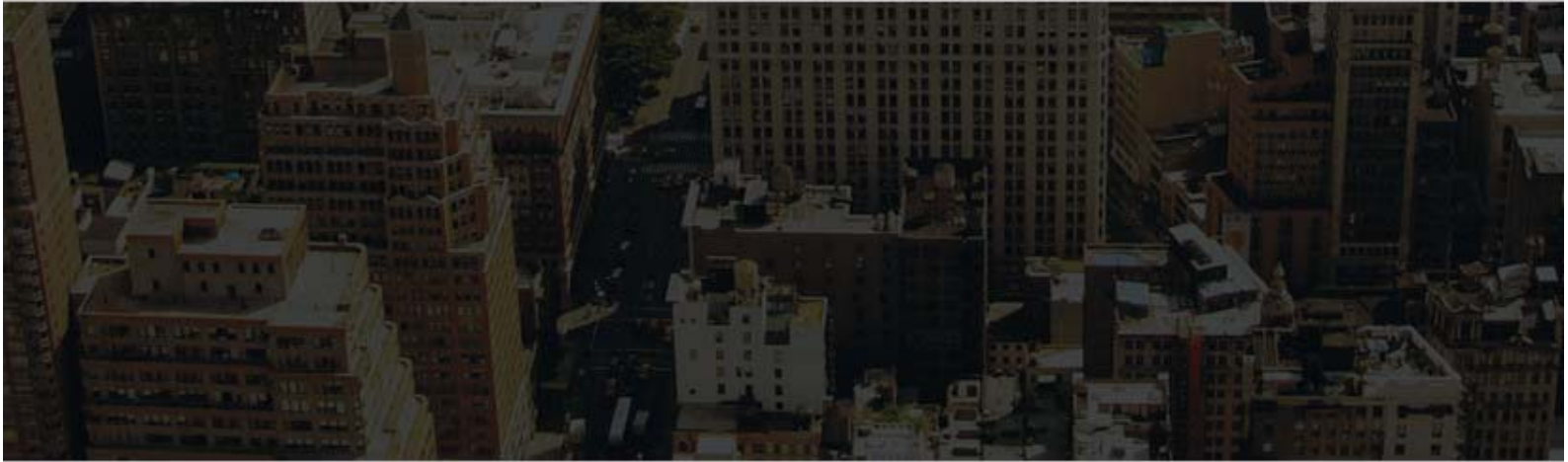


# AMPS Proceedings Series 10



Cities, Communities and Homes:  
Is the Urban Future Livable?

# AMPS CONFERENCE 10

**Cities, Communities and Homes: Is the Urban Future Livable?**

AMPS, Architecture\_MPS; University of Derby  
22—23 June, 2017

## **Cities, Communities and Homes: Is the Urban Future Livable?**

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### INTRODUCTION

This publication is the product of the conference *Cities, Communities and Homes: Is the Urban Future Livable?* held at the University of Derby in 2018. The premise of the conference and this publication is that the forces shaping life in cities are complex. The economies they are based on are multiple. Some are growing exponentially, others are shrinking. Some pride themselves on architectural heritage, others are seeking to build and rebrand. Some are old, some are new. Inevitably their urban fabrics vary. The communities that live in these places reflect these conditions. Some are long-standing, others are new and in-form. Sometimes they are active, on occasion homogenous. More generally they are diverse. These communities need, and want, a say in their futures. Some are well connected and affluent, others suffer deprivation and social exclusion. A constant in the midst of this complexity is their need to be housed – whether by themselves, the market, or governments.

The conference and this subsequent publication seek to explore how the three issues of city development, sense of community and housing need, all combine to make lives in our cities livable – or not. How will our urban environments change in the near future? Are the cities we live in now likely to contract or expand? How will these changes impact on communities and the way they are housed? Will new technologies facilitate community engagement with planning? Will resident voices be heard by planners? Will unaffordable housing turn some cities into enclaves of the wealthy, or will the private sector and personal preference gate our communities?

-

This publication, and the conference which it documents, were organised by the research organisation AMPS, its academic journal Architecture\_MPS, and the College of Engineering & Technology at the University of Derby. It formed part of the AMPS program of events, *Housing – Critical Futures*.

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## Cities, Communities and Homes: Is the Urban Future Livable?

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# THE ROLE OF CULTURAL ORIENTATION IN THERAPEUTIC LANDSCAPE DESIGN

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## INTRODUCTION

Internationally, the population of people over 60 years of age is predicted to triple from 2010 to 2050, raising the number of aged citizens from 8% to 16% of the population<sup>1</sup>. This ageing population is expected to create challenges for planners and designers to find more effective ways of maintaining health and social wellbeing into old age<sup>23</sup>. Ethnic diversity will be a primary concern for addressing uptake barriers in relation to physical activity and exercise for this demographic, whom experience great disparity in health outcomes<sup>4</sup>. According to the World Health Organisation (WHO), indigenous people embody a diverse range of cultures, religions, and traditions, yet are continuing to be undervalued and often experience great inequality in health than non-indigenous populations due to lack of fiscal or cultural accessibility<sup>5</sup>. It is summarised that "indigenous peoples remain on the margins of society: they are poorer, less educated, die at a younger age, are much more likely to commit suicide, and are generally in worse health than the rest of the population"<sup>6</sup>. With the number of disabled elderly expected to double from 2013 to 2038, there is the risk that with an increasing inaccessibility to health care, the demographic groups which are already experiencing uptake barriers and poor health may be further disadvantaged<sup>7</sup>.

However, due to New Zealand's increasing rates of immigration, concerns for health inequality is not limited to the indigenous population. The country is increasingly experiencing a shift from a bicultural to multicultural society, resulting in a more diverse range of cultural barriers and resultant problematic health outcomes, of which the country is ill prepared for<sup>8</sup>. This can be seen in the higher rates of disability not only in Maori persons, but also Pacific, Asian and other, comparative to the dominant European cohort<sup>9</sup>. It is predicted that the biggest demographic rise will be from Asian groups, rising from 12.2% to 20.9% of the population in 2038<sup>10</sup>. With the growth of the older population expected to increase not only in size, but diversity, planners and policy makers will be forced to consider the future needs and expectations of higher proportions of Maori, Pacific and Asian people<sup>11</sup>.

While international research has determined that the frequency of general disability has declined, the prevalence and distribution of chronic physical morbidities has shifted<sup>12</sup>. In the coming decades, this ageing population will place a greater pressure on the health care system, to manage the rising cohort of elderly persons whom are experiencing a range of costly comorbidities, with high care requirements<sup>13</sup>. If unaddressed, elderly morbidity will have excessive outlays not only for the health system but for individual independence and quality of life. Widespread effective population-based preventative or rehabilitative measures will be imperative for developing resilience in older adults, to mitigate these negative health implications<sup>14</sup>. The framework known as 'aging in place', is globally considered, "the ability to live in one's own home and community safely, independently, and

comfortably, regardless of age, income, or ability level”<sup>15</sup>. Planning and urban designers are increasingly using frameworks such as this for developing urban environments, which support ageing populations.

Elderly are a main user of open green space, therefore, the usefulness of the public realm for population-based interventions, must not be undervalued<sup>1617</sup>. These outdoor environments offer an important platform for engaging older adults from a variety of social, cultural and ethnic orientations for the purpose of improving or maintaining their physical and mental health, as well as facilitating their social and cultural connections<sup>18</sup>. Furthermore, through targeted physical activity these landscapes have the potential to combat costly morbidity, not limited to, heart disease, diabetes and cancer<sup>19</sup>. In addition, reduced strength and lack of balance contributing to elderly falls, the most common cause of injury and fear, can be combatted through targeted physical activity<sup>2021</sup>. In addition, beneficial exercise and engagement with nature has proven mental health benefits by reducing stress and aiding mental disorders including dementia and depression<sup>2223</sup>. Consequently, a potential solution to rising elderly morbidity is to deliver therapeutic landscapes which incorporate age-specific outdoor interactive equipment or landscape elements, eHealth technologies or motivational strategies, into public green space, to encourage beneficial physical activity for a range of capabilities. This may be a cost-effective, sustainable approach to assist with supporting the increasing proportion of physically impaired elders in our communities<sup>24</sup>. A primary concern however, is that the ethnically diverse people identified, often most in need of these interventions are unreachable through standardised western methods, despite the accessibility of the public realm<sup>25</sup>.

## METHODS

This project broadly investigates the many different landscape requirements that contribute to the accommodation of ethnic diversity. Using a multidisciplinary lens, the project compares existing technologies such as exercise equipment for the elderly, motivational strategies and eHealth technologies with research that addresses health benefits and wellbeing. The methodology of the research involves an exploration of literature of relevant participation barriers for engagement with the outlined physical activity strategies. The published literature was reviewed to identify studies on sociocultural barriers towards physical activity among various groups of elderly. Primary considerations included: different age ranges, gender, impairment types, physical capabilities, socio-economic status, and ethnic, religious and cultural orientations. Secondary considerations include: residential status, family compositions, marital relationships, and child care responsibilities.

## FINDINGS

It was found that exercise interventions which combine mixed types of physical activity such as aerobic, strength and balance training across a range of intensities were most effective in combatting a range of problematic disorders including cardiovascular diseases, neurological disorders, cancer, osteoarthritis, frailty, type 2 diabetes, obesity, depression and sleep problems<sup>26</sup>. It was found that currently outdoor exercise equipment is appropriate for training cardiovascular fitness, balance and muscle strengthening, however there are low adherence rates in this kind of exercise among older adults. Findings suggest that there are numerous barriers which prevent certain user demographics from engaging in this type of beneficial physical activity<sup>272829</sup>. While there were, many studies related to the benefits of using outdoor spaces for overall wellbeing and the adherence barriers for elderly people, very few studies analysed the suitability of outdoor exercise equipment for seniors of different demographic groups and cultural backgrounds. However, preliminary studies do suggest that physiological disparities because of detrimental inactivity, could be related to socio-cultural conditions and circumstances in the built environment<sup>3031</sup>.

While strategies such as the Green Prescription has significantly reduced inactivity in community-dwelling elderly New Zealanders, research has shown that residential-dwelling individuals have been harder to reach, and may be missing out on these benefits<sup>32</sup>. Furthermore, elderly persons over 80 years were considered the least active, as are women comparatively to men, increasing their susceptibility to chronic health conditions, reduced balance and mobility which commonly leads to injury from falls<sup>33</sup>. In addition specific minority ethnic groups were also disadvantaged, and may require the provision of culturally acceptable solutions for promoting physical activity in a more diverse manner<sup>34</sup>.

The research found that the barriers which sustained physical inactivity, could be considered under the following broad headings: practical barriers; socio-cultural barriers; and knowledge barriers. Practical barriers regarding physical activity of older adults refers to physical, medical and economic obstacles to physical activity that individuals face, often causing lack of accessibility. Socio-cultural barriers of elderly refer to societal cultural beliefs, and social or religious practices which influence perceived barriers, or prevent persons from engaging in activity. Knowledge barriers concerning inactivity of elderly refer to linked socio-cultural factors which mean that people from ethnic groups might not have accurate or full access to knowledge of the benefits of physical activity or health resources.

### **Practical barriers**

Self-efficacy is a person's perceived abilities to perform a certain behaviour to achieve a desired result. Research suggests that regardless of cultural difference, the barrier of self-efficacy is a problem to all elderly people<sup>35</sup>. Therefore, identified barriers may be genuine issues, or could be perceived barriers which equally impact the senior's ability to participate in physical activity. Main physical barriers were concerns regarding mobility and capability<sup>36</sup>. Many older people felt that certain health conditions prevented participation. This may be due to recommendations from health professional or merely a perceived barrier. Furthermore, with or without existing conditions, many articles recorded the concern adults had for becoming injured as they entered later years, as over 30% of elderly persons over 65 year, fall at least once each year<sup>37</sup>. Furthermore, more than 70% of seniors suffered from fear of further falls, resulting in lack of confidence, and avoidance of physical activity leading to a greater chance of falling<sup>38</sup>. Some seniors emphasised that they were wary of being knocked over by younger persons, which discouraged them from using facilities in public space<sup>39</sup>. To address these issues, it was suggested by seniors that separate recreational facilities should be provided which only cater to elderly needs, however this creates issues around exclusivity, in a context which is aiming to promote inclusive recreation in public space. Other concerns for safety were in respect to lack of supervision in outdoor situations, and/or lack of feedback in terms of the suitability of certain types of exercise<sup>40</sup>. Further practical barriers included: lack of access to health resources; and time pressures which limited engagement with physical activity<sup>41</sup>. It was found that although the majority of elderly persons agreed that exercise was important for maintaining health and wellbeing, yet nearly two-thirds do not include it as a high priority<sup>42</sup>.

### **Socio-cultural barriers**

Socio-cultural barriers were found to be the most difficult to overcome in a design sense. Cultural expectations, such as lack of social acceptability for older persons to exercise, was a significant external influence. It was found that there were certain stigmas around elitism and notions of masculinity, which discouraged females of various cultures<sup>43</sup>. This was not helped by societal, cultural or religious perceptions about wearing tight/exercise clothing or performing physical activity in public places. Additionally, a significant percentage of the demographic have social structures different to that of 'individualist' western values. Complex relationship with other family members, such as lack

of support from spouse and family, or living in extended families significantly contributed to exercise participation<sup>44</sup>. Furthermore ethnically diverse people from multi-generational family units may stay active differently to that of the dominant culture. Another dimension to this was childcare responsibilities which took priority over engagement with physical activity<sup>45</sup>. Therefore, it can be interpreted that the relationships with other family members or friends, may have a significant impact on a senior's engagement with physical activity, a factor often not considered in the design of elderly exercise equipment or health strategies. Furthermore, many religious or cultural beliefs such as perceived acceptability of elderly or ethnic persons to exercise or the appropriateness of certain types of physical activity and clothing, were found to contrast with standard western views, thus, preventing certain demographic groups from undertaking physical activity in certain contexts<sup>46</sup>.

### **Knowledge barriers**

An important knowledge barrier in New Zealand, is an education issue involving lack of awareness around why or how to participate in physical activity. Studies showed that people of lower socio-economic status had less educated individuals who had less knowledge around the importance of fitness, undertook less beneficial exercise and spent less time participating in physical activity per week. On a different note, it was also acknowledged that language or cultural barriers may be a problem in the success of exercise promotion, or in terms of signage which demonstrates correct ways of using interactive elements<sup>47</sup>. Furthermore, we conclude that that existing systems do not often align with traditional healing methods, which presents a significant gap in the appropriate conveyance of health care.

### **DISCUSSION**

In response to these participation barriers it can be concluded that a therapeutic landscape needs to incorporate the following design parameters: progressive and adaptive design and feedback technology; intergenerational and inclusive design; landscape integrated solutions and traditional healing systems.

### **Progressive and Adaptive Design and Feedback/eHealth Technology**

Physical barriers such as mobility and capability concerns may be addressed through appropriately designed age-specific equipment which takes into consideration reduced ranges of motion, strength and balance. This could be further enhanced with suitable hand rails, safety materials and flooring, and simplified designs which are related to daily activities<sup>48</sup>. Additionally, accessibility for persons with walking aids must be incorporated. This has been seen in some equipment currently available on the market such as the "handicapped fitness series", which focusses on upper body strength, however it is not inclusive to other capabilities<sup>49</sup>. This needs to be addressed in an adaptive approach, whether it be in the equipment itself or in the layout, to provide adequate challenges which increase difficulty for a wide range of capabilities and progress. Furthermore, if feedback systems were integrated into the equipment, which measured the suitability of each activity based on individual performance, it would allow elderly persons to gain confidence. In addition, it would ensure their own safety, while effectively rehabilitating existing health conditions, and delaying the onset of other age related illnesses. This technology may also help people with limited access to health resources to gain important knowledge for improving their physical wellbeing. Furthermore, research found that eHealth technology such as this could increase individual sense of wellness, including physiological, psychological, social and health well-being, as this patient-centred approach could provide progressive engagement with long-term physical activity participation<sup>50</sup>.



### Intergenerational and Inclusive Design

The time barriers which many elderly face may be better understood as the prioritisation of other activities above physical activity which limits the time available to exercise<sup>51</sup>. This may be addressed by changing the perception of what exercise activities are. If the landscape is designed in a way which integrates physical activity with other daily activities such as spending time with children or socialising, then more successful uptake may be achieved<sup>52</sup>. This may also address identified socio-cultural barriers such as adjusting for influential relationships within multi-generational family units and childcare responsibilities. To design for this there may be a need for elements which require group input, or perhaps have a fun intergeneration layer to promote beneficial social interaction<sup>53,54</sup>. This may create a cultural shift which contradicts the familiar expectations associated with exercise. Considerations such as making equipment less intimidating, or 'gym-like', by developing the materiality and form, may take away negative exercise connotations and reduce stigma barriers regarding appropriateness.

### Landscape Integration and Traditional Healing Systems

Another technique for achieving more approachable interactive installations is through integration with the landscape. Using landforms, natural settings and existing structures, to set interactive challenges for the ageing public may redefine what an exercise intervention is, broadening the scope to include a therapeutic landscape. In this context, another strategy for raising awareness and participation in culturally diverse demographics may be to consider traditional healing systems. This may bridge the gap between health professionals, the built environment and indigenous people to deliver education around why or how to participate in physical activity, in ways which may have been lost throughout generations, or which is perhaps not supported in current landscape design. An assessment of elderly exercise equipment currently on the market showed that some elements are designed based on international traditional exercise, such as Tai Chi Wheel, based from the Chinese Tai Chi martial arts; or the Cross-walk, inspired from Nordic walking. To the best of our knowledge there is currently no research or development regarding the adaptation of traditional Maori or Pacific exercise techniques, for contemporary health promotion. Our recommendation is that integration with the landscape will be imperative, due to the strong connections Maori people hold with the land, and the native flora and fauna<sup>55</sup>. If research in this area is done in the future, it will be imperative that *kaitiakitanga*, or 'guardianship' from *tangata whenua* is sought, or equivalently with different ethnic groups, to ensure appropriate processes and implementation.

It can be surmised that there are many barriers which older New Zealanders face in terms of exercise, thus, there is a need for interventions which provide a platform for elders to engage in physical and social activity, coupled with eHealth technology, to improve confidence and progressive engagement. This may assist seniors to overcome physical and perceived barriers, to allow them to effectively participate in physical activity<sup>56</sup>. Furthermore, lack of cultural suitability substantially limits the effectiveness of exercise interventions, by not appropriately encouraging physical activity for non-western people. Therefore, the design of outdoor therapeutic landscapes must encompass an approach that is sensitive, receptive and responsive to a diverse range of cultural perspectives, not just a western paradigm<sup>57</sup>.

### CONCLUSION

In the last decade, several researchers have called attention to the importance of outdoor built environments for successful ageing<sup>58,59,60</sup>. It has been concluded that public green spaces provide an important foundation for engaging older adults from various social, cultural and ethnic backgrounds for increasing or preserving their physical and mental health, as well as enabling essential social and



cultural connections<sup>6162</sup>. Yet, while it is well documented that physical activity in public green space has numerous benefits for health and well-being, it is found that culturally diverse uptake barriers are still prevalent regarding exercise participation, in these landscapes<sup>636465</sup>. Findings suggests that many current exercise strategies are predominately designed under a western paradigm and are ineffective at incorporating the role of cultural orientations. We suggest there is a need for a successful cross-cultural and inter-generational design methodology whereby responding appropriately to the physical and cultural context.

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