Bristol Hackspace Risk Assessment: G10 Workshop

Place of assessment: BV studios room G10

Date and time of assessment: 2015-08-24 20:00

Assessors: John Willis, Joe Eggar.

Caveat:

The assessment was done on a best endeavours basis by unpaid volunteers who have not had formal training for machine tool or workshop risk assessment.
This assessment is advisory and the assessor will not accept liability for errors or omissions.
Nothing in this assessment should be taken as permission or instruction to work in an unsafe manner.
This assessment does not replace or reduce a workshop user's common law duty of care to work in a way that does not endanger others.

Assessment Background:

A meeting of interested members on 2015-05-10 agreed to undertake risk assessments of equipment in the G10 workshop as the first step to produce written induction notes.
More recent discussions with potential insurers indicate that risk assessments will be required in order to obtain insurance for Hackspace

G10 Workshop Background

Over a 2 year period Hackspace has increased the amount of space it rents in G10 and now occupies half of the room. Two other tenants, Matt Ven and Nic Marchall share the room and are both Hackspace Members.
The Hackspace half is approximately 9 metres x 4 metres. It occupies the side of the room with the entry door and an associated gangway.
It contains

- Woodwork and metalwork benches
- A small Printed Circuit Bubble Etch Tank
- A new A0 laser cutter

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- Bandsaw and associated wood dut extraction
- Bench pillar drill
- Woodwork lathe
- Bench grinder
- Smal CNC Mill
- Bench Belt / Disk Sander
- Bench Router
- and Bench jig saw
- Hand held circular saw, angle grinders, and battery drills, and vacuum cleaner
- Cycle stand
- small compressor and paint spray gun
- hand tools
- Two racks for members projects and materials (mostly wood)

Fresh air is provided by opening the window
The Laser cutter has extraction to the atmosphere and there is no other extraction.
There is a room filter shared with the other tenants.

Most of the electrical power is provided through extension leads conected to a double 13 A socket under the bench.

Work is varied and depends on the projects of individuals working in the space at the time it includes but is not limited to:

- Cycle repair
- Woodwork including items of furniture
- Metalwork
- fabricating items form plastic
- Liited fibreglass layup
- Limited painting and gluing and includes preparation of metal & timber items for painting, some reasonably large
- Etching printed circuit boards
- General crafts
- Repair and maintenance of the workshop equipment

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- Assembly and use of small CNC machines, usually designed by the member.
- Instruction in the use of equipment.

It does not include welding, brazing and heat treatment or anything requiring a furnace or naked flame as these ativities are not allowed by the landlord

Work is unsupervised with the expecation that individuals will request assistance if they need to use unfamiliar tools or equipment.

Lone working is allowed with 24 x 7 access to the building.

The space is small for the range of activities carried out and there can be 5 to 15 people working in it.

Until recently G10 was referred to as the messy space. This was taken literally by many members and the area was cluttered with tools left on benches, wood dust and shavings on all surfaces, and material and part finished projects left in any available space. There has been a drive to clean and tidy the area, encourage tidy and responsible working, and manage storage of materials and projects, which has made a significant positive impact on the space. but there is considerable room for improvement.

Members skills and experience range form none to highly skilled and professional engineers.

Many members show a general lack or awareness or or concern for activities being carried out near them.

Raw material is stored in any free location even if this is workspace for a tool such as the wood lathe or a gangway.

There are fire extinguishers and a small first aid kit in the room but no phone line.

There is no planned inspection, testing, or maintenance and repairs are carried out as needed if a suitably motivated indivdual is available.

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Risk Assessment

Risk	Description	Recommendation
Electric Shock	Extension leads are used extensively. Extension leads are not tested for safety so a poor earth connection could go unnoticed for a considerable time. Equipment is not tested for safety	Install enough 13amp sockets so extension leads are not necessary for normal working. Set up a regular test and inspection for electrical items. Put an electric shock poster on the wall. Consider arranging a first aid organisation such as the St Johns Ambulance to run skill share sessions.
Trips and falls	Potential hazards from: • Extension leads • Equipment blocking gangways • Raw material stored in unsuitable locations • Standing on chairs • Dirt, dust and spills	Install sufficient 13 amp sockets to remove the need for extension leads. Provide mandatory workshop induction that includes tidyness and trips and falls and makes members aware of the Hackspace step ladder Keep the floor clean. Discourage storage of raw material if the racks are full.
Operator pushed onto a hazardous machine or tool	There is not much space and it is possible to possible for a machine operator to be pushed into a machine by someone moving near them	Include an awareness of others in a G10 induction. Regularly review machine guards and emergency stop buttons Clearly mark minimum gangways and operator floor space.
Bystander injured by a	There is not much space and it is possible to for a worker to strike	Provide mandatory worshop induction that includes awareness

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Risk	Description	Recommendation
tool or machine	someone else with a tool or an onlooker to become caught up in equipment.	of safe distance from someone operating a machine or using a tool a G10 induction
Fire	See the Fire risk assessment If extension leads are overloaded someone could be tempted to replace a fuse with something that doesn't blow.	See the fire risk assessment Install sufficient 13 amp sockets to remove the need for extension leads.
Dust and fume	Many processes used create wood dust. Grinding sanding and using an angle grinder produce metal dust. Ceramic dust will be produced during normal grinding and wheel dressing and could be produced by working on ceramic. There are no instructions or advice to prevent machining of toxic material. Flammable vapours may be produced produced by painting, fibreglass layup, use of adhesives, and degreasing. Hazardous vapours may be produced by solvent degreasing or the action of the laser on solvent vapour. HCL is given off when the bubble etch is being used. This is probably not toxic but may corrode other machines. There is no general extraction in the area. Fresh air makup is provided by opening the window.	Provide mandatory workshop induction that includes dust and fume safety. Limit the materials that can be handled and have a defined process to extend the acceptable material list.. Ensure that existing dust filtration is used. Provide COSHH data sheets for all materials used and insist that members bringing in new material provide the coshh sheet. Make personal dust & vapour filters available for use. Fit a ventilation fan to provide clean air for the room.

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Risk	Description	Recommendation
	The output from the dust monitoring device does not relate to COSHH safety levels.	
Skin problems from contamination	Materials are handled that can cause skin problems e.g. epoxy resins. Dirt and contaminants left on tools and work surfaces could cause skin problems for members using the space who would nto be aware of the materials hazards. Many members do not bother to clean up after themselves.	Provide mandatory workshop induction that includes awareness of hazardous materials and the need to clean up after working. Enforce a clean bench policy.
Injury from hazardous materials Failure to comply with hazardous material regulation	There is no control of material brought into the space. Members are not necessarily aware of hazards of materials they use, or relevant regularions. Members do not necessarily remove materials from the space when they leave so hazardous material may be scrapped by people unaware of the hazards. Containers can break or leak and contents may have to be cleaned and disposed by people unfamiliar with the material. Hazardous materials are not segregated so the container label is the only indication that a material is hazardous. There is no requirement to label materials in the space.	Provide mandatory workshop induction that includes awareness of the need for individuals to to take responsibility for materials they bring into the space. All containers must be clearly labelled with the contents and the label should indicate any hazards. Hazardous materials must be stored in agreed locations, not in project boxes or the nearest available space. Set up a list of allowed materials and require a risk assessment if new materials are introduced.
Injury from Maintenance or repair	Maintenance work can require running a machine without its guards which could put the maintiner and others at risk.	Agree a hazardous maintenance procedure with hackspace members and other tenants in G10 to allow Maintainers

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Risk	Description	Recommendation
work	Non maintenance personell working in the area will increase the risk of accidednt by making exessive noise or distracting maintenance prsonnell.	exclusive use of the workshop when necessary. Provide a Do Not enter sign for use when hazardous maintenance operations are in progress.
Injury or breakage form a hazardous project.	Members may work on projects that could be hazardous to others or require the use of hazardous materials	Agree a Hazardous Project procedure that prevents members working on them at times when they put others at risk. Require a risk assessment for all hazardous projects.
Injury or breakage from falling items.	Reasonably heavy items and materials are stored on shelves and could fall if not stacked sensibly. Items cold be dropped when being removed or loaded onto shelves. Large baulks of timber have been stored standing on end and could fall over. Many items are heavy enough to cause serious injury and damage equipment.	Provide a mandatory workshop induction that includes safe stacking and handling materials and equipment.
Injury or breakage from from incorrectly installed items	Tools may be set up temporarily in an unstable state for commissioning and not be fixed when made operational.	Have an independent check of tools before allowing operational use.