



Norman  
Disney &  
Young  
A TETRA TECH COMPANY

# Sustainability

## De-carbonisation and Net Zero Solutions

2022



Boardwalk House, London United Kingdom  
Norman Disney & Young, A TetraTech Company



# Carbon Neutral Today, Net Zero by 2026

## Our Commitment to De-carbonisation

Norman Disney & Young, A Tetra Tech Company (NDY) is committed to playing its part in a more sustainable future for all.

NDY's 2021 Annual ESG Report communicates our organisations priorities, commitments, targets, and actions to support the United Nations Sustainable Development Goals.

One of our key priorities is to continually reduce our Greenhouse Gas emissions footprint. In 2021 NDY became a carbon neutral organisation – the first step of our three-step strategy for eliminating GHG emissions from our footprint.

Our three-step strategy is outlined below:

1. Reach carbon neutral status – achieved in July 2021 (scopes 1,2 and partial scope 3)
2. Achieve net zero emissions by 2026 – to include all scope 3 emissions
3. Reach carbon negative emissions by 2030 in line with our parent company Tetra Tech's global commitment.

NDY is also working with clients, communities and other valued stakeholders to help them de-carbonise their operations and projects.

**This De-carbonisation and Net Zero Solutions Capability Statement highlights the ways in which we engage with our clients to help them de-carbonise, as well as some of our recent successes.**

You can read more about our carbon and other sustainability commitments by reading our 2021 ESG Report [here](#).



## Science Based Solutions to meet our Global Challenge

Since 2019, the World Economic Forum's Global Risk Report has identified the two most significant global risks by likelihood have been extreme weather and climate action failure. Greenhouse Gas (GHG) or 'carbon' emissions are at the core of both these risks.

In a world that is yet to reach 'peak emissions', the window of opportunity for reducing emissions and keeping global temperature rise below 2°C is closing fast.

At NDY we understand the imperative to reduce carbon emissions across all sectors of our economy, at business level; as well as in the design and maintenance of physical infrastructure and assets.



## Our De-carbonisation and Net Zero Solution Services

Our depth of services allow us to work directly with our clients at all levels within their organisation, engaging with them to develop strategies, applying our deep knowledge to support implementation; and assist in ongoing management and certification of outcomes.

### Organisational Strategy

- › GHG Footprinting and offsetting
- › Portfolio De-carbonisation Roadmap
- › Company Reporting
- › Environmental Circularity
- › Climate Change Risk and Adaptation

### Strategy & Design Implementation

- › Life Cycle Assessment (LCA)
- › Embodied Carbon Studies
- › Data Driven Design Analysis
- › Zero Carbon Engineering – including Electrification, Renewable Energy Systems and Fossil-Fuel Plant Replacement

### Management and Validation

- › Independent Validation
- › Benchmarking and Carbon Certifications
- › Asset Certifications
- › Tuning and Auditing
- › Training
- › Procurement and Change Management





## Organisational Strategy

### › GHG Footprinting and Offsetting

We can define the Greenhouse Gas (GHG) emissions boundary for your business operations and supply chain, and quantify the associated emissions. This includes identifying scope 1, 2 and 3 emissions sources, providing a platform for planning future reduction strategies and offset investments.

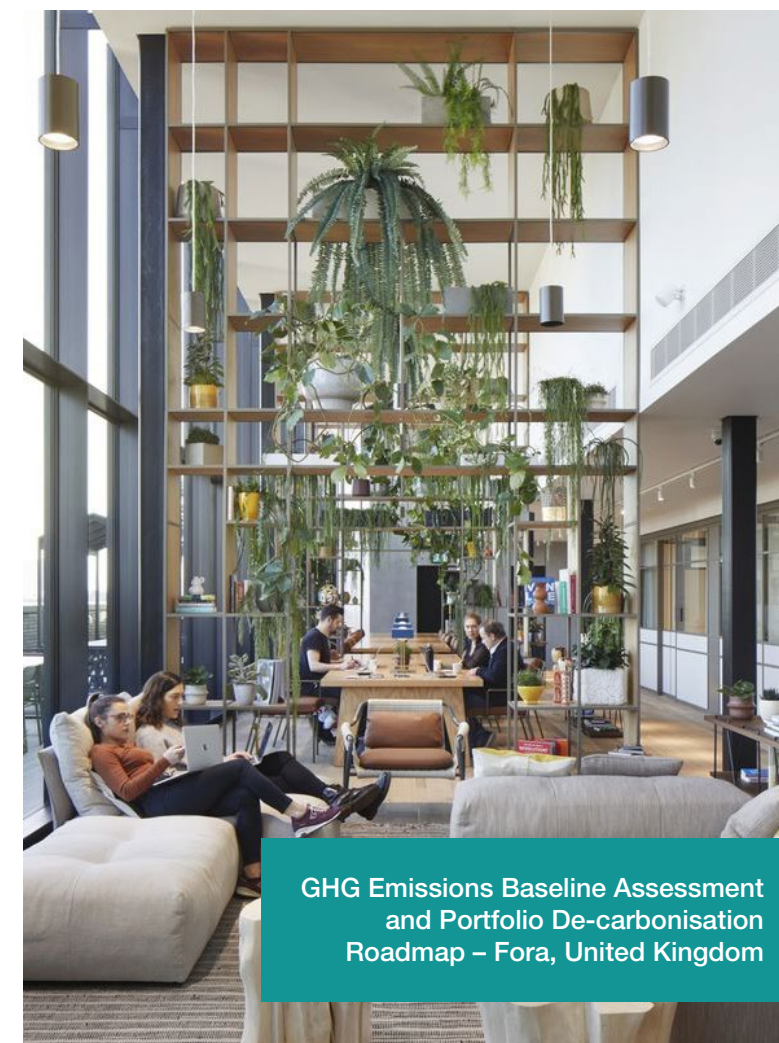
The practice of GHG emissions offsetting can be a complex process. NDY can assist you to identify appropriately certified offset units which align with the values of your stakeholders and your organisational carbon neutral or Net Zero objectives. Carbon credits, nature-based removals or technological removals – we're familiar with the various options, and once you're clear on what makes sense for you we can connect you directly with brokers or scheme providers. In today's world, GHG offset schemes often provide other broader sustainability-related benefits and we can assist you in sourcing products with 'co-benefits' that align with your broader ESG priorities.

### › Portfolio De-carbonisation Roadmap

Whether or not you have developed your own GHG emissions baseline, NDY can work with your business and its stakeholders in detail to establish a roadmap for when and how you will achieve carbon neutrality or Net Zero to a Science-Based Targets definition. This can include mapping out functional and change management requirements for your business, commercial implications, and opportunities for reducing future exposure and risk. A Net Zero Roadmap can be undertaken at company, fund or asset level.

### › Company Reporting

NDY can assist you in voluntary and mandatory GHG emissions disclosures. This can include a range of activities, from end-to-end management of the reporting process, through to developing internal procurement processes and data sets (see also 'Company Footprinting').



GHG Emissions Baseline Assessment  
and Portfolio De-carbonisation  
Roadmap – Fora, United Kingdom

### › Environmental Circularity

Whilst circularity derives from maintaining the integrity of technological and biological nutrient cycles, durability and reuse, the ways in which it can be delivered in practice are many and varied. Our specialists can work across your business to identify hotspots and opportunities for improving circularity, with the aim of improving ecological and commercial sustainability. We also collaborate with manufacturers and suppliers to understand available products, commitments to extended-producer responsibility, and alternative procurement models – and to communicate our clients desire for new offerings. And we work with project teams across a broad range of aspects, from adaptive reuse, materials prioritisation, and designing for flexibility, durability, and disassembly for recycling or composting.





City of Greater Geelong Administration Building



De-carbonisation by Design -  
73-89 Oxford Street & 1 Dean Street,  
United Kingdom

## Strategy and Design Implementation

### ▸ Environmental Life Cycle Assessment (LCA) and Whole of Life Carbon (WOLC)

As our national energy networks de-carbonise, the focus on operational-based GHG emissions has shifted to whole of life impacts. For buildings and infrastructure, this includes the materials, construction activities and end of life phases.

A life cycle, or whole of life carbon assessment is therefore a 'cradle-to-grave' or 'cradle-to-cradle' analysis to assess GHG impacts associated with all the stages of an asset's life. NDY's specialists undertake LCA/WOLC analysis to identify project emissions hotspots and develop strategies to de-carbonise your project through individual phases or throughout its lifecycle.

### ▸ Embodied Carbon Studies

From a project procurement perspective, the boundary of responsibility for emissions generated may reside with multiple parties. NDY can help you delineate your direct obligations from whole of project, which often includes assessing design and construction related emissions in isolation. Such an approach is consistent with life cycle phases 'A1 to A5' in accordance with BS EN 15978:2011.

### ▸ Data-driven-design Analysis

The use of simulation within the built environment has grown exponentially over recent years, as has the drive for design teams to create more and more challenging built forms. Within the software packages that NDY use, we are able to generate huge volumes of data, which when efficiently processed, allows us to visualise much more clearly trends and patterns, without having to solely rely on typical rules of thumb that our industry is comfortable with. Our approach uses multi-objective analysis and parametric modelling to influence the built form and drive decision making, providing our clients with a unique solutions focused outcome bespoke to their specific project.

### ▸ Zero Carbon Engineering Design (including Electrification, Renewable Energy Systems and Fossil-Fuel Plant Replacement)

For many, the transition to net zero will be a gradual one. The phase out of fossil-fuel based plant and equipment, in line with budget and existing replacement program, requires planning and business case support. NDY's multidiscipline specialists can work with asset owners, facilities managers and investors to map out a plant replacement strategy that aligns with emissions reduction goals (such activities may also be captured in our 'Net Zero Roadmap' service).

As part of a multi-discipline team of specialists, we can develop site-wide renewable energy strategies and detailed design solutions to reduce your projects operational footprint. This can also include liaising with authorities and identifying funding sources and partnerships.

Through a detailed understanding of site energy balances, services integration opportunities, viable supply chains, and the cutting edge of technology, NDY can provide the expertise necessary to entirely remove fossil fuels from assets. Electrification can be complex – particularly in existing buildings or where supporting infrastructure is constrained – but our experience across a range of context in electrifying heating, domestic hot water, cooking, process steam, standby electrical generation and fire water systems is extensive.



# Management and Validation

› **Carbon Certification Services**

By providing advice in line with local and globally recognised frameworks and standards, we can assist your business in achieving independent certification of your carbon reduction efforts. This can include third-party accreditations with recognised market value if you desire – our team has experience working with peak bodies including the Carbon Trust and Climate Active, and can manage the process on your behalf.

› **Independent Validation**

Already mapped out your emissions profile and reduction strategies? NDY can provide independent third-party validation and offer recommendations for refining part or all of your emissions reduction plan.

› **Asset Certification**

Many asset level sustainability certifications assess GHG emissions at their core. Certifications offer projects an opportunity to verify against the GHG emissions and energy targets. NDY works extensively across sustainability certification which include but is not limited to Climate Active, Green Star, NABERS, LEED, Living Building Challenge.

› **Tuning and Auditing**

Any roadmap requires a process of validation as it is implemented to confirm that the anticipated emissions reduction or offset targets are being met. NDY has considerable experience in the process of building tuning, both for new build and refurbished physical assets, using project-specific



› **Training**

NDY provides a range of climate-change related training modules for clients, including GHG emissions. We can provide first-principles training on understanding how to identify emissions sources in your business, through to advanced education on implementing reduction strategies and developing in-house capability.

benchmarks to monitor performance over time and identify any areas requiring further attention to deliver optimum performance in collaboration with facilities management and contractors.

› **Procurement and Management Support**

Our team are experienced change agents in the field of sustainability and can assist businesses in a range of management activities, including procurement and consultation.



PICAC Narre Warren Net Zero Facility, Australia  
Norman Disney & Young, A TetraTech Company



# Arcadia Funds Management

## Period

2020 - Present

## Services

- ESG Framework
- Portfolio Net Zero Roadmap
- GRESB Advisory & Reporting

## Summary

NDY works with Arcadia Funds Management, a private unlisted property fund with \$1.8Bn in assets under management.

NDY assisted Arcadia to deliver its first ESG Strategy and Net Zero Roadmap covering all portfolio assets. This comprised identifying GHG emissions sources in line with the NSW Government Climate Active scope boundary; and developing an emissions reduction plan to support Arcadia's Net Zero by 2028 commitment.

NDY also provides GRESB advisory and reporting services to support Arcadia's commitment to sustainability performance.



World Square, Sydney Australia

# Fora

## Period

2020 - 2021

## Services

- ESG Strategy and Reporting
- Portfolio Net Zero Carbon Roadmap

## Summary

NDY begun working with Fora as they embarked on their journey towards becoming a more sustainable company.

Fora is a premium workplace provider based in London with eleven sites across the city and a substantial development pipeline.

NDY worked extensively with Fora to develop its Net Zero Carbon Roadmap, covering existing assets and those planned to come online between 2012 and 2025. Acknowledging trending UK energy sector decarbonisation, the roadmap focused heavily on Fora's supply chain and scope 3 emissions profile, in particular the life cycle carbon impact of the Fora workspace construction pipeline. NDY's work with Fora directly supported the company's 2030 Net Zero Emissions commitment made in March 2021.



Fora London Bridge Workspace, London United Kingdom

# Stewart Investors Sustainable Funds Group

## Period

2018 - 2019

## Services

- Greenhouse Gas (GHG) and Social Supply Chain Screening
- Asset Auditing

## Summary

NDY worked with Stewart Investors Singapore and Sydney offices to develop the organisations APAC ESG Strategy, with a specific focus on business supply chain.

NDY undertook environmental and social supply screening of the SI supply chain to assess Greenhouse Gas (GHG) and social risk hotspots. This screening served as the foundation for NDY developing targeted procurement policies and procedures to reduce carbon impact and social risk across SI operations. NDY also audited SI premises and outlined a series of recommendations for reducing GHG emissions from energy and waste.



City CBD, Singapore

# Cbus Property Fund

## Period

2012 - Present

## Services

- Environmental and GHG Reporting
- GRESB Advisory and Reporting
- De-carbonisation by Design

## Summary

NDY has a long established working relationship with Cbus Property, an \$8Bn ASX listed property fund.

NDY has worked with Cbus for almost 10 years, supporting them and providing design solutions as they've become one of the most sustainable funds in the world.

Our work with Cbus has ranged from establishing its Environmental and GRESB reporting frameworks from 2016 - 2019, through to designing some of its leading low-carbon real estate assets including 5 Martin Place, 435 Bourke Street, 311 Spencer Street and Collins Arch.



311 Spencer Street, Melbourne Australia



# Millennium Bridge House Re-development

## Period

2019 - Present

## Services

- Net zero engineering design
- Circular Economy Advisory
- Asset Certification

## Summary

NDY is working with Angelo Gordon and Beltane Asset Management to deliver a net zero carbon design for the complex redevelopment of Millennium Bridge House in central London.

NDY's low-carbon thermal-storage design negates the need for heating or cooling plant to be roof-mounted, so allowing more than 2,500m² of roof space to be used by the public, retail and office building tenants.

The project design also reduces embodied carbon by over 50% over an equivalent design solution.



Millennium Bridge House, London United Kingdom

# Monash Learning & Teaching Building

## Period

2016 - 2019

## Services

- Data driven design solutions
- Carbon Life cycle assessment
- Asset certification

## Summary

NDY delivered the Monash Learning and Teaching Building (LTB) with John Wardle Architects and partners for Monash University.

In addition to delivering a 42% reduction in operational GHG emissions, the design team worked extensively to reduce the embodied carbon impacts of construction. Feature initiatives included the engineered timber saw tooth roof structure, with spans of up to 24m, avoiding the use of high carbon intensity steelwork. Overall the project reduced its embodied carbon by 21% over a conventional design.



Monash Learning & Teaching Building, Melbourne Australia

# NZ Government Treasury, Green Finance Initiative

## Period

2019

## Services

- Industry expert advisory
- De-carbonisation Strategy

## Summary

NDY were part of an industry expert consortium selected by the New Zealand Government Treasury to undertake an assessment of national economic sector opportunities and Greenhouse Gas (GHG) ROI under Government's \$1Bn Green Investment Fund [Green Finance Initiative].

Consortium partners included Sapere Research Group and Tetra Tech partners Coffey.

NDY was lead author of the built environment sub-sector analysis and recommendations report. Works included heavy consultation with Treasury and built environment sector.



Auckland Surroundings

# 410 West Georgia, for Westbank Corp

## Period

2018 - Present

## Services

- Data-driven Design solutions
- Asset Certification

## Summary

NDY is working with Westbank Corp. to deliver a leading sustainable real estate project in the city of Vancouver.

The LEED Platinum development has been designed to reduce GHG emissions in operation by up to 40%.

Our data driven design analysis was applied to optimise building engineering systems. This expertise, coupled with our collaboration with all design disciplines has delivered a design that will set a new benchmark for real estate in Vancouver.



410 West Georgia, Vancouver Canada



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