

# THERAPEUTIC VIRTUAL LANDSCAPES

Fostering Health and Wellbeing in Military Personnel, Their Families, and Their Communities

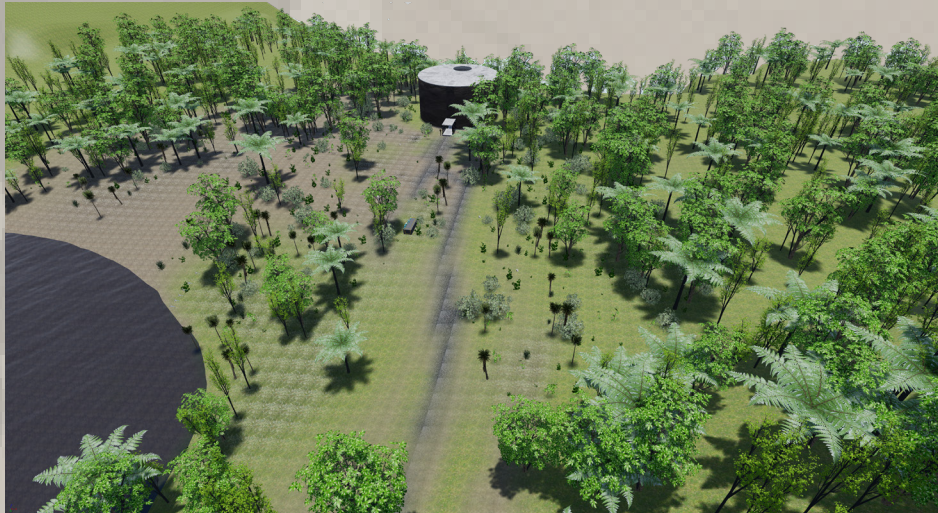
## PURPOSE



A military lifestyle can have profound impacts on an individual's health and wellbeing. Typical life stresses need to be dealt with alongside additional vocational stresses such as continual relocation, prolonged separation, and repeated exposure to trauma and traumatic events. The need for temporary reprieve or relief is often unmet.

Increasingly, Virtual Reality (VR) environments are being used as bridging mechanisms to provide space and aid with therapies, however these are very clinical in nature and little is published with respect to the use of VR for ongoing health and wellbeing.

This research investigated the opportunities for ongoing therapeutic and social experiences in virtual landscapes, and the benefits this could provide to New Zealand's Defence Force community in regards to healthy wellbeing. It specifically examined therapeutic design attributes of landscape and the ability for these to be simulated in an immersive Virtual Reality environment.



## METHOD



A thematic analysis of literature was undertaken which addressed:

- Creating immersive VR environments
- Current applications of VR in the health sector
- Relationship between landscape and healthy wellbeing

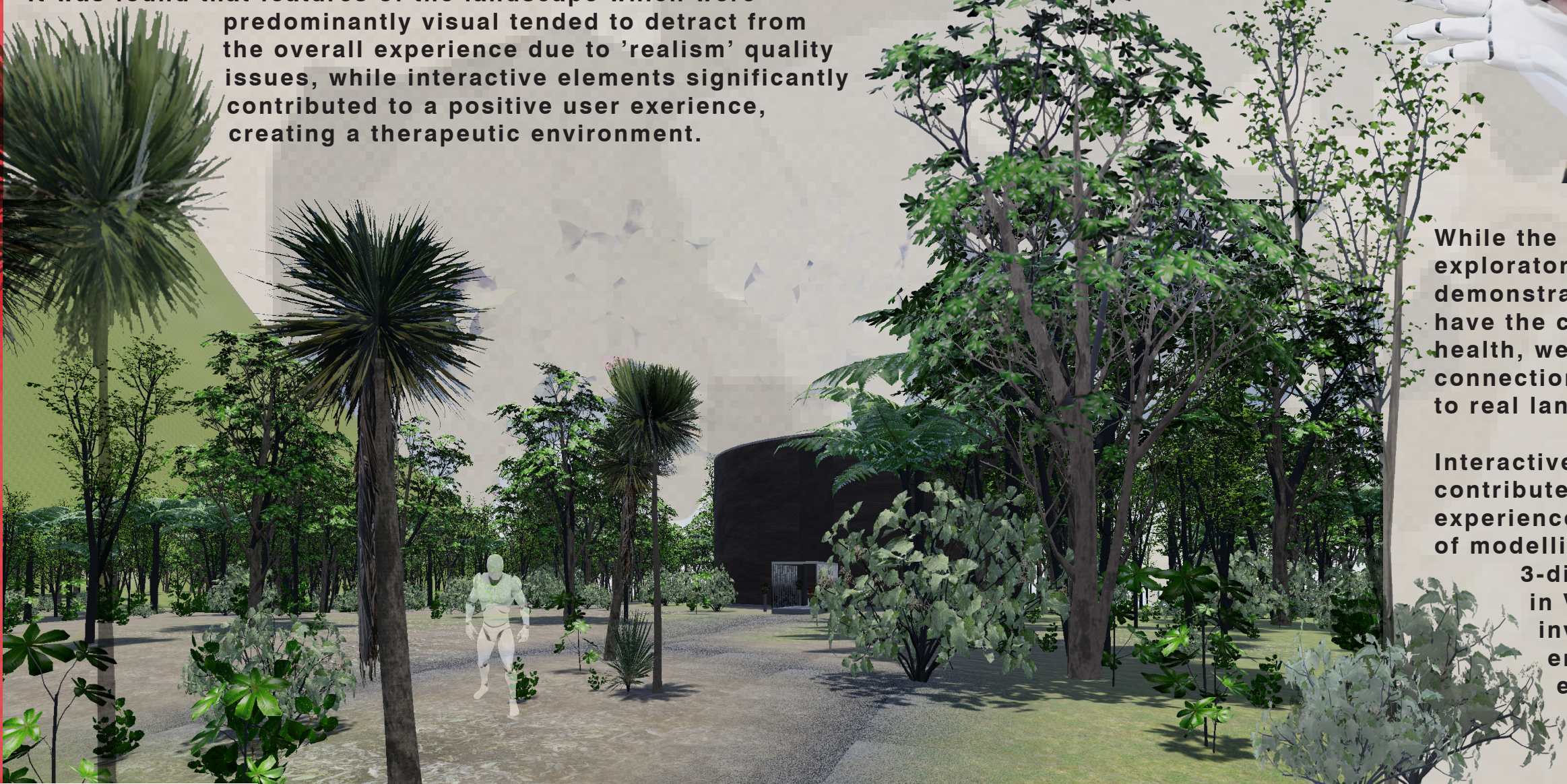
From this analysis it was found that :

- It is necessary to create a sense of 'physical and social presence' for the VR user by incorporating both visual and multisensory elements, such as textures, shadows, audio such as birdsong, haptic feedback, and interactive objects such as balls which could be picked up and thrown.
- New Zealanders, and especially Maori, have an intrinsic relationship to landscape, with landscape holding a strong affiliation to healthy wellbeing through
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A VR environment was then modelled, simulating a New Zealand Native Bush precedent. Common endemic New Zealand plants and trees were modelled specifically to establish a sense of familiarity for the intended user, and contribute to a physical sense of feeling like the user is in New Zealand. Audio of New Zealand birds such as Tui were added into the landscape, and the users given a body to further contribute to the sense of feeling like they were in the environment. Interactive elements such as balls as sticks which could be picked up were also modelled.

It was found that features of the landscape which were predominantly visual tended to detract from the overall experience due to 'realism' quality issues, while interactive elements significantly contributed to a positive user experience, creating a therapeutic environment.

## OUTCOMES



While the study was highly exploratory in nature, the results demonstrated VR landscapes have the capacity to foster health, wellbeing, and social connection in a manner similar to real landscapes.

Interactive features significantly contributed to a positive user experience. However, methods of modelling and representing 3-dimensional vegetation in VR needs to be investigated further to enhance a 'realistic' experience for users.

