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Although zero carbon is currently a hot topic, it is not new - and we are not new to it. Gardiner & Theobald ("G&T") has been working on low and zero carbon buildings since 2007. That is when we were asked by the UK Green Building Council (UKGBC) to be the main cost consultant to evaluate the Government's low and zero carbon non-domestic buildings programme. We are entering our third decade of work on the subject with a wealth of experience and expertise when it comes to delivering energy-efficient, low carbon buildings and infrastructure.

As a service provider, the biggest impact that we can have is helping our clients meet their net zero carbon aspirations. At the same time, however, we know the business benefits of low carbon policies for ourselves - in the form of reduced operating expenses, enhanced corporate reputation, the attraction and retention of colleagues, and so on. That is why, while evaluating the Government's carbon policies, we started to form our own. Since 2008, we have measured the carbon impact of our business activities and publicly committed to reducing our carbon emissions year-on-year.

In this policy document, we trace our history of reducing carbon, both in the industry and in our premises. We then set out how we intend to take our efforts to the next level attaining zero carbon as a firm by 2030. We conclude with some thoughts on lessons learned – ways that we know how to translate promises into performance while avoiding the pitfalls.





In 2010, G&T was one of the first (and only one of two) cost consultants selected to partner with The Carbon Trust to deliver the "Low Carbon Workplace Programme." We then wrote industry guidance on the Government's Carbon Reduction Commitment and advised the Department of Energy & Climate Change on the emerging Display Energy Certificates (DEC) programme. All of these were important forerunners to the Government's current net zero commitments.

In addition to this thought leadership, we have worked on a number of ground-breaking "proof of concept" low carbon projects – most notably the Olympics Legacy Masterplan, the Northwest Cambridge development for the University of Cambridge, World Wildlife Fund Headquarters and Manchester Metropolitan University Birley Fields. All of these were highly visible and innovative low carbon projects that set cutting-edge performance targets at the time of their development.

As the concept of net zero carbon has evolved, we have continued our leadership role. For example, we have developed, in connection with the University of Cambridge and Price & Myers, the embodied carbon tool known as "PANDA." A first of its kind, PANDA is a fully working software package that assesses steel, concrete and timber framing options and their foundations against embodied carbon and monetary cost.

We are also in the process of developing industry guidance for "net zero fit-outs"— what we see as a current gap in the market. This project is in collaboration with other industry partners and is modelled on the RICS Ska Assessment methodology, for which we were a Development Partner.

Gardiner & Theobald also established the Mass Timber Forum in 2020 to assist our clients with their net zero carbon commitments. As timber becomes a more attractive solution for low embodied carbon construction, we have created an expert network and information-sharing forum to better understand costs and programme implications.

Finally, on the infrastructure side, we cover a number of the Government's 10 point plan issued in November 2020. We have expertise project managing and costing projects in electric vehicle charge points, and run a webinar and knowledge series. We will also be running a hydrogen webinar series which aims to share knowledge and connect design companies to Gardiner & Theobald and our clients. Within our Infrastructure team, we work closely with

our clients to develop Balanced Scorecards enabling demonstrable alignment with the Construction Playbook and Government policy. A Balanced Scorecard is a visual tool that articulate outcomes and benefits for a project or programme, relating these directly to key deliverables such as client requirements and sustainability objectives (triple bottom line social, economic and environmental). Our clients use this tool to capture their sustainability and net zero carbon requirements to the supply chain, creating a common understanding of the client's ambition. Through a suite of procurement evaluation criteria and key performance indicators, clients can assess and monitor how the supply chain is contributing to achieving sustainability and net zero carbon outcomes and realising benefits.

cost consultants selected to partner with The Carbon Trust



Worked on a number of GROUND BREAKING "proof of concept" low carbon projects



Established the

MASS
TIMBER
FORUM
2020





We are currently working on several key projects that are implementing various net zero carbon standards. As a result, we have a comprehensive view of the subject and a knowledge of the important "crosswalks" between different approaches (below we highlight which standards are involved in specific projects).

Many of these projects are pursuing not just net zero carbon goals but also top sustainability aspirations (for example, BREEAM "Outstanding" and WELL "Platinum"). We therefore have a good understanding of the synergies involved in attaining high certification levels while also reaching newer net zero carbon goals.

Below are some examples of our net zero carbon experience:

The Forge

The Forge is a landmark new development that is billed as the "the UK's first net zero carbon commercial building." It is to be constructed and operated in line with the UKGBC's framework definition of net zero carbon buildings.

The Forge has been awarded funding from Innovate UK to deliver the world's first-ever office building using a platform-led approach to design and construction. This approach has been identified by the Government as essential to the transformation of the low carbon construction sector. As a result of new construction techniques and materials, delivery times and costs are expected to be reduced by one-third compared to the same project delivered in a more conventional manner.

Garfield House

G&T has recently been appointed to advise on this new mixed-use scheme of office, retail and residential properties. In addition to providing cost consultancy, G&T was appointed separately to provide a sustainability and net zero carbon specialist role, including assessing the relationship between net zero carbon and health and wellbeing. Net zero carbon and health and wellbeing are the two main drivers of sustainability, but they can conflict, so we will be actively involved in delivering buildings that are both net zero carbon and healthy.





2-3 Finsbury Avenue

This is an early, high-profile project for net zero carbon properties in London. It is using the UKGBC standard for net zero carbon, which includes requirements for both construction and operation. Importantly, the UKGBC model also considers "whole building" energy limits which are very likely to be challenging, as they involve not only tight limits on energy consumption but also cooperation between landlords and tenants.

The 2-3 Finsbury Avenue project is also targeting BREEAM "Outstanding." We are closely following the cost and performance implications of overlaying traditional sustainability tools (BREEAM) with newer net zero carbon obligations. This is so that we can develop efficient sustainability strategies for properties seeking dual or multiple certifications — a trend we anticipate will increase in the industry.

1 Museum Street

1 Museum street is a new office build development that has signed up to be a LETI "Net Zero Carbon Pioneer." As a demonstration project for the LETI standard, the project will be a knowledge-sharing effort to test LETI embodied carbon indicators with current construction materials and methods.

Black & White Building

The Black & White Building is an innovative new office scheme will be the first timber office building built in London since 1666. This highly sustainable project eliminates the use of concrete above the ground floor slab and is being built entirely from timber from renewable sources.

The project, which is being guided by our work in the G&T-led Mass Timber Forum, will feature the following: LVL beams and columns, CLT floor, walls, core and stairs, and a timber curtain walling stick system with a brise soleil. As part of our work on this project, we will be running a side-by-side analysis of the impact of wood versus other materials (steel, concrete, etc.) to understand carbon and financial implications.





The Edge, London Bridge

The Edge is one of the most talked-about new projects in the London market and G&T is heavily involved. We are currently retained for a range of services: project management, cost management, employer's agent, principal designer & CDM consultancy and life cycle costing.

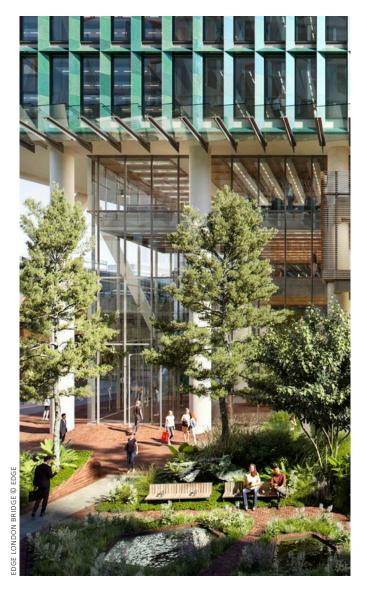
In addition to targeting net zero carbon (for both construction and operation), the project is also seeking to attain both BREEAM "Outstanding" and WELL "Platinum." These proposed credentials arguably make The Edge a contender for one of the world's most sustainable buildings.

New City Court

G&T is acting as project managers for New City Court, a 21-storey office tower near London Bridge. The building is designed to: outperform building regulations by nearly half, use less than 50% of the water that would typically be consumed by a similar building, and send no waste to landfill when it is operational.

New City Court is seeking top sustainability credentials, including BEEAM "Excellent" and WELL "Gold." The building is also seeking to be net zero carbon and is a pioneer project for the new NABERS-UK sustainability certification scheme. New City Court is also a test project for the Design for Performance initiative, a highly anticipated programme that looks to ensure that buildings perform efficiently when in use.

As you can see from the above examples, G&T has a long history of developing sustainable buildings at the highest level, including BREEAM "Outstanding," WELL "Platinum" and now net zero carbon. We are also leaders when it comes to new certifications and standards, having helped to develop the World Green Building Council's Healthy Buildings Framework and early versions of NABERS UK.





OUR OWN JOURNEY TO ZERO CARBON

Gardiner & Theobald has had a firm commitment to reducing carbon year-on-year since achieving ISO 14001 certification in 2008. Reducing carbon has also been the number one priority of G&T's Sustainability Policy and related Environmental Management System.

Over the last decade, we have consistently reduced carbon in our business operations, earning us the commendation of our ISO 14001 auditors. Due to our carbon efforts – which have been externally verified – we have achieved a 100% score in our annual Achilles Verify certification for the last five years.

In addition to reducing our carbon, we have also been transparent in reporting our emissions. G&T was an early adopter of carbon reporting through the Carbon Disclosure Project. In 2020, we complied with the Simplified Energy and Carbon Reporting Scheme (SECR), with carbon impacts that are considered low for an organisation of our size and activity.

As part of our ISO 14001 commitments, we send no waste to landfill (thereby reducing our Scope 3 emissions). This reduces methane – a highly potent greenhouse gas. This is true for all our waste, including food waste.

We have also reduced emissions from company mileage substantially over the last decade. We have a dedicated travel policy that encourages public transportation and the use of videocalls to reduce travel emissions. G&T also has a generous cycle-to-work compensation scheme.

We have actively promoted knowledge-sharing of net zero carbon issues and mitigation strategies through public discussions, webinars and working with local suppliers.



Over the last decade, we have consistently reduced carbon in our business operations"



THE G&T CARBON PROFILE

G&T generates most of its carbon emissions from two business activities: 1. the occupation of its workplaces and 2. business travel as needed to deliver our services.

We have undertaken an analysis of the carbon profile for G&T for both buildings and travel. We have used 2019 numbers as this is the most recent representative year.

Buildings

The carbon footprint of our buildings is as follows:

Our carbon emissions from the operation of our buildings represent about 350 tonnes.

These carbon emissions are derived from three buildings where G&T has "financial/operational" control (where G&T pays the bill and therefore has influence over the selection of energy provider). Financial/operational control is a commonly recognised boundary for determining what building emissions should be counted.

As G&T considers its approach to net zero, it is important to note the following:

- We have already begun to procure renewable energy.
 At our South Crescent headquarters, by far our largest premise, we have signed a new contract with a renewable gas supplier.
- We have worked with the landlord at our second biggest workplace to switch to renewable energy for electricity – this has now happened.
- We are currently exploring renewable electricity options at South Crescent. We intend to switch to renewable sources for electricity as early as next year.
- Under our current plan, G&T would be operationally net zero carbon in its buildings as early as 2022.

Travel

We have also measured our carbon emissions for business travel using our own invoices for mileage and working with our travel agent to account for trains, flights, hotel, etc. Where we have had most direct control over emissions - company mileage – we have steadily reduced carbon over the last decade. As we move to net zero carbon commitments, we will carefully scrutinise business travel to ensure that only essential trips are undertaken.

According to our most recent representative year (2019), our carbon emissions from our travel activities are around **675 tonnes**.

We are committed to encouraging our colleagues to reducing business travel. We fully expect that the pandemic will change practices and expectations, for our clients and for us.

Before setting an annual target or committing to an overall reduction, we would like to understand the trajectory of business travel in the wake of the last year. Accordingly, we will assess our travel emissions once we see a more regular pattern of busines travel to see how our emissions compare with travel from 2019. Once we have this data, we will review with a view to establishing a per annum target.

Consumables

The third area where we are committing to reductions in carbon is through the procurement of materials and services in our buildings. For example, G&T consumes paper, office supplies and catering in the normal course of business. All of this creates carbon that should be measured, understood and reduced over time.

We have already begun to take action on this front. We are instituting "follow me" printing which will reduce our paper use by an estimated one-third. We are also nudging existing suppliers towards lower carbon products and services and/or seeking out new products (for example, low embodied carbon paper and other business supplies).

We have done this previously with our waste supplier. Under our contract, no waste from South Crescent is sent to landfill, including food waste. Moving forward, we will examine the carbon content of our consumables and identify ways through reduction and product replacement to lower carbon impacts from these items.



G&T'S OVERALL CARBON COMMITMENTS

In many respects, G&T has been moving towards lower carbon for quite some time – we have already made substantial reductions in our carbon emissions. Nevertheless, G&T is committed to reducing carbon as far as possible and continuing our leadership, both for our clients and our colleagues.

Our commitments are as follows:



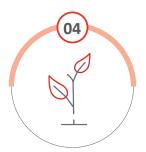
We will continue to measure and reduce our carbon emissions from all of our activities, especially in light of recent events which may alter more permanently how we use premises and think about travel. We suspect that 2019 will be the "high water mark" as we go forward, but there is much uncertainty as of yet as to what "normal" will look like. Hence, while we promise to continually reduce our carbon emissions, we would want to understand the numbers before delineating specific targets.



In all of our activities – whether it is building operation, travel or procurement – we commit to being more efficient and to demonstrating real reductions in our impacts. This includes reductions in energy we can make at our buildings, and what impacts will follow from: operational changes, improvement to lighting and equipment, anticipated changes to our small power loads resulting from a move to cloud computing, etc. We agree that allowances should be purchased only as the last option and so our priority is real reductions in carbon achieved at our sites and in our activities.



The procurement of renewable energy which we have undertaken – and will continue to pursue – is one of the more meaningful choices we can make. We expect through our changes in suppliers to be operationally net zero carbon in our premises by as early as next year. Concurrent with this, we will continue to reduce our overall energy usage more generally, so that procurement is the option after we have run our operations as efficiently as we can.



We have taken, and will continue to pursue, actions and decisions that reduce "Scope 3" emissions – those from our supply chain and waste. Already, our zero waste to landfill policy helps us in this regard, but we will work backwards from here to eliminate carbon emissions at the source. This will be through a reduction in materials – e.g. our follow me printing activities – and seeking suppliers whose manufacturing and delivery enables a lower embodied carbon product.



Ultimately, and in steps, we aim to be net zero carbon as a firm by 2030. We believe that our first successes will come in our buildings, but we aim to drive down travel emissions as much as possible while still being able to provide our high level of service. Naturally, we will never be able to completely eliminate carbon as long as we operate, but through efficiency, better procurement decisions and, when needed, the purchase of high-grade carbon "Gold Standard" allowances, we expect to be a net zero carbon firm by the end of this decade.

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