

ENABLING WILDERNESS: CREATING THE OPPORTUNITY FOR DISABLED TRAMPING WITHIN NEW ZEALAND'S NATIONAL PARKS.

Matt McKone, Jacqueline McIntosh, Bruno Marques

Victoria University of Wellington, PO Box 600, Wellington, NZ

Jacqueline.mcintosh@vuw.ac.nz

Bruno.marques@vuw.ac.nz

Abstract

Internationally known for its picturesque landscape, New Zealand attracts both locals and tourists to experience these first hand by walking the many tracks around the country. The most notable of these have been established as 'Great Walks' involving multi-day treks for fit individuals. The contribution of outdoor experience is well researched in the creation of a sense of wellbeing. However, not every fit individual is physically able to experience some of New Zealand's most significant landscapes due to the difficulty of access. This paper proposes a new Great Walk for New Zealand that would allow athletes with physical impairment to experience New Zealand wilderness and unique landscapes. In doing so, it will provide the opportunity for physically impaired people to either continue hiking or to discover a new outdoor activity which can aid them in creating personal connections to the land they are from or visiting and improve their sense of being. Physically pulling/pushing and manoeuvring through the landscape, this proposal offers impaired users to engage with challenging different terrains in a multi-sensorial manner. This paper reports on a multidisciplinary literature review, first-hand observations of user behaviours and a review of existing case studies. It continues with an iterative design process exploring how landscape architecture can help in creating a multi-sensorial experience for those with disabilities. This study claims a deeper connection with nature by offering a suitable design that allows disabled people to experience outdoors by themselves. While they may traverse the track in a group mixing with the able bodied, completing the trail without the constant aid of others will create a greater sense of achievement and contribute to life-long wellbeing.

Keywords: Disabled, wheelchair, landscape architecture, multi-sensory, well-being,

Introduction

New Zealand is a country internationally renowned for its picturesque landscapes. Popular travel guide, The Lonely Planet writes that it is the host to "sublime forests, mountains, lakes, beaches and fiords" making New Zealand "one of the best destinations on earth" (Belich et al., 2004). Everywhere you look there are awe-inspiring landscapes, easily experienced through walks and longer treks.

National Parks are considered a key part of the national identity and help connect to the natural heritage. This underlying belief also underpins the principles of well-being as evidenced by the mission statement that 'New Zealanders gain environmental, social and economic benefits from healthy functioning ecosystems, recreation opportunities, and living our history' (Conservation, 2012). However, currently only a particular demographic of the population is able to adventure and explore

within some of the most beautiful areas of New Zealand (Ministry of Education of New Zealand, 2012).

Experiencing nature is an intimate and personal journey. To form the type of connection to the land that New Zealanders advocate, one must immerse themselves into the landscape. Mick Abbott, in his PhD thesis 'Designing Wilderness as a Phenomenological Landscape', breaks down how we experience a landscape into two categories; the visual and the haptic. He explains in in terms of what each category affords and that anyone can "gain a visual appreciation of the surrounding endemic flora", however without actually being engaged within the site, such as walking the track, it is "difficult to assert that the track is an integrated part of the ecologically indigenous landscape", making it difficult to recognise the complex beauty of a place (Abbott, 2008, p.233). To fully experience wilderness one needs to not only see, but also feel the landscape and the most popular way 'kiwis' currently connect with their country's national identity is through one of the thousands of walking tracks, locally known as tramps, around New Zealand.

Tramping within New Zealand is the third most popular activity, increasing due to international and local tourism, estimated as involving approximately 1.7million people in 2013 (Angus & Associates Limited, 2013). Considering that the national population of New Zealand is just over 4 million people, this is a significant number. Among the 2895+ walking tracks around New Zealand (Pietzsch, 2010), are nine 'Great Walks' that traverse "the most awe-inspiring landscapes on premiere walking tracks".

Currently, these landscapes are only available to those who are physically fit and capable of walking long distances through rugged terrain. They are inaccessible to those fit people who have physical impairments that prevent them from walking. According to Statistics New Zealand and their 2013 Disability Survey, 24% of New Zealand's population is classed to be living with some form of impairment (Statistics New Zealand, 2013). Of these generally impaired individuals, 18% over the age of 15 are living with a physical impairment which prevents them from walking. This equates to approximately 632,000 New Zealanders that cannot immerse themselves in nature for a period of days; creating the memories, experiences, and an overall appreciation for the country that they call home. Internationally these numbers are significantly more.

People who live with a physical disability tend to form other strengths, as their body compensates for their injuries. The documentary film 'Murderball', directed by Henry Rubin and Dana Shapiro, follows the American and Canadian national wheelchair-rugby teams and their pursuit for a Paralympic Gold Medal. Through the interviews they conduct and the footage they acquire of the players, it is clearly evident that their upper-body and core are considerably strengthened as their body adjusts for the loss of their legs. However, there are also other added challenges relating to impairment, such as when the individual is confronted with the requirement to move in and out of the wheelchair. What the film 'Murderball' illuminates is the courage, determination and athleticism within the disabled community, the key attributes required to complete a Great Walk.

Defining the Disability.

Designing for disabled access within a 'Great Walk' will appeal to a specific client demographic as, even with the able-bodied demographic, completing a multi-day trek is not for everyone. Traversing such a track tests a user's mental capability, pushing them through rough terrains and what seem to be never-ending inclines. In addition to traversing difficult terrain the users must

carry their food cooking equipment, clothing and bedding, weighing a minimum of 10kg, therefore requiring a suitable amount of physical fitness as well as mental.

This study proposes design modifications to an existing track to allow it to be accessible for 'impaired athletes' and 'disabled adventurers'. These are people who have an interest in the outdoors but, due to some form of incident, are no longer able to partake in such activities as they have been confined in a wheelchair. These are people who have heightened upper-body strength due to their training to compensate for the loss of their legs. The aim of this study is to allow for someone in a wheelchair to be able to complete the track independently. It seeks design interventions to advantage their individual personal strengths while minimising the disabling elements which privilege the able bodied.

A precedent client can be found in the form of Caleb Brousseau, a Canadian Paralympic athlete and 2014 snowboarding bronze medallist. As an able bodied snowboarder with a promising future, he misjudged a jump leading a broken back and the loss of the use of his legs in 2007. However, rather than let this impairment halt his interest in the outdoors, he joined the Canadian Para-Alpine Ski team during the winter and became a whitewater kayak instructor in the summer (Paralympic.ca, 2016).

Brousseau describes his initial experiences of impairment as frustrating saying "I was bored" and "I was spending too much time at home". Trying the new sport of kayaking, he discovered that he could independently recover from a mistake, which was hugely empowering and made a significant contribution to his wellbeing.

"First time I went kayaking, we ended up rolling over and as soon as I rolled over I felt as if these chains fell off of me... Every time I roll upside down I get super soaked, this is freedom! It feels like I'm not in a chair... it feels like I don't have the restriction I live with everyday... It allows me to be free." (Trotman, 2014)

This is just one of the many examples Caleb provided as an inspirational model for this project; someone who doesn't consider themselves 'disabled' but rather 'enabled' in another aspect.

Literature Review

Designers throughout history have used mobility models and ergonomics to inform their designs. From Leonardo Da Vinci's Vitruvian Man to Le Corbusier's Modulor Man and their subsequent influences, developments in mobility and ergonomics have been hugely influential. Darni Struijck, in her thesis "Augmenting Access & Mobility" evolves these models for someone confined to a mobility chair. She writes about the connection between human and chair, regarding to the disabled person as 'posthuman' and that the Prosthetic Human "specifically questions the salient line between body and technology" (Struijck, 2015, p.116). "The Prosthetic Human stands for universality, accessibility and mobility where imperfection is the new ideal. The Prosthetic Human grid and scale offers a series of measures that reconcile to a human being in a wheelchair" (Struijck, 2015, p.116).

While it is important to understand the physical parameters of the wheelchair bound person, perceiving the mental impact of a disability is also important. In a research study involving a series of interviews with newly impaired individuals, reported in "The Experience of Being Grounded" Barlew explains that there are four categories of mental difficulties that someone who is

physically disabled will experience; humiliation, frustration, loss, and humility (Barlew et al., 2013).

The first category--humiliation, is an experience that comes from the reaction of strangers and friends to difference. The public arena becomes a stage that not everyone wants to be involved in and some "plan their day in such a way to avoid humiliation" (Barlew et al., 2013). The humiliation often leads to the second mental difficulty 'frustration'. Frustration is an emotion that is commonly felt by people with a physical impairment. Constant fears of falling, the inability to do ordinary things with ease, and the feeling of dependency and that one is a burden on society. With a disability comes loss, the loss of independence and privacy, the need for help to move, to complete a task or even to go to the toilet. It also brings about a loss of freedom, as they cannot participate in activities with their friends resulting in emotions such as loneliness and helplessness. The final category is humility and this is described to be a humbling experience, constantly reminding themselves that they are not fully able. Barlew separates this from humiliation through how it is felt. Humility is the personal acknowledgement of limitations and humiliation is the perceived negative response from the public. These emotions are important to understand when designing a track that could take 5-7 days.

Nature plays an essential role in our lives as human beings, offering us mental and physical benefits while also improving our total wellbeing (Humberstone, 2015). In her writing, 'Embodiment, Nature and Wellbeing', Barbara Humberstone conducts an investigation into whether there are actually benefits "afforded from being in forest and other green spaces". She references Geoff Cooper's book "Outdoors with Young People" where he wrote:

"On the way back from the nature trail, something had happened to change the group. They were more alert, more interested in what was around them; they were closer to each other." (Cooper, 1998, p.10)

What had produced the change was the need for play, for spontaneity and for adventure. A chance to feel the natural environment through their bodies, to release the tensions of the disciplined nature study they had experienced in the morning. 'To run, skip, jump and feel the freedom of a wild area, in a new and uncertain environment' (Cooper, 1998). Being immersed within nature affords an emotional experience that is different for each individual, creating the sense of freedom that is not generally experienced within urban environments. Humberstone explores this situation asking what it is about these spaces that creates this sense of wellbeing and health.

"People construct a sense of themselves and their environment through single and collective understandings of self and sense of place. Through embodied, sentient practises (such as walking, standing, climbing, surfing and so forth), by way of the sense, people engage with diverse natural spaces and places engendering non-cognitive affective feelings and emotions." (Humberstone, 2015, p.63)

Experiencing nature connects human beings to the land; it signifies where they are from and humbles them in realising the complex ecologies that they are a part of. Both Humberstone

(2015) and Cooper (1998) refer to the experiences of able-bodied people, people who can already walk and experience the outdoors by their own will.

Designing the Experience

While, landscapes surround our lives, subconsciously directing us when we walk, commanding our visual focus and playing with our emotions as we complete a journey, how this occurs is less well understood. Exploring why we feel different emotions at different locations W.J.T Mitchell (2012), in his book 'Landscape and Power', challenges the existing notion of what a landscape is; creating the argument that it is in fact a verb rather than a noun. He contrasts the traditional understanding of a landscape as; the sublime, picturesque and pastoral, and suggests that instead of provoking images for visual appreciation/interpretation they create moments that form an individual's identity.

Mitchell argues that a landscape is too often "overlooked" and not "looked at" and that the majority of individuals make the landscape's power redundant by viewing it as a background:

"As the background within which a figure, form, or narrative act emerges, landscape exerts the passive force of setting, scene, and sight... This peculiar indeterminacy reveals itself as a kind of redundancy when one rephrases the landscape imperative as we do in everyday parlance: "look at the view." Not "look at the mountain." (Mitchell, 2005, p.vii)

However, it is not every landscape that can provoke personal experiences and emotions. Examples of landscapes which provoke emotion can be understood through artworks, in particular the artworks of the sublime. The Romantic painters sought to elicit emotion through their representation. The portrayed landscapes were often found deep in the wilderness and in areas few people adventure to. Taking W.J.T. Mitchell's ideas and arguments, and analysing artworks of the sublime while reflecting on personal experience with two Great Walks and two Glacial Tracks, eight emotional responses have been identified. These are scenes with the potential to elicit strong emotion and to showcase the 'power' held within New Zealand's signature landscapes. These emotions identified are:

1. Fear: the point in the journey where mental capability is seriously tested.
2. Awe: a moment where one marvels at the wondrous landscape surrounding them.
3. Humility: a feeling of realisation of larger forces at play.
4. Frustration: a response to the winding/repetitive nature of wilderness and the possibility of getting lost.
5. Pride: an emotional pause reflecting on the journey to a desired location.
6. Reminiscence/Introspection: an individual reflection of the journey, through life and the track.
7. Freedom: a rush caused by the release from urban restrictions.
8. Spirituality: a personal connection between human and land.

Emotional responses can be designed for.

"Natural features such as trees, stones, water, animals, and dwellings can be read as symbols in religious, psychological, or political allegories... an instrument of cultural power, perhaps even an agent of power that is independent of human intentions" (Mitchell, 1994, p.1)

Design Considerations

Taking Stuijck's version of the Prosthetic Human as a starting point, the mobility framework for a person in a wheelchair has been modified to acknowledge new possibilities for the bodies' range of movement. For example, they can turn on a more defined axis compared to someone requiring full balance; i.e. an able-bodied person; through effectively using their arms as legs. This strength is constantly developed leading to opportunities that involve lifting themselves to move around obstacles.

Understanding the disabled person's 'superpowers' will create a new way of tramping, unique to their abilities involving pulley systems, cable crossings and others mechanisms that to an able-bodied person would seem useless.

The two design considerations, are considering the unique attributes of the physically impaired person, modifying the track to privilege their strengthened abilities and to eliminate disabling track features. This addresses the physical. Designing the track for immersion in nature with references to emotionally laden views and multi-sensory experience is equally important. While the impaired trumper may traverse the track in a group mixing with the able bodied, completing the trek without the constant aid of others will create a greater sense of achievement and contribute to life-long wellbeing.

References

- Abbott, M. (2008). *Designing wilderness as a phenomenological landscape*.
- Barlew, L., Secrest, J., Guo, Z., Fell, N. and Haban, G. (2013). The Experience of Being Grounded: A Phenomenological Study of Living with a Wheelchair. *Rehabilitation Nursing*, 38(4), pp.193-201.
- Belich, J., Biuso, J., Brown, R. and Harding, P. (2004). *New Zealand*. Footscray, Vic.: Lonely Planet.
- Caleb*. (2014). [film] Blair Trotman.
- Cooper, G. (1998). *Outdoors with young people*. Lyme Regis, Dorset: Russell House.
- Department of Conservation, (2012). *Statement of Intent 2012-2017*. Wellington: Department of Conservation.
- Humberstone, B. (2015). Embodiment, Nature and Wellbeing. *Experiencing the Outdoors*. [journal article]
- Mitchell, W. (1994). *Landscape and Power*. Chicago: University of Chicago Press.
- Mitchell, W. (2005). *Landscape and power*. 2nd ed. Chicago: University of Chicago Press.
- Murderball*. (2005). [film] Henry Alex Rubin, Dana Adam Shapiro.
- Paralympic.ca. (2016). *Caleb Brousseau | Canadian Paralympic Committee*. [online] Available at: <http://paralympic.ca/caleb-brousseau> [Accessed 14 May 2016].
- Pietzsch, D. (2016). *Guided Hikes & Heli Hikes | Guided Walks New Zealand*. [online] Nzwalks.co.nz. Available at: <http://www.nzwalks.co.nz> [Accessed 26 Apr. 2016].
- Stats.govt.nz. (2016). *Disability Survey: 2013*. [online] Available at: http://www.stats.govt.nz/browse_for_stats/health/disabilities/DisabilitySurvey_HOTP2013.aspx [Accessed 13 Feb. 2016].
- Struijck, D. (2015). *Augmenting Access & Mobility*. Victoria University of Wellington.
- Zealand, E. (2016). *Ministry of Education*. [online] Education in New Zealand. Available at: <http://www.education.govt.nz/ministry-of-education/> [Accessed 26 Jul. 2016].