (Should be posted or held in Health and Safety Plan)	Yes	No
Are Risk Assessments available	Yes	No
Is there a copy of Method Statement (Safe System of Work) available	Yes	No
Has all Safe Systems of Work been communicated (training records & sign off sheets)	Yes	No
Is dust, fumes and vapour restrictions in place (standard detailed on Method Statement)	Yes	No
Do they comply with the Method Statement (Safe System of Work)	Yes	No
Is site appropriate clean and tidy	Yes	No
Have works / project inspections been carried out	Yes	No
Are there records of inspection and instructions	Yes	No
Are the records of inspection dated and signed	Yes	No
Have there been any incidents recorded on site	Yes	No

Comments:

Date:

Name:

Position: