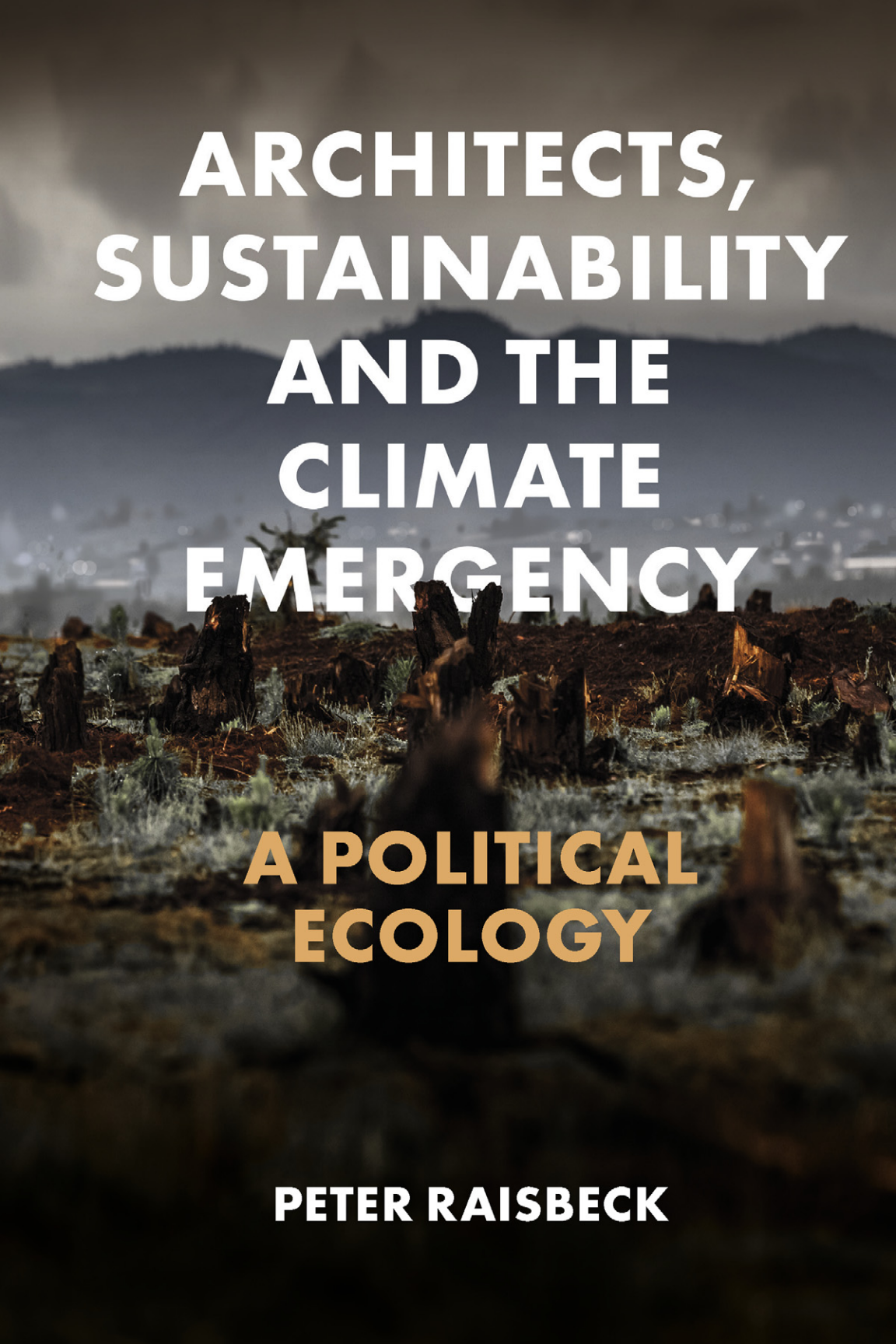
ARCHITECTS, SUSTAINABILITY AND THE CLIMATE EMERGENCY
A POLITICAL ECOLOGY
PETER RAISBECK

Architects, Sustainability and the Climate Emergency

Living in and with Nature is the single challenge for humanity as climate change rapidly propels us down the path of ecocide and extinction. New visions of ecological sustainability demand that we, literally, build the future in a different way. For this, we need to listen to the voices of intellectual innovation, learn the wisdom of the ancients, and draw energy from those who see, judge, and act as global calamity unfolds. This fascinating book provides vital insights and critiques at the interfaces of architectural theory and practice, in the process elaborating a contemporary policy ecology of the built form. For anyone concerned about the climate emergency, it is essential reading.

Rob White
Emeritus Distinguished Professor of Criminology, University of Tasmania, Australia

Architects, Sustainability and the Climate Emergency: A Political Ecology

BY

PETER RAISBECK

University of Melbourne, Australia

United Kingdom – North America – Japan – India – Malaysia – China

Emerald Publishing Limited
Howard House, Wagon Lane, Bingley BD16 1WA, UK

First edition 2023

British Library Cataloguing in Publication Data
A catalogue record for this book is available from the British Library

ISBN: 978-1-80382-292-1 (Print)
ISBN: 978-1-80382-291-4 (Online)
ISBN: 978-1-80382-293-8 (Epub)

ISOQAR certified Management System, awarded to Emerald for adherence to Environmental standard ISO 14001:2004.

Certificate Number 1985
ISO 14001

INVESTOR IN PEOPLE

Epigraph

They saw the great fire advancing from the Macumba Maka-Wimpa 'fire track' and they got out quickly, traveling to the south-east still looking for more of their own people.

–Luise Hercus. (2009). Murkarra, a landscape nearly forgotten: The Arabana country of the noxious insects, north and northwest of Lake Eyre. In A. L. Hercus & H. J. Koch (Eds.), *Aboriginal placenames: Naming and re-naming the Australian landscape aboriginal history* (p. 257). Monograph 19. ANU E Press and Aboriginal History Incorporated.

Table of Contents

List of Figures

Chapter 3

Chapter 4

Chapter 5

Chapter 6

About the Author

Dr Peter Raisbeck is Associate Professor of Architectural Practice at the Melbourne School of Design University of Melbourne. At MSD he teaches Architectural Practice, Design Activism, and Contemporary Architectural Archives. His research spans the fields of architectural history and the sociology of architectural design and practice. His book, *Architecture as a System: Scavengers, Tribes, Warlords and Megafirms*, (2019) considers architecture as a global system in crisis. His coauthored book with Dr Christine Phillips, *Robin Boyd: Late Works 1960–1971*, (2020) is an extensive survey of the notable Australian architect Robin Boyd's public commissions prior to his death in 1971.

Foreword

When I began writing this book, megafires were burning on the Australian continent I live on, and as I finished writing parts of this book, the land has been inundated with catastrophic floods. In between these events, there has been a global pandemic. These framings of time suggest a finite beginning, middle, and ending to these catastrophic events. However, what has motivated my writing is the intuition that this climate chaos cannot be so easily framed with a chronological ending. All endings suggest we might look beyond to a better time. But I fear that the climate imaginaries conjured by architects, and described in what follows, presume a definitive end to such things – an end to the climate emergency. These imaginaries dictate an enchanted future Anthropocene where human life can go on as usual. Yet, as the climate emergency unfolds, we begin to sense that there are no more neat endings; chaos begets chaos. As described in this book, the magic of architects is an illusion that is even now contributing to future chaos.

Melbourne, March 2022.

Acknowledgments

This book has been written on the lands of the Wurundjeri and Boon Wurrung peoples. I acknowledge the Traditional Owners of this land I have been writing on and pay my respect to their Elders and families past and present.

I would like to thank my wife, Victoria Conners, for her ongoing support through much laughter and the trials of six Melbourne lockdowns. Without this support, this book would not have been possible. I would also like to acknowledge the help of my children, Rachel Raisbeck and Raphael Raisbeck, whose laughter at my humor I will always treasure. Of course, I must also thank those I regard as part of my family, my Christmas day crew: Eric Conners, Carmel Conners, Sarah Conners, and Andrew McIlroy. And of course, Jennifer Klempfner and her partner Rob Larkins, Yolande and George Klempfner. And the amazing Judith Raisbeck as well as my sister Vicky Marney and my brother David Gibson.

Katy Mathers, and her team at Emerald, was also most patient and amazingly encouraging. At Melbourne School of Design, a particular thanks to Dr Kirsten Day for her support in both teaching and research.

At MSD, I would like to thank Julie Willis, Alan Pert, and Paul Walker for their continuing support. Melbourne School of Design is one of the world's great architectural and built environment scholarship centers. This is reflected in the text, where many of my colleagues are great scholars whose ideas have inspired and provoked my thought. Among others: Michele Acuto, Alexei Trundle, Margaret Grose, Robert Crawford, and of course the amazing Helene Frichot – too often I read your work and then forget to chat outside our building's café. My PhD students, Dr Sharon Shafer and Puneeta Thakur.

As the book proceeded, I continued to teach Architectural Practice at Melbourne School of Design, and I am most thankful to Rob Polglase and supporting me in my teaching. I must also thank the beautiful architects who teach in this subject for many conversations: Rebecca Naughtin, Joanna Sych, Redmond Hamlett, Melany Hayes Camilla Tierney, Rowan Brown, Christopher Hewson, Isabelle Legge, Sonia Sarangi, and the indefatigable Dr Norman Day.

I would also like to thank Greg Burgess for entrusting us with their Archive, which in many ways has helped me to think about the final chapters of this book – I hope the next book I write will be about this archive. I would also like to thank Andy Jackson, whose critical comments on my feeble efforts at poetry has helped me prose writing enormously.

I would also like to thank my support team of health professionals, including Dr Katrina Reardon, Dr Sarah Lee, Dr Martyn Delatycki, Dr Ralph Audehm,

Isabelle Aubrey, Rebecca James, Sam Stinson, Amanda Spillare, and Julie Wilson at MND Victoria. Many of whom have enabled me to be highly productive in one way or another.

Gratitude to the other Producers, Noelle Jones and Tanya Spencer. Many friends must also be acknowledged through this journey: Karen Burns and Dean Cass, Tava Darakamaran, Tania Davidge, Michaela Prunotto, Rosanna Verde, Alica Brown and Tamsin Maclean, Christine Canters, Simona Castricum, Kate Tregloan, Amanda Davis and Simon O'Brien, Kirsten Day, John Ting, Peter Hogg, and Helen Slonek. The Hinses' including Karen Hines, Lee Hines and my favorite Hines: Ellyse and Olivia Hines. Susan Diggs and Paul Almond. Rochus Hinkel, Yvette Putra, Christine Phillips, Sue Dance, and Jason Pickford. My discussions with Jason Pickford over the last 20 years concerning climate politics are the bedrock of this book.

As remarked in the acknowledgment to my previous book, often, there are pressures nowadays on academics to avoid the longer and solitary forms of scholarship. Without the assistance of the above people, this contribution to that genre would not have been possible.

Chapter 1

Introduction

In the history of modern architecture, the city has been reimagined by architects in many different guises. This book is how architects have shaped their visions of the city; as their knowledge of the climate emergency has unfolded. At the heart of the book is the question, have architects failed to heed this crisis? As climate fires roar and a pandemic rage, we might ask, do architects sleep too soundly and quietly? Have the climate imaginaries that architects have produced, in response to the science of climate change, served to conceal the climate emergency itself? Modern architecture, as conjured up by its proponents – for all its follies – has always had a focus on the city. Modern architecture was always about and never anything less than an investment in the dream of a future city. There was always a hope that the imagination of modern architects, through their own agency, would shape the cities of the future.

The promises, dreams, and hopes of architects for future cities are now inextricably linked to climate change. Understandably, architects might return to the glories of modern architecture; with its spiritualist promises of social, technological, and, above all, aesthetic freedom. The climate emergency has prompted architects to take up new dreams even as they maintain old rituals and memories. It is the new dreams of architecture in the twenty-first century, constituted by past phantoms and half-remembered images, that are discussed in this book. Each of these dreams incite a euphoria that architecture, with all of its different tributaries of style and theoretical tropes, might yet be something that can offer salvation. In this strange architectural light, between waking and dreaming, what angels, saints, sorcerers, and ghosts have appeared to quell the climate emergency? What monsters, real or imagined, lurk in this landscape of magic and dreams?

The above rhetoric may seem somewhat unorthodox with its hints of deliria and esoteric beings. Nonetheless, magic and superstition are suitable frames when describing how architects have responded and continue to respond to the climate emergency. Architects have proposed so many different cities, and so much magic, and yet, the city that reconciles nature with humanity is still to be built. And so, this book is a detailed examination of architects as a profession and how they have responded and continue to respond to the climate emergency. In doing so, the purpose of this book is to outline a political ecology of architecture.

This political ecology is underscored by the science. The Intergovernmental Panel on Climate Change (IPCC) Special Report 15 on Global Warming was

Architects, Sustainability and the Climate Emergency, 1–28

doi:10.1108/978-1-80382-291-420221001

published in 2018. This report indicates that human activity has contributed to "approximately 1.0°C of global warming," and the range of this contribution is predicted to be between 0.8°C and 1.2°C (IPCC, 2018, p. 4). If the trend underlying this global warming continues, then global warming will reach 1.5°C between 2030 and 2050. This forecast is predicated on a global temperature increase at the current rate. The later IPCC Assessment Report 6 (AR6), released in August 2021, also stresses that time is running out for the planet (IPCC, 2021a).

This book can be read as a pilgrimage through an architectural landscape of magical mists, mists of sleep that seem at odds with the science. On waking, a real distance always seems to have been traveled; the architectural city – the dream cityof architects – is somehow real, but these dreams are no more real than the circuits of popular culture that feed them. After all, what is a city? And after everything is said and done, we might ask: what are the cities that architects have constructed for themselves and others in the light of the climate emergency? Of course, these cities of architectural dreams have many different scripts and spells. However, these different cities are curiously deaf to the Earth itself and this anacusis prevents architects from healing the planet. It is a deafness that pervades architects and their dreams of the future city. It is a kind of dreaming that appears not to hear the Earth and the ecological violence of modernity.

As I began writing this book, the continent that I live on was aflame as unprecedented mega-fires consumed it. As I finish writing the continent's cities and towns are flooded. The Australian cities clinging to the edge of this continent are surrounded by cultural and ecological landscapes that are too often seen as empty wastelands or fields of extraction. For Australia, as one of the world's largest exporters of fossil fuels, it is ironic that climate change has contributed to the destruction of ecological habitats, ancient cultural landscapes as well as modern infrastructure. Australia's situation, as the driest continent on Earth, with all of its biodiversity, sustained by the world's oldest living culture, points to how settler mentalities, colonialism, and rapacious cycles of economic modernity have failed. In Australia, architecture is embedded in a political economy of fossil fuel production that has been governed in a way that has disregarded the impact of carbon emissions on the planet.

Political Ecology

In hoping to listen to the voice of the Earth, this book constructs a political ecology of architecture. The book examines the human-environment linkages of architecture in relation to power. Political ecology, as a field of knowledge, seeks to ask questions about the relationships between economics, politics, and the natural world (Robbins, 2011). In other words:

> Political ecologists document the power struggles that make and remake "the environment." They provide an understanding of the environment as a dynamic material reality, with exchanges between human and non-human actors, as well as a symbolic

> arena where different (and often clashing) knowledges, desires, and ideologies are cast.
>
> (Kotsila, Paolo De Rosa, & Iengo, 2020)

Any consideration of political ecology regarding architecture must aim to have a focus on the distribution of power. This is because power has shaped the coevolution of nature and architecture. This is different from seeing architecture as a vehicle of urban or technological boosterism or seeing various architectural and spatial practices as solutions to the climate crisis. The above view necessitates interrogating how architects structure power within their discipline through their own theories and practice. Enrique Leff (2021) defines political ecology in the following terms:

> Political ecology is the field where power strategies are conceived, and social struggles are deployed to open new pathways for survival and for building a sustainable future. It involves the deconstruction of modern rationality.
>
> (p. 235)

Political Ecology, emerging in the work of the anthropologist Eric Wolf in the early 1970s, was given further impetus by the work of Blaikie and Brookfield in 1987 (Robbins, 2011; Scheidel et al., 2020, pp. 2, 40). Political Ecology has evolved from being centered on issues in the Global South, to now include examining processes of urbanization in the Global North. As Paul Robbins (2011) notes, political ecology is a field that has attracted "several generations of scholars from the fields of anthropology, forestry, development studies, environmental sociology, environmental history, and geography" (p. 13). Political ecology draws on a range of critical theories, including Marxism and feminist theory, countering Malthusian notions of growth. It should not be surprising that this field has a political dimension since its researchers' advocate fundamental changes in the management of nature and the rights of people. Hence, Political Ecology maps climate issues through "the lens of social, distribution, and knowledge conflicts" (Entitle, n.d).

The reverberations of the above approach will be explored in the following chapters. A range of interwoven narratives regarding architectural discourse, its theories and spatial practices is presented. These narratives will draw inspiration from a broad range of voices: First Nations, schizophrenics, the ecosophy of Felix Guattari, feminist theory, climate justice studies, the UN's Sustainable Development Goals (SDGs), development studies, and, more broadly, the environmental humanities. It will be seen how architects have responded to climate through various modalities and across different contexts. These contexts encompass global cities, technology, architectural science, and the image-politics of social media. The political ecology developed here illuminates how architecture, beyond the limited viewpoints of its own traditions and canon, requires Reworlding – as set out in the final Chapter – to integrate both the human, the nonhuman, and the voice of the Earth itself.

This book draws on architectural history, theory, and the spatial practices of architects themselves. It will be argued that architects are too distantly removed from human-environment systems and ecologies, even as these systems approach points of disruption due to a rapidly heating climate. The voices and signals emanating from these ecological systems are barely heard within architectural discourse. Architects are too enmeshed in their own magic. A new narrative or storying, as some have called it, of architecture through the lens of political ecology offers the hope of leading to a liberatory project. As Kotsila et al. (2020) claim, intrinsic to political ecology are:

> …considerations of justice, equity and fairness in relation to race, gender, class, ethnicity, and other socio-cultural and material inequalities, should be put at the center of research practice and should constitute a shared horizon of values towards collective emancipation.
>
> (Kotsila et al., 2020, Nothing in "nature" section, para. 1)

Another way to describe this book is that in scope, this book is a recent history of architects and the climate emergency since the millennia. The book presents various projects, built and unbuilt, during this time. The text presents and examines the activism of architects as well as exploring the ways they have thought about various policy settings regarding climate change. Inspired and guided by a number of theorists, the book contributes a new perspective regarding the architectural encounter with the Earth's climate. This book builds on and extends my previous book *Architecture as a Global System; Scavengers, Tribes, Warlords and Megafirms* (Raisbeck, 2019). This prior book, through its use of institutional logics, provides a conceptual toolkit for examining how architecture's own professional structures are linked to concatenations of power and knowledge.

Climate Science and the IPCC

Overview of the IPCC Reports

The Intergovernmental Panel on Climate Change (IPCC) reports are the obvious benchmark for assessing current and future issues concerning climate change (IPCC, 2021a). At the time of writing, the current report is Assessment Report 6 (AR6). This has only been partially published: Working Group I *The Physical Science* Basis was published in August 2021, and Working Group II *Impacts, Adaptation, and Vulnerability* was published in February 2022 (IPCC, 2021a, 2022).

The last full IPCC report, Assessment Report 5 (AR5), was published in 2014 (IPCC, 2014). Before that, Assessment Report 4 was published in 2007, and before that, Assessment Report 3 was completed in 2001. Notably, after COP21 in Paris in December 2015, the IPCC was asked to prepare a Special Report (SR15) for publication in 2018 on: the impacts of global warming of 1.5°C above

preindustrial levels and related global greenhouse gas emission pathways in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty (IPCC, 2018, p. 4).

These successive reports: AR3, AR4, AR5, SR15, and AR6 indicate the emerging scientific consensus on climate over time. The reports serve as a benchmark regarding the science of climate change and its attendant facts. The IPCC reports can thus be seen as reference points from which to assess the dissemination and influence of climate science in architecture.

We might also bear in mind how have the specific technical framings regarding buildings and settlements in the IPCC reports shaped architectural discourse over time. The issues relevant to architecture arising in each Assessment Report are provided in Table 1.1. These issues include: energy emissions from buildings, embodied carbon, Life Cycle Analysis (LCA), Urban Density and Urbanization in the Global South and sea-level rise. At the time of writing, Working Group II and III (AR6 cycle) is to be published in February and March 2022. The AR6 Synthesis report brings together the findings of the Working Groups, and for the AR6 cycle, this report will be published in September 2022. Moreover, the United Nations Framework Convention on Climate Change (UNFCCC) states that the next Assessment cycle (AR7) will have a special report on cities and climate change (IPCC, 2021b). What follows is an overview of the most recent Assessment reports AR5 and AR6, beginning with AR5 (Fig. 1.1).

IPCC AR5

When Working Group III to the Fifth Assessment Report of the IPCC was published, it included a chapter related to Buildings (Chapter 9) (Lucon et al., 2014). In addition, AR5 included a chapter on Human Settlements Infrastructure and Spatial Planning (Chapter 12) (Seto et al., 2014). In the AR5 summary Chapter 9, it was declaimed that:

> …buildings accounted for 32% of total global final energy use, 19% of energy-related GHG emissions (including electricity-related), approximately one-third of black carbon emissions, and an eighth to a third of F-gases.
>
> (Lucon et al., 2014, p. 675)

The co-authors of Chapter 9 in AR5 stressed how buildings were both critical and necessary to a low carbon future and sustainable development. The AR5 report emphasized building energy use:

> Buildings embody the biggest unmet need for basic energy services, especially in developing countries, while much existing energy use in buildings in developed countries is very wasteful and inefficient.

Table 1.1. Identification of Architecture, Built Environment and Cities Issues in IPCC Assessment Reports.

Report	Date Published	Architecture, Built Environment and Cities Issues Identified
Assessment Report 1	1992	Human Settlements: coastal lowlands and islands; vulnerable populations in developing countries. (IPCC Overview Section 2.4.1)
Assessment Report 2	Synthesis Report October 1995	Scientific-Technical Analyses Of Impacts, Adaptations And Mitigation Of Climate Change — IPCC
Assessment Report 2: Working Group II. Human Settlements:	Synthesis Report October 1995	Sea level rise, most vulnerable human settlemenst. Mitigation: emphasis on technical solutions, renewables and switiching to different energies sources.
Assessment Report 3: Working Group I	March 2001	Options to Limit GHGs: Hundreds of technologies and practices for end-use energy efficiency in buildings.
Assessment Report 3: A Report of Working Group II of the Intergovernmental Panel on Climate Change Impacts, Adaptation, And Vulnerability	March 2001	Human settlements: risk of flooding for many human settlements.
Assessment Report 4	2007	Human Settlements: risk of sea-level rises. Buildings Emissions and solar voltaic technologies, mitigation through building codes.
Assessment Report 5	2014 (note: COP2 Paris in December 2015	Human Settlements: risk of sea-level rises. Buildings Emissions and solar voltaic technologies, mitigation through building codes.

Table 1.1. *(Continued)*

Report	Date Published	Architecture, Built Environment and Cities Issues Identified
Special Report SR15 on Global Warming of 1.5°C.	Published October 2018	Need for: large increases of investments in low-emission infrastructure and buildings.
Working Group I; The Physical Science	August 2021	Cities: intensify human-induced warming locally, urbanization and more frequent hot extremes will increase severity of heatwaves. Urbanization: increases mean and heavy precipitation over and/or downwind of cities resulting in runoff intensity. Coastal cities: more frequent extreme sea level events, extreme rainfall/riverflow events, flooding more probable.
Assessment Report 6. Basis Working Group II: Impacts, Adaptation and Vulnerability	Feb 2022	Human Settlements: risk of sea-level rises. Buildings Emissions and solar voltaic technologies, mitigation through building codes.
Assessment Report 6. Working Group III: Mitigation of Climate Change - IPCC	April 2022	Note: Technical Summary on Urban and Other Settlements and Buildings: "Nearly Zero Energy (NZE) Buildings or low-energy Buildings are achievable in all regions and climate zones for both new and existing buildings." and "There is a significant lock-in risk in all regions given the long lifespans of buildings and the low ambition of building policies."

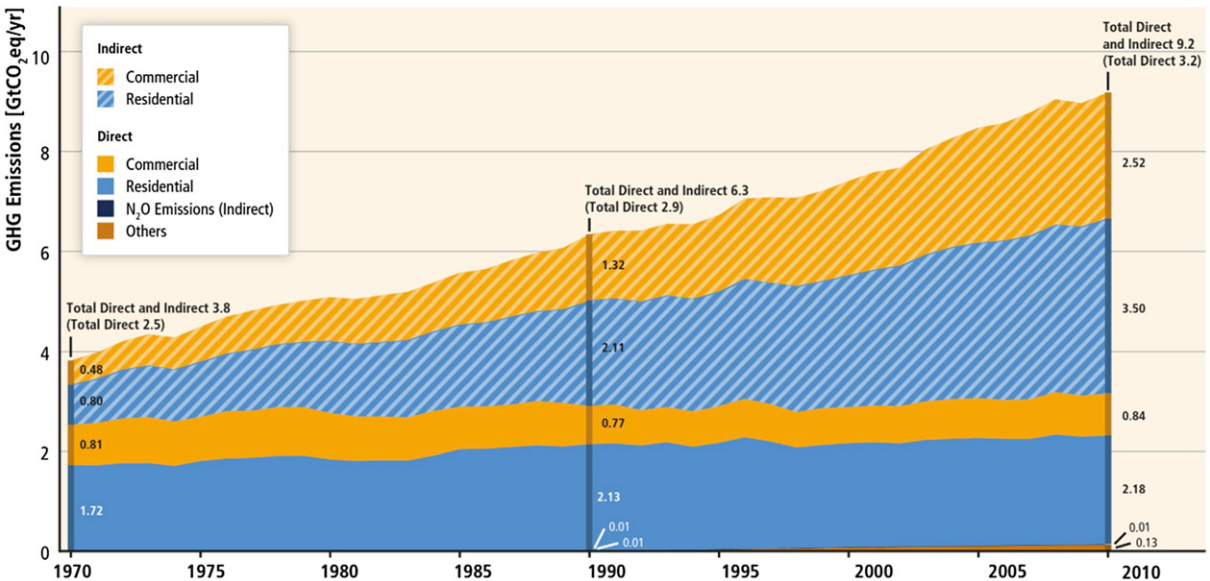

Fig. 1.1. Graph From IPCC, *Climate Change 2014: Mitigation*; Direct and Emissions Indirect (From Electricity and Heat Production) in the Building Subsectors. *Source:* IPCC (2014). AR5 *Climate Change 2014: Mitigation*, Cambridge University Press, p. 678.