Thrill Laboratory presents

VR PLAYGROUND

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TECHNICAL RIDER

V2.0

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Up to eight adult playground swings, each delivering a collection of unnervingly entertaining virtual reality worlds

Co-commissioned by Norfolk & Norwich Festival, Horizon Digital Economy Research, Arts Council England, Greenwich + Docklands International Festival.

Co-produced by Norfolk & Norwich Festival, Horizon Digital Economy Research and Thrill Laboratory.

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1) Artistic Overview

VR PLAYGROUND comprises of up to 8 modular swing units (including 1 which can be adapted for wheelchair use) that allow an audience member to participate in a VR experience every 5 minutes (the VR experience last for approximately 2.5 minutes within this, with time given to switch to the next user). Visit http://thrilllaboratory.com/vr-playground-at-norfolk-norwich-festival/ to see VR Playground installed in several different locations around Norfolk & Norwich Festival 2017. 8 swings can entertain 96 riders per hour when running at peak efficiency, and the spectacle is designed to entertain the queuing audience.

VR PLAYGROUND is an immersive installation created by artist Brendan Walker. It is based on two popular entertainment technologies: the multi millennia-old swing and the 21st century virtual reality headset - the former designed to excite the vestibular system, the latter designed to excite the visual cortex.

Each site-specific installation can be configured from up to 8 modular structural cube units. The 2.6m cube unit is a sculptural interpretation of the classic playground swing A-frame structure. Each cube unit contains: a playground chain swing - rated for adults; a hidden motion sensor fixed to the seat; a VR headset and audio headphones.

Each headset is loaded with four geometric virtual worlds, which can be selected by the rider. Using motion sensors on the swing seat (Samsung S7 phone) and VR headset (Samsung S7 phone inside Samsung Galaxy headset), movement and gaze in the virtual world is able to accurately track movement and gaze in the real world. Presence in the virtual world is reinforced by synchronised sensations of swinging in the real world. Over the course of 2.5 minutes, riders are made to believe that they are moving in incredible ways: bouncing, rolling and swooping in the virtual world. What began as a comfortable and entertaining solitary experience becomes an uncomfortable performance played to curious queuing spectators, who are eager to experience what's creating such a response.

All devices sit on a local WiFi network, which is provided. This network links to the world wide web via 4G connectivity (also provided) or via the venues own wired connection should 4G not be available (to be assessed case-by-case).

2) Practical overview

The physical installation is made up of two components, which are managed separately: the ride structure units, and the VR digital technology.

Swing structure units are stored by Norfolk and Norwich Festival (NNF). They are heavy (2500Kg for 8 swings). They are often transported in the UK via hire vans driven by our build-crew, and via a 3rd party freighting company for venues outside the UK. We have two-build crew who travel to site to build the units. Our build crew work with local crew provided by the presenter. Our build crew return to take down the units and pack them away.

The VR digital technology is hired from the University of Nottingham. It is packed into 12 large peli-briefcases (for 8 swings). It is either couriered direct to site, couriered to NNF to join the swings for transportation, or transported personally by our Ride Technician. The Ride Technician installs all technology on the swing structure units once built. He remains with VR Playground throughout the booking. He removes the technology at the end of each day, and installs at the beginning of the next day.

Each swing unit is cared for by one operator. These operators are provided by the presenter, and are often volunteers. The presenter will provide ushers, who are also often volunteers, to issue tickets and manage the queue line. Operators and ushers are trained and managed by our Ride Technician.

The artist may attend to personally manage the siting, installation, staff training, and first day of operation of VR Playground at each venue.

3) Project management

The complete VR Playground package is delivered by artist **Brendan Walker** (owner of Thrill Laboratory and VR Playground) working with co-production partner **Norfolk and Norwich Festival (NNF)**. Brendan Walker is responsible for delivering the public facing experience. NNF is responsible for logistics, including: scheduling; staff transportation; equipment freighting; accommodation; and per diems. Any hire fee quoted will cover on-site installation and delivery of the public facing experience, and will be invoiced by Brendan Walker. NNF will work directly with the presenter to develop the schedule and a cost effective logistics plan. Where possible, we request that any costs associated with logistical planning are paid directly by the presenter. NNF will invoice the presenter directly for costs associated with logistics not able to be covered in this manner.

The presenting venue will enter into contractual agreement directly with the artists, and will reflect the above points.

4) VR digital technology and swing structure units

The cube units are built as 2.6m cube frames. From this frame swing chains and seat are attached. The units are free standing and built as individual cube units, or can be interconnected to create a linear series of cube units.

A smartphone sensor is attached to the swing seat to capture motion data to be used by the VR headsets. The VR headsets are wireless. The headphones are passive noise cancelling, but it would be good to understand if there is planned to be any other shows that generate noise nearby.

5) Age recommendation

VR Playground comes with an age recommendation of 11+. Please see risk assessment for more information, and rider Terms and Conditions for more information. This age restriction is set in response to research connected to eyesight development of children, and a child's ability to stop the swing safely while sat on a seat designed for adults.

6) Site requirements

VR Playground can work in a variety of environments, both indoor and outdoor. The playing space needs to be, broadly speaking, flat and level. Each unit can work on grass or hard standing, but will work best on a hard level surface. Ideally a site visit would be taken in advance of presentation.
There needs to be a height differentiation of no more than 100mm between the front and the back, or from one side to the other, of the units. The base of each unit needs to be level in order for the swing to work. If playing on grass, the site needs to have good drainage and be completely dry at the time of presentation.

There needs to be vehicle access to the site (sprinter van size).

The site needs to have 2.6 meters squared for each unit, plus 1m safe area fore and aft of swinging direction. Suitable viewing and queuing space is also required.

In order to keep the units running, we require a **secure space** to be able to charge replacement units close by, ideally within 100 meters. This space needs to be as cool as possible as technology overheating is an issue with mobile phones running VR. Forced air (fan) cooling is requested where ambient air temperature is over 20 degrees, and technology should not be in direct sunlight.

If the units are planned to be used in darkness, site lighting will be required. Please talk to us if you are planning on this.

Power: We require 2 x 13 Amp rated mains power sockets in the secure space. We will draw approximately 8 Amps from each socket. We will provide multi-ways to split beyond this.

7) Wheelchair access

There is a wheelchair accessible swing option. If the presenter wishes to take up this option then this must be mentioned at time of booking. A special platform will be supplied and fitted at the time of installation, and training given to the venue. The rear of this wheelchair-access unit must be on flat level ground, and either level or higher than the front of the unit. A wheelchair ramp will be provided to gain access over the unit threshold (a 48.2mm diameter tube)

8) Get in/out

Once arrived at site, the get in and get out time of swing structures is dependent on how many swings are being presented. For 5 or more swings, 3 x local build crew are requested to assist our 2 x build crew who will travel with the show to install and de-install the swings. For 1 to 4 swings, 2 local crew are requested to assist our 1 x build crew.

Local crew required to come equipped with PPE provided by the festival: specifically hard hats, steel toe capped shoes, and gloves for working in wet conditions. Barrier (tape or steel) to be provided by festival to create safe working area during get in / out.

GET IN: approximate timings
Arrive and site swings
Build frames x 3 hours (4 swings) x 5 hours (8 swings)
Set up VR x 1 hour **after** frames built up
Volunteer training x 1 hour

GET OUT: approximate timings
Take down frames x 1.5 hours (4 swings) x 2.5 hours (8 swings)
De-install VR x 1 hour can happen concurrently as frames are taken down

Frames will be travelling in van from Norwich, and VR from Nottingham (see section 11. Freight). We may need to get in the day before, and/or get out day after depending on festival location and open times, this may incur additional travel and accommodation.

Depending on the length of time of presentation, we will discuss with you the most cost effective option, with build crew either (a) returning home before coming back to de-install the units, and transport the units back to Norwich (b) remaining on site.

9) Ride operator and usher requirements

Each swing requires 1 operator to be provided by the festival. The queue requires at least one usher to issue tickets, and ideally a second usher to manage the queue line, both to be provided by the festival. Before *VR playground* is opened to the public it is essential that our Ride Technician train local ride operators and ushers. This requires operators reading one page of simple instructions, watching a 3-minute video and receiving direct instruction from our technician. Careful arrangements should be made

for any rotation of staff and agreed with us. These requirements are best talked through with ourselves so we can agree on levels of support during the operating times.

10) Security requirements

VR Playground requires the location of swing units to be secure over night, and swings to be locked to the structure (locks provided). All technology should be removed from the site over night, secured, and charged. Security should be discussed with us once the specific site has been agreed.

11) Freight

The installation consists of two parts: (a) the swing structures, which are stored in Norwich, and (b) the VR digital technology, which is stored at the University of Nottingham. Depending on the number of units being presented, we will work with you to determine transportation method and cost to transport the structures and technology to you in the most efficient and cost effective way possible.

Steelwork for all 8 swings weighs around 2,200 Kg. The main volume is made up of 144 x 48.2mm steel tubes around 2.4m in length, crates of tube fixtures (around 320 fixtures in total), plus swing seats and chains

If in UK, the swing structures will likely be transported via sprinter transit van. Each van can carry up to 4 swing units. NNF can supply indicative prices.

The digital technology will either be freighted from the University of Nottingham to Norwich, where it will join the units going to venue. Or the Ride Technician will collect and transport the technology from the University of Nottingham. It will be the same process in reverse on the return journey.

If crew-members are used to transport structures or technology, their time will become part of the freighting cost.

12) Technical support

Technical support is normally provided in person by the Ride Technician during volunteer training and commissioning the ride, and throughout ride operation during hire (max 8 hours / day). For longer hires, it may be cost effective to train your own digital technician for the duration of operation. Speak to us, and we'll help you assess the cost benefits and risks. Additional support is provided over the phone throughout hours of operation. It would be good to agree a list of operating times so that telephone support can be arranged. Extra sets of equipment are provided in case of failure. Rudimentary fault-finding and fault management training will be provided for volunteers and venue crew, expert fault-finding and fault management will be provided by the Ride Technician, with phone support backup.

13) Schedule

An illustrative draft schedule can be provided by NNF, showing the movement of people and equipment, and times to setup and take down. A detailed schedule will be created once location, operating and volunteer training times have been confirmed. In theory the experience can run for as long as you like once operational, dependent on local licensing or site access restrictions, adequate breaks and running time for volunteers, and the ability to charge the second set of equipment and replace VR units when batteries are running low.

14) Education work

Please talk to us if you are interested in any workshops or education work happening around the *VR playground*.

15) Travel, accommodation and other on costs

Any travel costs, staff travel time, accommodation, food, per diems, and expenses will be agreed with you by NNF in advance as part of logistical planning.

Get in and get out days are costed as part of the hire fee. Any additional day travel either side of the get in and get out days will be charged separately by NNF.

16) Risk Assessment

Risk Assessment is presented as a separate document. This can be adjusted if required after a site visit.

17) Public Liability

"Brendan Walker T/A Aerial and/or Thrill Laboratory" carries comprehensive public liability insurance for the transportation, installation and public operation of VR Playground, which covers himself, his build crew and Ride Technician.