New Zealand Institute of Landscape Architects Tuia Pito Ora Incorporation (NZILA)

Submission on:
Climate Change Adaptation

14 June 2024

Tuia Pito Ora
New Zealand Institute
of Landscape Architects

To: The Parliamentary Inquiry into Climate Change Adaptation

From: Tuia Pito Ora /The New Zealand Institute of Landscape Architects

Subject: Submission on Climate Change Adaptation

Dear Members of the Parliamentary Inquiry,

Tuia Pito Ora New Zealand Institute of Landscape Architects appreciate the opportunity to contribute to this crucial discussion on climate change adaptation.

About Tuia Pito Ora New Zealand Institute of Landscape Architects (NZILA)
NZILA is the internationally recognised professional body of qualified landscape architects in Aotearoa New Zealand. We represent over 1,100 members. Incorporated in 1972, the Institute represents the profession across Aotearoa, including the development and administration of a Professional Registration system, Continuing Professional Development system, and Code of Conduct for members.

As professionals dedicated to the design, planning, management, and stewardship of the built and natural environments, we understand the profound impact that climate change has on our landscapes and communities. We have formed a Climate Change Working Group for the explicit purpose of putting together guidelines to help our members to design better for the environmental effect of climate change. The guidelines will be indigenous led, in collaboration with Te Tau-a-Nuku - the Māori Landscape Architects Ropu. We believe that this will be a world first for landscape architects.

Understanding the Impact

Climate change poses significant challenges to all our landscapes, from rising sea levels affecting coastal areas, to increased frequency and intensity of extreme events including floods, droughts and wildfires impacting our rural and urban areas. These changes not only affect the physical landscape but also have far-reaching implications for the biodiversity, cultural values, and socio-economic stability of our communities.

Climate change disproportionately impacts Tāngata Whenua communities, particularly due to existing socio-economic inequities and geographical locations. Many Tāngata Whenua live in coastal, rural, and remote areas, which are more susceptible to the effects of climate change. These effects include damage to homes, infrastructure, and sites of cultural significance, such as marae (meeting grounds), urupā (burial sites), wāhi tapu (sacred places), and mahinga kai (food gathering places).

Adaptation to climate change must therefore respond to both biophysical and socio- economic challenges and requires a systemic understanding of impacts and opportunities. A landscape perspective offers a powerful and flexible framework for understanding and action.

Landscape Architecture and climate adaptation

Landscape Architects are uniquely positioned to contribute to climate change adaptation. Our work involves a deep knowledge of ecological systems, cultural and community values, and long-term planning and design strategies. We understand how thoughtful design and planning can create resilient landscapes that not only mitigate the impacts of climate change but also enhance community wellbeing and biodiversity.

We recognize that Tāngata Whenua have been proactive in adapting to the effects of climate change. As kaitiaki (guardians) of their whenua (land), Tāngata Whenua are leaders in their communities, decision-makers about resources and infrastructure, landowners, and business owners. Mātauranga Māori, the body of knowledge originating from Tāngata Whenua ancestors, is a crucial resource in informing decision-making and learning about climate adaptation. This indigenous knowledge system, combined with modern science, can provide a holistic understanding of the environment and the impacts of climate change.

Tuia Pito Ora New Zealand Institute of Landscape Architects and its members engage collaboratively with all communities in Aotearoa New Zealand within a Treaty context, drawing upon Mātauranga Māori, modern science and professional expertise shared within a worldwide network of landscape architects and institutions.

Recommendations
We offer the following recommendations:

1. *Integrate Climate Adaptation in Planning and Design at all scales:* We recommend that climate adaptation measures be integrated into all levels of planning and design, from national policies to local community projects and individual developments.

2. *Invest in Green Infrastructure:* Investment in green infrastructure, such as sustainable urban drainage, urban forests, parks, and wetlands, can provide multiple benefits, including stormwater management, heat reduction, biodiversity enhancement, and community wellbeing.

3. *Promote Community Engagement in climate adaptation:* Engaging communities in climate adaptation efforts is crucial. This not only ensures that solutions are culturally appropriate and locally relevant, but also fosters a sense of ownership and resilience within communities.

4. ***Support Research and Innovation:*** Continued research and innovation in climate adaptation strategies are essential. We encourage the government to support these efforts through funding and policy support.

5. *Recognize and respect the role of Tāngata Whenua* as kaitiaki and their leadership in climate adaptation.

6. *Incorporate Mātauranga Tāngata Whenua* into climate adaptation strategies and decision-making processes.

7. *Address the disproportionate impacts of climate change* on Tāngata Whenua communities in climate adaptation policies.

Examples
Specific examples of landscape-based climate adaptation measures are:

1. *Integrated Planning and Design:* Incorporating climate-responsive design in urban planning can help create cities that are more resilient to changing weather patterns. This includes landscape-based strategies to guide urban growth, focused on resilience and avoiding areas at higher risk of extreme events; designing neighbourhoods, buildings and public spaces that can withstand extreme weather events: and incorporating features that reduce heat stress, such as green roofs and walls.

2. *Green Infrastructure:* Urban forests can help mitigate the urban heat island effect, improve air quality, and enhance biodiversity. Similarly, constructed wetlands can be effective in managing stormwater, reducing flood risks, and providing habitat for wildlife. Tāngata Whenua communities are actively involved in the restoration of wetlands and the replanting of native forests. This not only helps to sequester carbon but also enhances biodiversity and the resilience of ecosystems.

3. *Community Engagement:* Community-based adaptation initiatives, where local communities are actively involved in identifying and implementing adaptation measures not only ensures that solutions are culturally appropriate and locally relevant, but also fosters a sense of ownership and resilience within communities.

4. *Research and Innovation:* Supporting research into new materials and technologies that can help buildings and infrastructure withstand extreme weather events, or funding studies into ecosystem-based adaptation approaches, which use biodiversity and ecosystem services to help communities adapt to the adverse effects of climate change.

Green Infrastructure
Landscape architects have a particular interest in how green infrastructure can be used to help urban areas adapt to the effects of Climate Change. Examples include:

1. *Urban Forests:* Urban forests can be developed by planting trees and vegetation in parks, along streets, and around buildings. These not only provide shade and reduce the urban heat island effect, but also improve air quality, sequester carbon, and enhance the aesthetic appeal of urban areas.

2. *Green Roofs and Walls:* Green roofs and walls involve the incorporation of vegetation on the roofs and walls of buildings. They can help to insulate buildings, reducing the need for heating and cooling, and can also manage stormwater, provide habitat for wildlife, and improve the visual appearance of buildings.

3. *Rain Gardens and Bioswales:* Rain gardens and bioswales are landscaped features designed to capture and filter stormwater runoff. They can be incorporated into urban landscapes in places like parking lots, sidewalks, and plazas.

4. *Constructed Wetlands:* Constructed wetlands can be created in urban areas to manage stormwater, improve water quality, and provide habitat for wildlife. They can also serve as recreational and educational spaces for the community.

5. *Permeable Pavements:* Permeable pavements allow water to infiltrate through the surface into the underlying layers, reducing surface runoff and recharging groundwater. They can be used in parking lots, driveways, and sidewalks.

Nature-Based Solutions
Landscape architects have also developed landscape and nature-based solutions for climate change:

Protected Landscapes: Limiting deforestation and protecting existing landscapes can help avoid emissions. This includes preserving forests, grasslands, and other natural ecosystems that act as carbon sinks.

1.Restoring Ecosystems: Restoring degraded ecosystems, such as drained peatlands and deforested areas, can enhance their ability to sequester carbon. This not only helps mitigate climate change but also improves biodiversity and ecosystem health.

2.Natural Flood Defenses: Allowing waterways to meander along their natural courses can reduce flood risk. This includes restoring wetlands and floodplains, which can absorb excess water during heavy rains.

3.Urban Greening: Integrating nature into urban areas can help mitigate climate change and improve quality of life. This includes creating urban forests, green roofs, and community gardens.

4.Natural Sea Defenses: Natural sea defenses, such as mangroves and coral reefs, can help protect coastal communities from rising sea levels and storm events.

These nature-based solutions can provide significant benefits for climate change adaptation, biodiversity conservation, and human well-being. They represent a cost-effective and sustainable approach to addressing the challenges of climate change.

Some examples in Aotearoa New Zealand are;

Pāuanui Dune Protection Society: This WWF-New Zealand supported project worked to re-establish a natural dune at Pāuanui Beach on the Coromandel. Coastal dunes are a feature of many New Zealand beaches and provide natural protection from coastal erosion and flooding. More than 200 volunteers planted over 15,000 native dune grasses across a length of shoreline at the southern end of Pāuanui beach

Te Ara Awataha, Northcote, Auckland: Designed by Isthmus landscape architects,
Te Ara Awataha is a 1.5km blue-green corridor linking existing parks, the town centre, schools, and homes in Northcote, Auckland. Piped underground for more than 70 years, Awataha Stream is being revitalised to create a shared walking and cycling path, native riparian planting, and play destinations for all to enjoy.

Ōtākaro/Avon River Christchurch: A case study in the Ōtākaro/Avon River Catchment in Christchurch investigated the added value of blue-green infrastructure through improvement of habitat connectivity and biodiversity in urban environments.

Nature in the City Strategy Hamilton: The city of Hamilton has developed the Nature in the City Strategy 2020-2050 and Implementation Funding. The strategy stresses the importance of restoring native vegetation within an urban environment, while highlighting the multiple benefits of thriving nature for Hamiltonians.

These case studies demonstrate the diverse ways in which green infrastructure and nature-based solutions can be implemented in urban areas, providing environmental, social, and economic benefits. They also highlight the importance of integrating green infrastructure into the planning and design process to create more sustainable and resilient urban environments.

Conclusion

Tuia Pito Ora New Zealand Institute of Landscape Architects is committed to working collaboratively with the government, tāngata whenua, communities, and other stakeholders in addressing the challenges of climate change. We believe that through collective effort and innovative solutions, we can adapt to climate change while creating resilient and vibrant landscapes for future generations.

Thank you for considering our submission.

Yours sincerely,

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