



UNIVERSITY OF LEEDS

Creating the Ilkley Moor Virtual Field Trip

Contributors:

Dr Ryan Kromer, Dr Suzanne Bickerdike, Jason Williams, Buena Galleposa, Matthew Wilson, Ben Pierce, Johanna Fenton, University of Leeds

Success of The Jurassic Coast Virtual Field Trip

“The virtual fieldtrip was well received by our students, particularly as an aid to visualisation of 3D problems often hard to comprehend at the perspective or scale of in person observation. Staff involved in the organisation and delivery of fieldtrips recognise the value that this type of digital resource can bring to the learning experience, whether that be as a preparatory exercise, post-trip debrief material, or a physical trip replacement under certain circumstances. As a faculty we are keen to explore how we might grow the provision of virtual fieldtrips and field resources to enhance the experiences we can offer to students”.

Mark Thomas, Faculty Digital Education Academic Lead



Geohazards Virtual Trip

SOEE5531 Hazards, Resilience, and Sustainable Engineering

Ryan Kromer
May 2, 2023

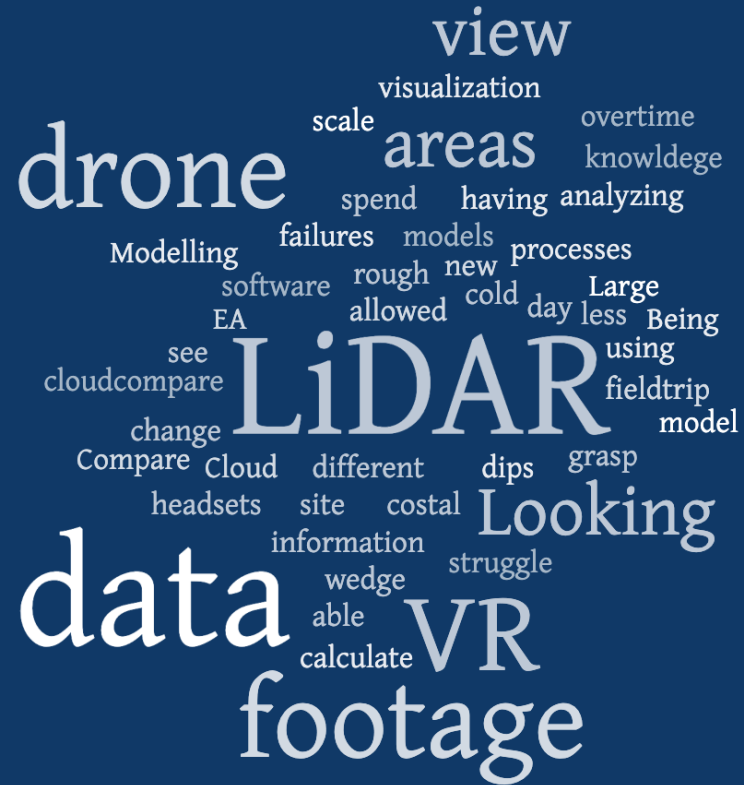
[Overview of the Field Trip](#) [Stop 1 - West Bay - Bridport](#) [Stop 2 - Charmouth and Stonea...](#) [Stop 3 - Lyme Regis](#) [Summary](#) [Evaluation](#) [Credits](#)

Overview of the Field Trip

Introduction

This field trip will take you to the Jurassic Coast in Dorset. It is one of the most active geohazard areas in the UK. The aim of this trip is to apply, and build confidence in, principles taught on the module. Focusing on assessment of geological hazards and risk and interpretation of ancient environments and impact on infrastructure.

Student feedback



Pre-build Process

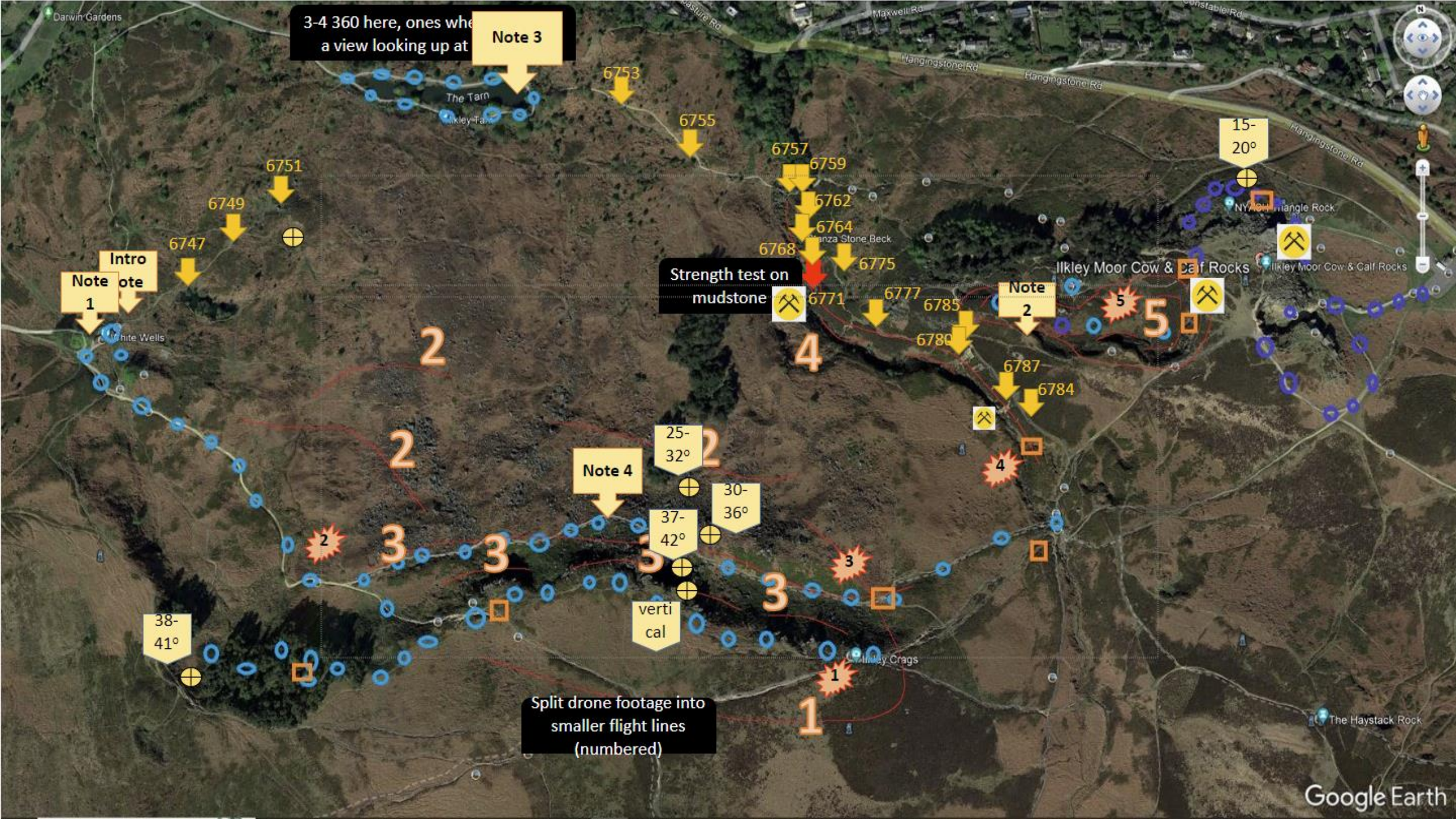
- Post-in-person trip support resource
- Planning (google earth)
- Development / discussion
- Understanding the pedagogy
- Drone flight planning
- General Logistics
- Risk assessment



Content overview

- ❑ 6 360 videos
- ❑ 12 drone flights
- ❑ 12 “2D” videos (including an intro video)
- ❑ 4 strength test locations
- ❑ 6 compass measurement locations
- ❑ Info ‘pop ups’
- ❑ Interactive map
- ❑ Over 130 360 scenes
- ❑ Non-linear





3-4 360 here, ones where a view looking up at

Note 3

Intro Note 1

Note 2

Note 4

15-20°

25-32°

30-36°

37-42°

38-41°

vertical

Strength test on mudstone

Split drone footage into smaller flight lines (numbered)



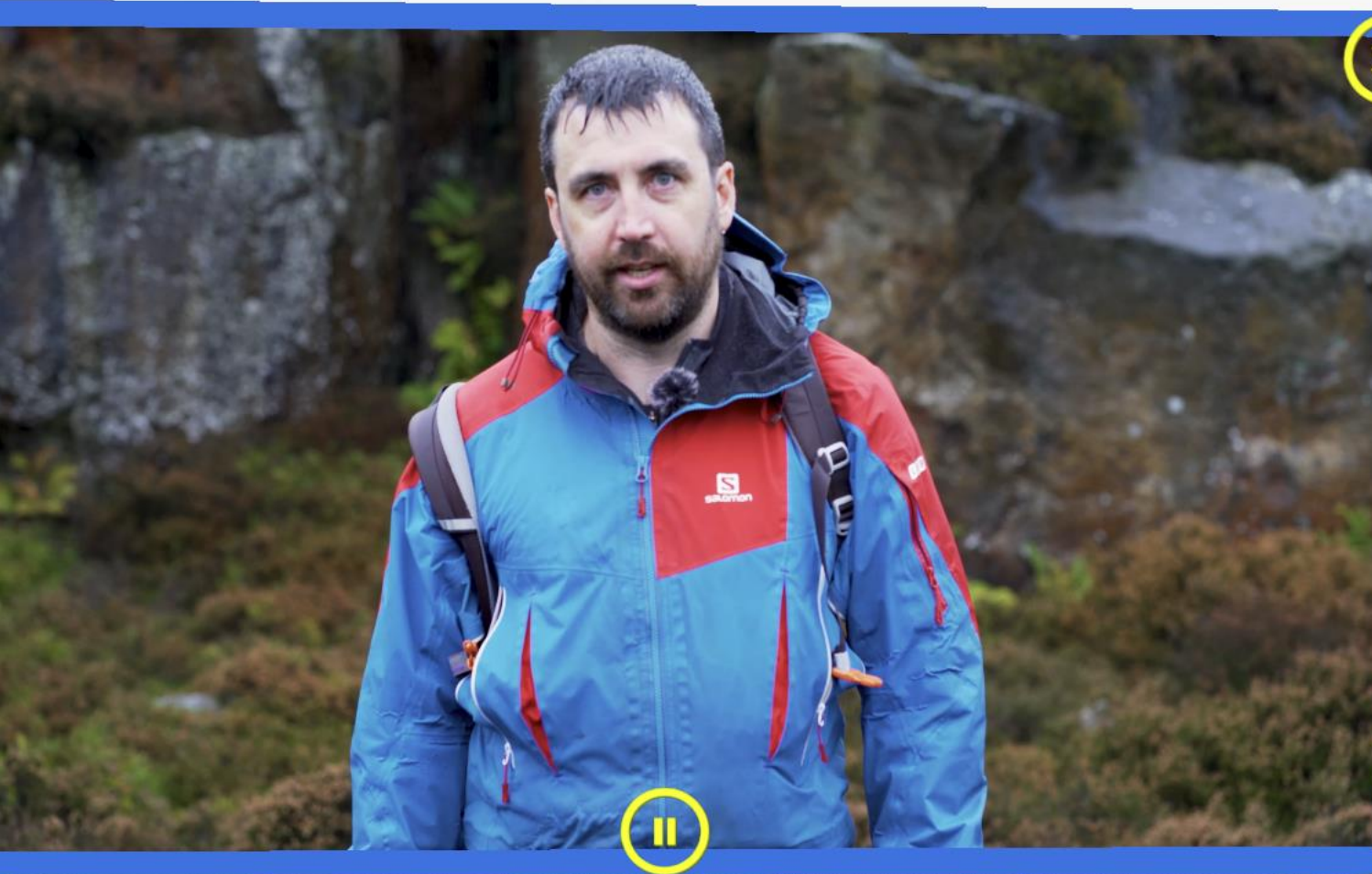
UNIVERSITY OF LEEDS

Why 360?

Logistics + equipment

- ❑ 3 trips to Ilkley Moor
- ❑ 2 full days collecting 360 still images and drone footage, 1 day with Ryan
- ❑ Insta 360 Pro 2 (and app)
- ❑ 360 GoPro Max
- ❑ Traditional “2D” video (Sony A7iii DSLR and Sony FX3), tripods
- ❑ Battery Bank
- ❑ Drone (DJI Mini)
- ❑ Wireless DJI microphone





Can't plan for everything!

- Lots of bad weather!
- Lots of walking
- Camera issues
- Project time constraints
- Lots to fit into each day

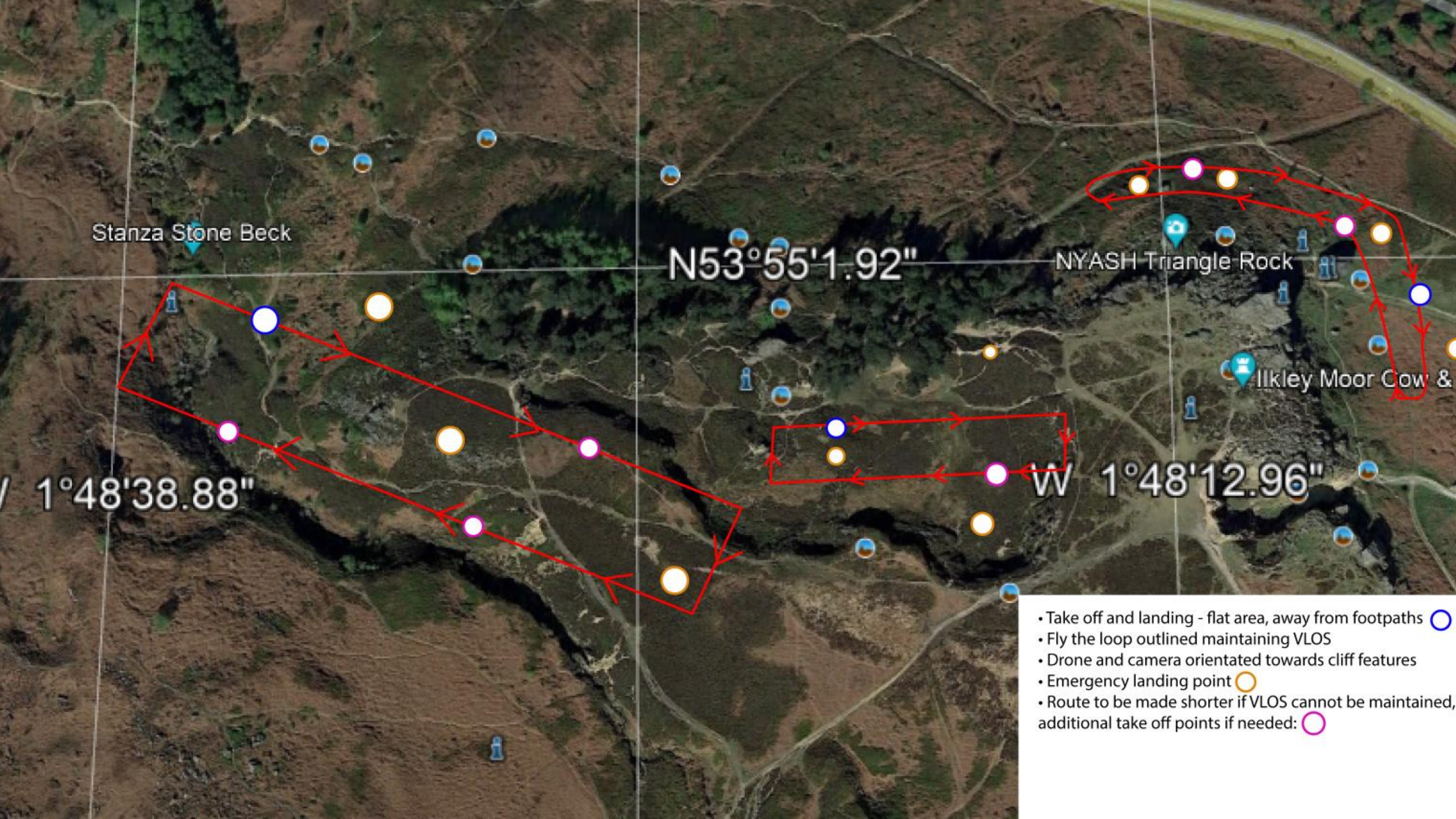




UNIVERSITY OF LEEDS

Drone flights





Stanza Stone Beck

N53°55'1.92"

NYASH Triangle Rock

Ilkley Moor Cow &

1°48'38.88"

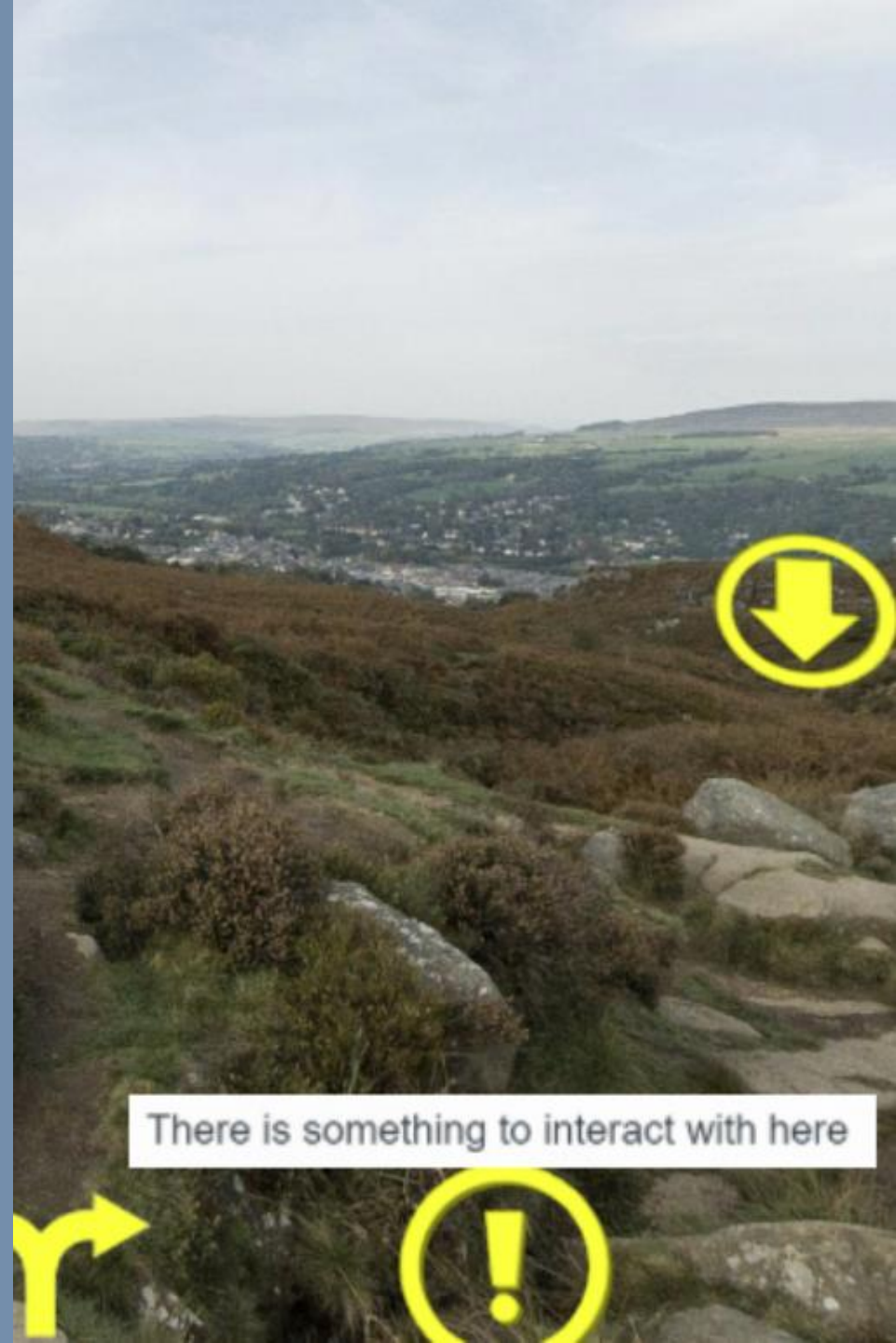
W 1°48'12.96"

- Take off and landing - flat area, away from footpaths ○
- Fly the loop outlined maintaining VLOS
- Drone and camera orientated towards cliff features
- Emergency landing point ●
- Route to be made shorter if VLOS cannot be maintained, additional take off points if needed: ○



Applied lessons learned from The Jurassic Coast

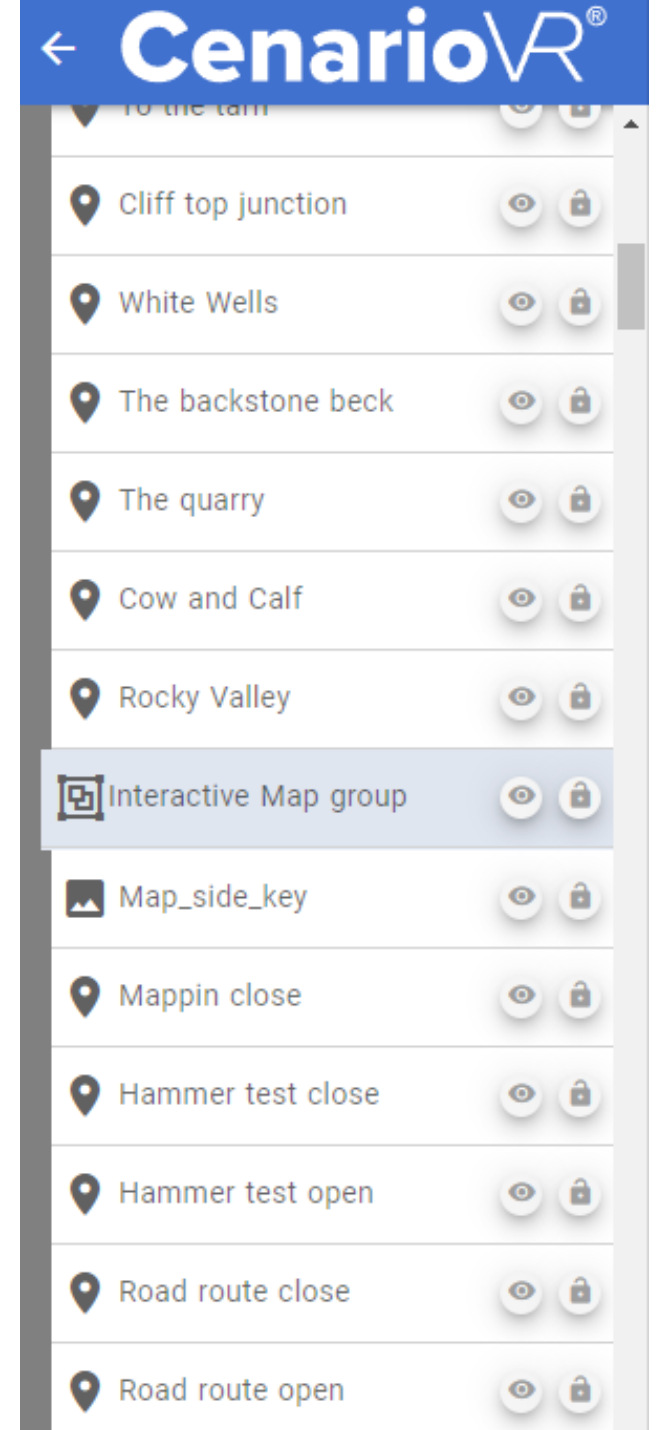
- Intro video
- Accessibility
- Build for a headset
- Optional routes (nonlinear paths)
- Jump off points



There is something to interact with here

Build issues

- ❑ CenarioVR has a total project size limit (but it doesn't tell you!)
- ❑ Folders vs Groups
- ❑ Copying of the map



Feedback

“Always wished someone would do something like this to re-create the field trips virtually. And you have done exactly that! Absolutely brilliant!”

“Usually the other virtual resources were nothing but a combination of pictures, which made it hard to put two and two together. But this virtual resource solves that and works absolutely brilliantly!”

