

# Care and welfare of animals in a high containment unit

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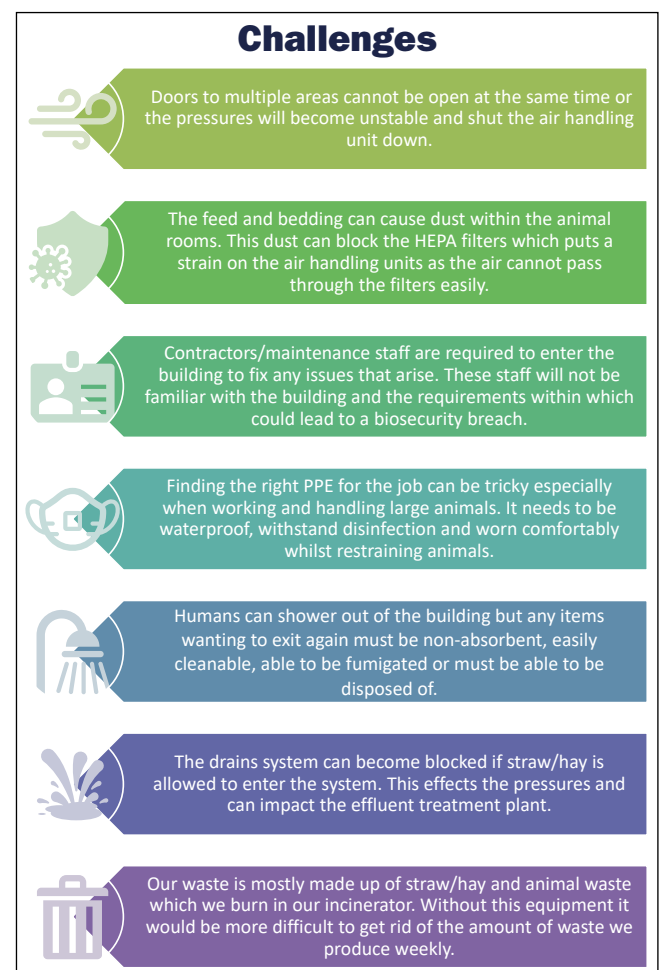
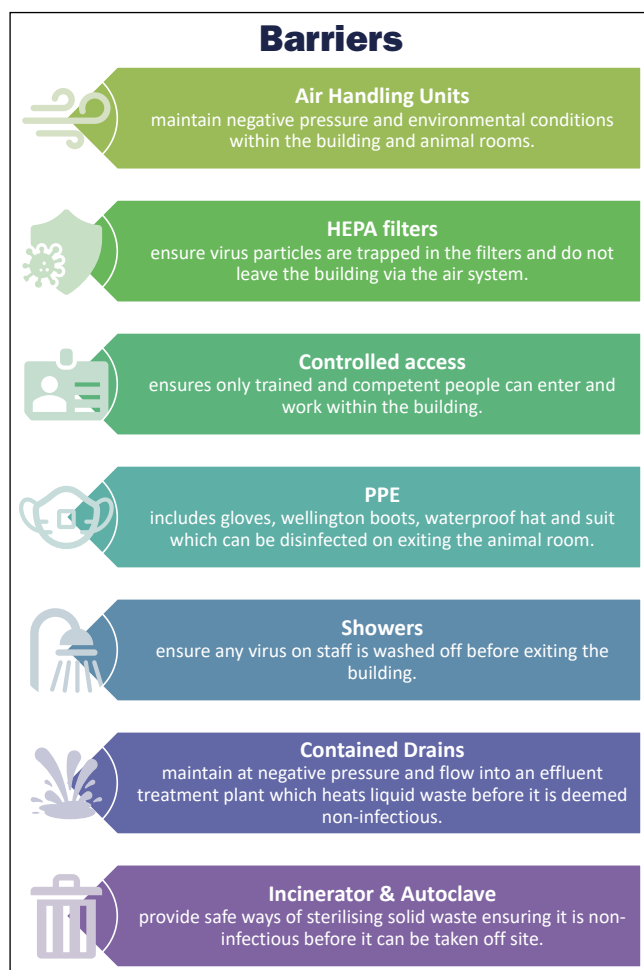
The Pirbright Institute

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## Introduction

The Pirbright Institute is a world-leading centre of excellence in the research and surveillance of viral diseases of livestock and viruses that spread from animals to humans. In this field some animal models cannot be replaced and due to the nature of the work, they must be housed in a containment unit to protect the environment and other animals from the viruses worked with.

Our high containment building is designed to contain viruses up to and including specified animal pathogen order (SAPO) 4 and advisory committee of dangerous pathogens (ACDP) 2. It contains fourteen animal rooms which can house a variety of large and small animal species. The design and biosecurity barrier requirements pose challenges to the care and welfare of animals housed within. Below these challenges are outlined as well as how they have been overcome.



## Solutions

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Animal Technicians can ask for the alarm system to be isolated so that tasks can be carried out with two doors open at the same time (e.g. animal deliveries)
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There are pre-filters within the room before the HEPA filters to protect them from any dust created in the animal room. These are checked daily and changed if they become dirty.
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All visits must be arranged as other staff/visitors are escorted whilst in the animal unit by competent Animal Technicians. Animal Techs do most of regulated procedures in the unit, so this helps to reduce the need for others to enter the unit.
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We are always looking at new items to see if we can improve comfort/durability. We have recently changed our RPE hoods for a more compact design so that it is more comfortable and does not affect the way we have to handle the animals.
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We have a standard set of enrichment which meets the requirements and can be disinfected between studies to avoid cross contamination. Each new item must be inspected to assess the suitability for life in high containment.
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Baskets were added into the top of the drains to catch any straw/hay which may enter the system. These are emptied twice daily when cleaning the rooms.
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A team of engineers run our incinerator and ensure it is serviced, running and has fuel when needed. A lot of clear communication is needed to run this equipment at the schedule we need it.

## Acclimatisation

On arrival the animals are given an acclimatisation period of ~7 days to get used to the environment, routines and allowing for touch/temperatures to be taken. Our acclimatisation process allows the animals to build trust with the Technicians and a behaviour baseline to be established. This time was established by Animal Technicians who led a project assessing the amount of time needed for the animals to fully acclimatise.

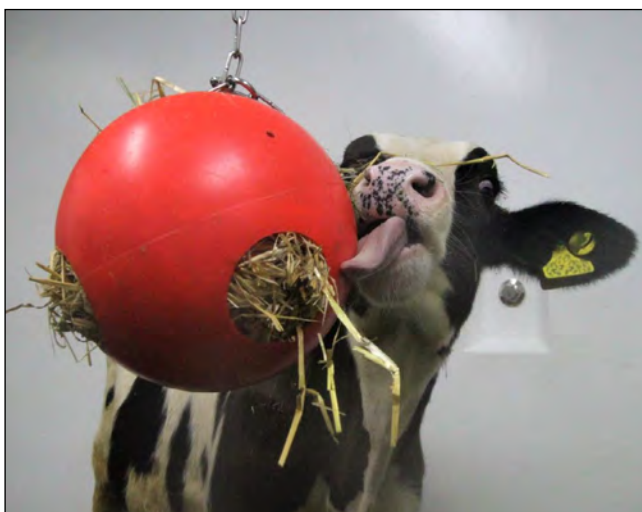


Figure 1.



Figure 2.

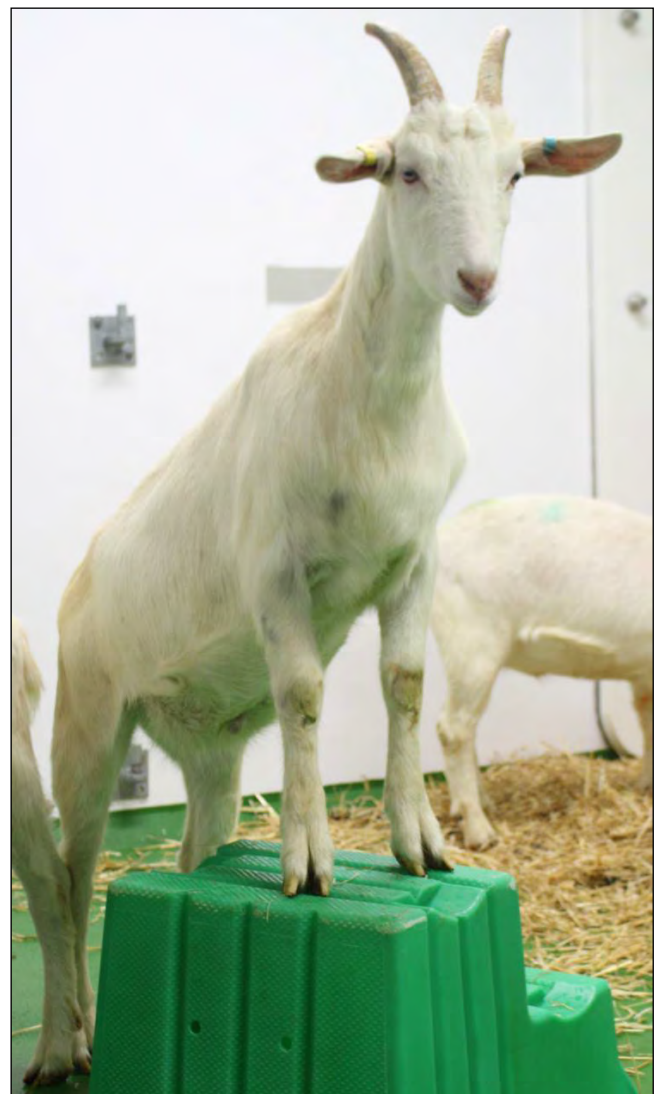


Figure 3.

## Enrichment

The animals are provided with enrichment (Figures 1,2,3) which is changed daily to prevent boredom with the items. We have a rota in place (copy below) for each species (pig example below) which ensures we give a variety of items and do not overfeed (Figures 4 and 5).



Figure 4.

All animals receive thick mats to lay on. Goats, sheep and pigs are also provided with a bed of straw as well.

There are ongoing technician led studies looking at the interaction rates with each species' enrichment rota items. We hope to use this data to improve the enrichment we provide and to test the suitability of new items before being placed onto the rota.



Figure 5.

Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
<b>AM</b>	Hanging Blue 4-pronged toy + Hanging Frozen Fruit Block with Triangle	Hanging Kong Bone + Hanging Hay Ball	Scatter Fed Fruit + Hanging Nylabone Circle + Hanging Spike Ball	Hanging Blue 4-pronged toy + Hanging Hay ball	Hanging Large Kong + Hanging Yellow Ball	Hanging Brown Ring + Hanging Triangle + Scatter Fed Mealworms	Hanging Kong Bone + Hanging Orange Ball
<b>PM</b>	Hanging Blue 4-pronged toy + Hanging Triangle	Hanging Kong Bone + Hanging Hay Ball	Plain Chain (Make sure there are no clips, cable ties or loops in the chain) + Hanging Nylabone Circle + Loose Spike Ball	Hanging Blue 4-pronged toy <b>(ADD HONEY OR JAM)</b> + Hanging Hay ball	Plain Chain (Make sure there are no clips, cable ties or loops in the chain) + Loose large Kong + Hanging Yellow Ball	Hanging Brown Ring + Hanging Triangle	Loose Kong Bone + Hanging Orange Ball + Plain Chain (Make sure there are no clips, cable ties or loops in the chain)