

Virtual Tour development guidelines and future work recommendations

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Claire Hardy¹ and Malcolm Collie²

¹ Claire.Hardy@hutton.ac.uk

² Malcolm.Collie@hutton.ac.uk



The James
Hutton
Institute



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Introduction

This document is intended to highlight key considerations that should be taken into account when designing and developing a Virtual Tour (VT) involving collaboration and co-development with stakeholders. Including panoramas notes and a panoramas map outline will enhance the project and convey ideas to collaborators ensuring all have a chance to add their reflections and collaborate fully on the project. Including any additional notes or diagrams will aid the VT development process and help deliver a VT as close to the original designs as possible. Communication between collaborators is key to the process.

Key Points to Consider

- It is important to decide the narrative and key points to be communicated to give focus at the very start
- Identify the audience
- Content - At all stages, keep in mind the story you are trying to tell and the visitor journey, consider how the content and its arrangement contributes towards this.
- The structure can be flexible - VTs can be standalone, single spaces (“panoramas”), or be built as a series of nested panoramas and multiple viewpoints within each panorama. The specific design is flexible but is informed by the key messages you wish to communicate, the visitor journey, the audience to be reached, the content you wish to include and panorama images that will be used as the background(s).
- The focus is on developing high-quality visualisations that will enlarge on-screen when selected, these are the most engaging for a visitor. These can include images, slideshows and videos.
- It is essential that the spaces are not overloaded with content. This can result in panoramas appearing crowded. Only resources required to convey the narrative to the visitor should be included (quality, not quantity). However, content can be grouped to fit multiple related items into a single space – this is outlined below.
- Backgrounds should contribute to the “story”, e.g. locations of significance, relevant activities.
- Co-development with stakeholders is important to ensure the final virtual tours are designed fit for purpose to engage the audience.

Virtual tour description

A VT is a means to engage an audience, to share resources in a unique way that is exciting and not prescribed. The visitor to the VT has the opportunity to create a bespoke experience, and journey, depending on their interest, their requirement for

the visit, if they are time constrained and their objective. It is hoped they will visit initially with an open mind and return to create other, possibly more focused, journeys to source information. In that way the VT will be used as a reference resource. The VT should be designed to allow the viewer to visit as much or little as they require, remembering unlike a standard video people are not required to watch the full footage to be exposed to a message. VTs are a unique format used to widen access to a greater audience. Stakeholders have observed gathering resources to one platform and allowing interaction helps 'entertain' the viewers as well as engaging them.

The VTs are developed using 360-degree images and footage that is fully interactive, specifically collected for the purpose of creating the VT using a dedicated 360-degree camera. Both 360-degree images and video footage are suitable, depending on the subject. If the subject is static an image can be used to reduce the size of the overall VT. If the subject is moving a video is preferred to create the dynamic and exciting aspect of the VT. The footage is imported into 3D Vista software to be processed allowing resources to be embedded. When viewed the resources can be accessed when interacting with the 360-degree footage. Clicking on the embedded resources allows them to be viewed. Devices that can be used include: a desktop; laptop; tablet; smart phone or VR Headset. If the VT is viewed on a VR headset or smartphone using a head set (e.g Google Cardboard) a fully immersive experience can be obtained using the inbuilt gyroscope function to direct the tour journey . Each 360-degree footage will be referred to as a panorama to simplify description.

Planning

When planning the VT the visitor journey requires due consideration, – what kind of structure would lend itself to the story you are trying to tell. Should it be linear, taking visitors step-by-step through your narrative? Allowing only one journey through the joined footage, with prompts to ensure the viewer is 'taken' through a step-wise process. Or explorative, allowing visitors to navigate their own way through the VT, spotting items of interest as they go? The latter is a preferred method for these VTs that seek to enhancement the engagement process. In each panorama a collection of resources can be embedded, and the viewer can choose to access any number before moving to another panorama. A floorplan can be added to help viewers navigate their experience.

From a technical perspective, the VT structure can be flexible, as panoramas can be linked together within a single VT (Fig. 1). VTs can be composed of:

- A single panorama.
- Multiple sequential panoramas arranged linearly. (i.e. Panoramas 1 → Panoramas 2 → Panoramas 3...) - *good for linear storytelling.*
- Multiple branching panoramas – *good for explorative storytelling.*

- A combination of the above.

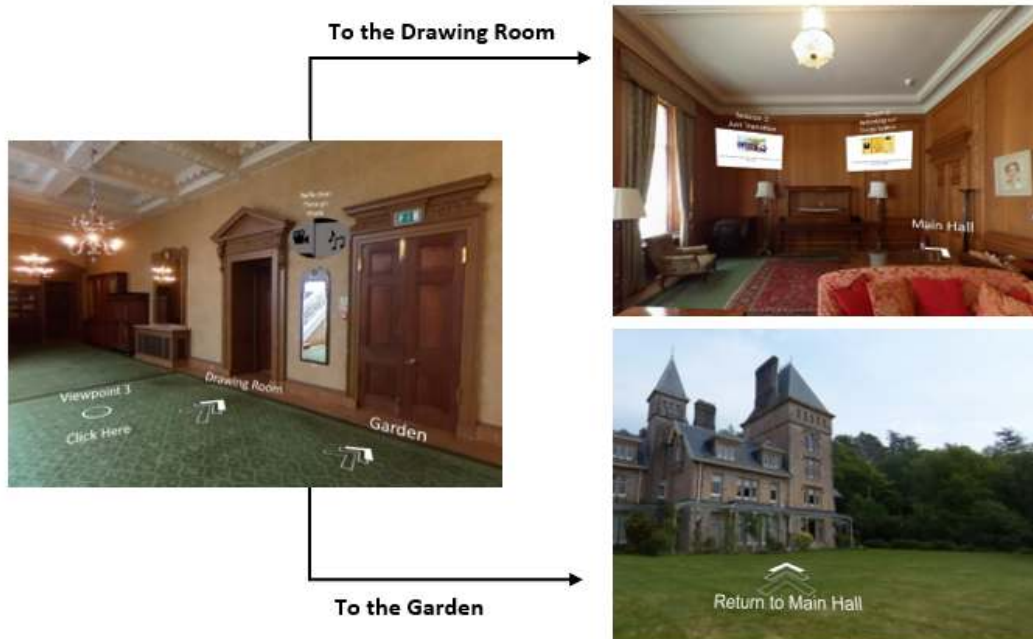


Fig. 1. Example of navigation between nested panoramas within a Virtual Tour.

Content

The focus is on developing a high-quality visualisation that is fully interactive and entertaining. This could include images, slideshows, videos, podcasts, and links to URLs. Crucially, however, the material must contribute to the narrative. It is also important that a panorama is not overloaded with material, however, if it is necessary to display multiple pieces of content together, they can be grouped into a single slide (Fig. 2.). These slides can be used to group varied material together, tagged to a single point in the panoramas, and can also include downloads for supporting files and documentation (e.g. PDFs). These can be initially hidden when first entering a panorama, and a clicked on icon can bring the resources into view. Additionally, the appearance of the slides are fully customisable, so can include branding and other images.



Fig. 2. Multiple related items of varying file types can be grouped together on a single slide and made accessible from a single point within the panorama. Slides are fully customisable

Producing a storyboard to include design concepts and panorama notes help the collaboration process and allow reflections to be shared.

Co-developing

Working with the facilitators and farm hosts from the Monitor Farm Programme an initial [VI](#) was developed to share with other farmers on the Morayshire – Corskie Management Monitor Farm Programme (Fig 3). This process has allowed us to learn and understand co-development of VTs with stakeholders' groups and will be invaluable going forward.

- Getting early buy in from the stakeholders is crucial.
- Providing a 'go-live' virtual session helps engage stakeholders
- Covid restrictions can disrupt timelines and force unforeseen delays, flexibility is important
- Working totally virtually extends all interactions and prolongs the process, ensure if virtual meetings are used everyone is able to share feedback
- Obtaining footage at all opportunities is necessary.
- Preparing audience resources in a friendly format is required.
- A Qualtrics survey allows feedback to be collected and can help to provide a good end user experience.



Fig 3: Images from the initial co-developed VT showing panoramas, embedded resources and navigation aids.

Future Work

Going forward we will use the lessons learnt here to enhance future work with stakeholders and bespoke 'Living Lab groups' especially in the new **Co-designing and implementing best-fit farming practices** COMBINE project (SRP Theme: B3). During this project we will bring together livestock producers in remote and island settings as the ANImal HUSbandry Biosecurity Living Lab (ANIHUB). Here we will use co-development to design a campaign to raise awareness, overcome barriers and trigger behavioural change, including a virtual tour with embedded materials (podcasts, videos, and reflections).



Claire Hardy Claire.hardy@hutton.ac.uk 01224 395396
Malcom Collie Malcolm.Collie@hutton.ac.uk 01224 395250
VT@hutton.ac.uk

The James Hutton Institute
Craigiebuckler, Aberdeen
Scotland
UK
AB15 8QH

Aberdeen

The James Hutton Institute
Craigiebuckler
Aberdeen AB15 8QH
Scotland
UK

Farms

Balruddery Research Farm
Invergowrie
Dundee DD2 5LJ

Dundee

The James Hutton Institute
Invergowrie
Dundee DD2 5DA
Scotland
UK

Glensaugh Research Farm
Laurencekirk
Aberdeenshire AB30 1HB

Contact

Tel: +44 (0) 344 928 5428
Fax: +44 (0) 344 928 5429

info@hutton.ac.uk

Hartwood Research Farm
Shotts
Lanarkshire ML7 4JY