

## Climate Change Adaption Legislation and the Construction Sector

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### SYNOPSIS

*Climate change will inevitably, drastically impact the coastal nation of New Zealand. Through literature review, it was identified that much of the existing work in relation to climate change literature, legislation and policy had been focused on mitigation, or carbon emission reduction, and very little had looked toward future-proofing and adaptation processes.*

*This research paper aimed to answer the research question below:*

*“Which countries have climates similar to that of New Zealand, what are their climate change and adaptation legislative approaches, and which of these approaches could potentially be adopted in New Zealand in relation to the NZ Construction industry?”*

*The aim of this research was to purposefully establish understanding of relevant international adaptation approaches, identify which, if any, could be relevant to the New Zealand context and/or inform potential process change in relation to the construction industry.*

*This research focused on climate change adaptation;*

- 1) Identification of countries with a similar climate to New Zealand;*
- 2) Document Analysis to identify and analyse international climate change, adaptation, and construction sector legislation processes;*
- 3) Interviews to reflect on, discuss and identify potential approaches to apply to the New Zealand context.*

*Preliminary findings showed that very few countries have looking toward future adaptation, and even less connect adaptation to the construction industry. Norway’s approach looks to be the most relevant to New Zealand, in relation to technical requirements, moisture management, zoning and flood risks. Interviewees unanimously agreed that our government makeup, culture and current processes may in fact require a mixture of adaptation and mitigation strategies.*

**Keywords:** Adaptation, carbon emissions, climate change, frameworks, legislation.

### INTRODUCTION

A Literature Review undertaken focused on the topic of climate change and its impact on the construction industry both internationally and in New Zealand. Through exploration of the this topic through themes such as project management (delays, material availability, etc.) productivity/performance/H+S (temperature thresholds), and legislation and policy change (including to contracts, building codes, HSWA, etc.), it became clearer how vitally important it

is becoming to understand and adapt to the inevitable impact of climate change on New Zealand and the New Zealand Construction Industry.

Literature explored in IP1 looked to a small number of countries (UK, Germany, USA, Australia) being identified as having current climate change and adaptation legislation processes underway that were of interest to the NZ scenario. Other than the one Ministry for the Environment document referenced, there was little literature found that specifically identified other current international processes. This research paper looked to do a more thorough exploration of relevant international documents, analysing and comparing them in order to inform which approaches (linking down and incorporating to industry and construction) could be potentially adopted in New Zealand.

## RESEARCH AIM AND OBJECTIVES

The aim of this research was to purposefully establish understanding of relevant international adaptation approaches in order to identify which, if any, could potentially be relevant to the New Zealand context and used to inform potential future processes within New Zealand. The research focused, as closely as possible, on legislation that linked back to the construction industry.

## RESEARCH METHODS

This research focused on climate change adaptation, first identifying countries with a similar climate to New Zealand, and then undertaking Document Analysis to identify and analyse each country's climate change, adaptation, and construction sector legislation. Finally, interviews were coordinated with leaders in the climate change realm in New Zealand, all with different experience and perspectives (climate strategist, MfE, List-MP, Senior Research Fellow (VUW), in order to reflect on these documents and discuss different perspectives on each identified approach and potential application within the New Zealand context.

## ANTICIPATED (OR PRELIMINARY) FINDINGS

Preliminary findings were different to that anticipated, with far fewer countries having implemented adaptation legislation honing down into enough detail to consider the construction industry than expected (only Netherlands, Denmark, Germany, Norway and Australia). Norway's approach was identified as being most relevant to New Zealand, focusing on legislation amendment in relation to technical requirements, moisture management, zoning and flood risks (Regjeringen, 2019).

COUNTRY	APPROACH
<b>Netherlands</b>	Built environment specifically addressed in relation to future spatial adaptation to ensure climate proof and resilient future urban design (Delta Plan on Spatial Adaptation, 2018) (Ruimtelijkeadaptatie, 2018).
<b>Denmark</b>	Regional plans such as the (Copenhagen Climate Adaptation Plan 2011) delves into specific impacts in relation to the Copenhagen context, identifying legislation requiring amendment, as well as adaptation in relation

	to the building context via design approaches ensuring a resilient housing stock. The (Copenhagen Building Act 2010) is an example of a piece of legislation that has been constantly reviewed to keep up with climate change impact expectations. (Klimatilpasning, 2011; IEA, 2010).
<b>Germany</b>	(The German Government's Climate Action Programme 2020) mentions housing, but mostly in relation to mitigation (climate neutral building stock). The (Climate Action Plan 2050) mostly explores a mitigation focus, however, touches on reviewing design standard legislation towards a climate neutral building stock. The (German Strategy for Adaptation to Climate Change 2008 (amended 2011)) discusses amending legislation in relation to zoning and flood risk in relation to climate change predictions. (BME, 2014; LSE, 2016; Prevention Web, 2011).
<b>Norway</b>	(Meld. St. 33 2012–2013 Report to the Storting white paper - Climate change adaptation in Norway) mentions amendments to legislation such as the Planning and Building Act (via technical requirements, moisture management, land-use planning/zoning) discussed, but nothing yet amended. (Regjeringen, 2019).
<b>Australia</b>	(National Climate Resilience and Adaptation Strategy 2015) Framework establishing priorities for action, while also enabling informed engagement of people/institutions/sectors. Each state works to determine their own specific approaches. (Pathways to a climate resilient Queensland - Queensland Climate Adaptation Strategy 2017–2030) enables sectoral adaptation approaches such as the (Built Environment and Infrastructure Sector Adaptation Plan 2017) formalising work done between specific sector parties and govt in relation to climate change adaptation in line with the Q-CAS. (Australian Government, 2015; Queensland Government, 2017; Queensland Government, 2017).

*Table 1: Adaptation approach findings broken down by country.*

On reflection over their own experience, and the documents analysed, interviewees agreed that due to our government makeup, culture, industry strength and relationships, and current processes in line with legislation, a mixture of adaptation and mitigation strategies may in fact be a better way forward than solely focusing on one or the other. Participant A identified there are non-legislative approaches that combine mitigation and adaptation currently occurring in places such as Germany that may be an alternate solution for New Zealand. Participant B identified new processes occurring within government in line with the Zero Carbon Bill, including establishment of an independent Climate Change Commission, will ensure climate change is an active consideration across all legislation. Participant C also identified that new world-leading research in process in relation to decision-making under uncertainty would unlock the potential to apply flexible thinking to all future decision-making.

## RESEARCH SIGNIFICANCE

As the impacts of climate change are now considered to be inevitable, considerations of the impacts of climate change and close communication with those implementing legislation reviews that will affect the future of the construction industry is vital. Discussion and debate within the construction industry must begin occurring now for us to adapt in time for anticipated impacts, which are already being felt across the globe. The sooner we establish how best to make this happen, the better for the industry.

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