

## **Designing Homes for Healthy Cognitive Ageing (DesHCA)**

# **Virtual Reality Home Design Tours Participant Guide**

### **Introduction**

Thank you for agreeing to take part in the Designing Homes for Healthy Cognitive Ageing (DesHCA) project. We want to hear your feedback on the home designs being developed by the DesHCA project.

You can participate by experiencing the realistic house designs in 3D using a VR headset provided by the research team, or

by examining the design on a screen such as a laptop or tablet computer.

This guide will explain to participants what to expect from the VR design tours, whether carried out in a group setting or at home. It will also detail the practicalities of the activity, such as how to return the VR headsets to the DesHCA team when you have completed your tour.

## **Where would you need to be?**

Participants can take part either

1. At home

Or

2. In a group workshop (either at the University of Stirling or a community setting)

Don't worry if you've never used VR equipment before. The researchers will provide demonstrations of the key functions of the headset and hand controllers. They will also be on hand to offer further guidance as needed during the VR activities.

## **What do the virtual reality headsets look like, and how do they work?**



The VR design tours will use Oculus Quest 2 VR headsets. This new generation of VR headset is wireless, giving the user more flexibility to move around. For comfort, the headset has adjustable head straps, and a spacer that can be added for users who wear glasses.

*Figure 1: Oculus Quest Headset*



*Figure 2: Using the VR Headset and Hand Controllers  
(Image via Oculus.com)*

The headsets come with two hand controllers that can be used for navigating around in the virtual environment. You are able to take part in the VR tours from a seated position.



*Figure 3: Oculus Quest 2 Hand Controllers*

## Doing the virtual reality tour in a group workshop

You may be invited to take part in a VR tour in a group workshop setting, either at a workplace or community group setting, or on the University of Stirling campus.

If you take part in a group workshop, you will have the opportunity to complete a VR tour using the VR headsets. You may also view the designs on a computer screen. We will aim to '[live-cast](#)' from the VR headset onto a nearby computer or TV screen.



*Figure 4: Live Casting from VR headset to a screen  
(Image from Oculus.com)*

This allows the researchers and others in the group to see what the person doing the VR tour is looking at, supporting two-way discussion about the designs and the VR experience itself. After the main VR workshop, we will ask you to stay for a short conversation about your experience of the VR tour, either on your own, or with your group if you are part of an existing team of employees or community group members.

You do not need to bring anyone with you to the group workshops; however, you are welcome to invite someone else along if you wish. The research team will take measures to keep you safe during the activity. If you have any accessibility needs, please let a member of the research team know beforehand so that we can support you on the day.

## **Doing the virtual reality tour at home**

The VR tour at home can take place using either the VR headset, or by viewing the house designs on screen during a video call. You may alternatively review the designs using video or still images.

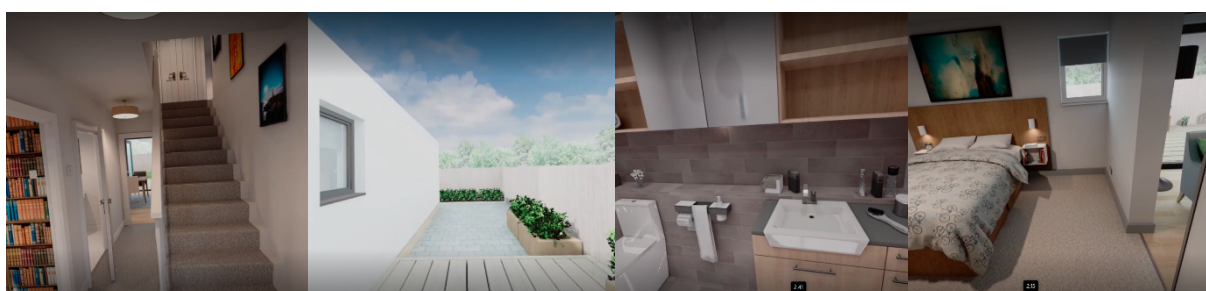


Figure 5: Images from Previous VR House Tours

### *Receiving and returning equipment*

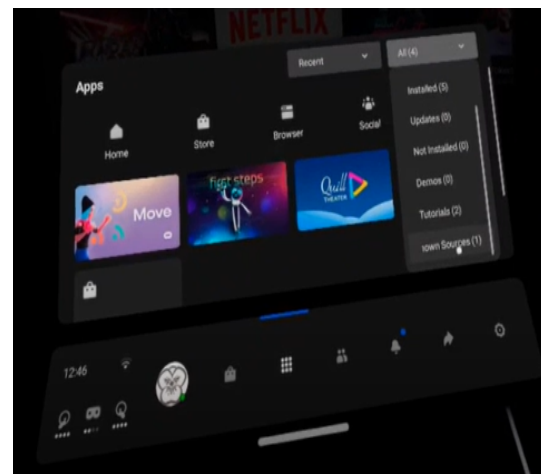
If you are completing your VR design tour at home using a VR headset, we will send a headset to you using a courier service. Before your VR tour takes place, we will arrange a video call to guide you through setting up and using the VR headset and hand controllers. This will include helping you to set up the 'Guardian' safety feature described in the *health and safety* section below.

After your tour has finished, we will ask you to package up the headset using materials that we will provide. We will arrange for a courier to collect the package on a day that is suitable for you.

### *Completing the virtual reality tour at home*

A member of the research team will contact you to arrange a time for your VR design tour. The researcher will guide you through the tour via video call using Microsoft Teams, so it is important that you position your laptop, tablet, or phone so that the researcher can see you. If you do not have a device that you can use to take part in a video call, we can arrange for you to borrow a tablet, which can connect to the internet if you do not have your own internet connection at home.

If you are using the VR equipment from home, the researchers will also provide guidance on navigating the device's menus to access the VR house design models.



*Figure 6: Navigating VR menus*

If you would prefer to do the VR tour standing up, then the larger the space you have available to move in, the better.

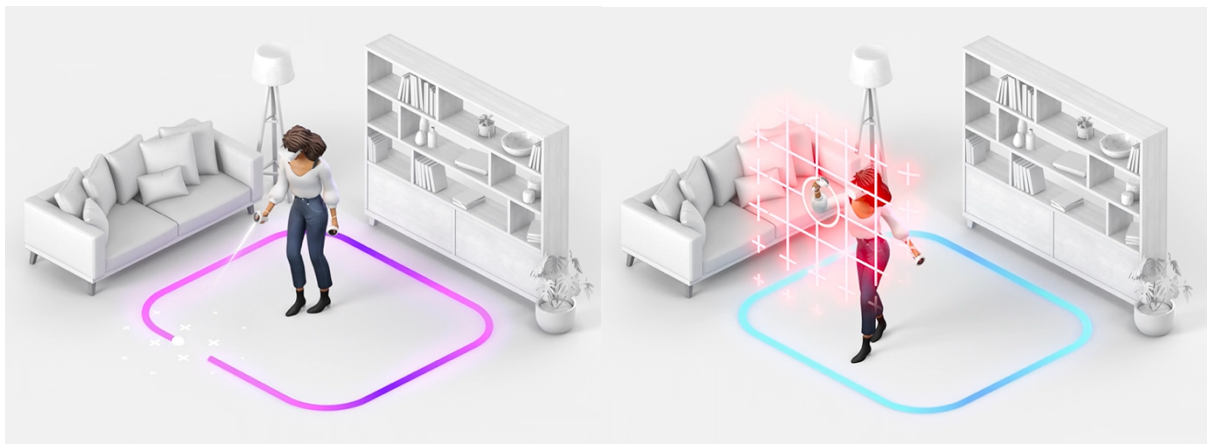
The VR tour can also be undertaken from a seated position. This could be a good option if you do not have a large room or clear space available, or don't feel comfortable standing. If you are worried about the potential risk of injury, feel uncomfortable wearing the headset, or you cannot have someone with you while you complete the VR tour, you can alternatively choose instead to view the virtual house tours on screen using a tablet or laptop computer. If you choose this option, the researcher will share the tour with you over video call, and you will be able to offer your thoughts and ideas.



## Health and safety guidance

Using VR equipment carries a small risk of injury or discomfort, so there are a few steps that we would like you to follow to minimise any risks.

As a key precaution **we require that you have someone else in the house with you when using the VR headset at home** for DesHCA related activities. This may be family member, friend, or carer etc.



*Figure 7: Setting up and using the 'Guardian' safe play area  
(Images from Oculus.com)*

If you do the VR tour whilst standing up, you will be moving in a physical space without being able to see where you are going. To minimise the risk of injury from trips or colliding with objects, it is essential that you have a space that is at least 2m square (6.5 feet square) that has been cleared of any collision hazards.

We will also make use to of the virtual '[Guardian](#)' safety feature on the VR headset. This allows you to define the [boundary](#) of the clear, safe, space you will use for the VR tour. If you move too close to the edge of the defined area during your tour, the Guardian will provide a [visual warning](#), helping you to stay

within the safe area and avoid any collision hazards beyond. An animated video of the Guardian set-up can be found at this web link: <https://bit.ly/3oW4XfB>

The researcher guiding you through your VR tour will ask you position your web camera so they can see you and the space you are moving in, including the floor. This will allow them to do a further check of your space for hazards, as well as keeping an eye on your movement throughout the activity.

As a further precaution, in advance of the activity we will also ask for your contact details, and those of someone you know, for the unlikely case of an emergency.

We hope that you will enjoy the VR house design tour; however, if you feel uncomfortable at any point, you are free to remove the equipment and stop the tour

## **Questions and support**

If anything is unclear or you have any questions, please ask the project Research Fellows:

Contact Martin Quirke on 01786 467 749  
or [martin.quirke@stir.ac.uk](mailto:martin.quirke@stir.ac.uk)



Contact Sarah Swift on 01786 467 610 or  
[sarah.swift@stir.ac.uk](mailto:sarah.swift@stir.ac.uk)

