HOW CAN THE CONSTRUCTION SECTOR BECOME A CATATLYST FOR NET ZERO CARBON?

The Worshipful Company of Constructors

A FOCUS ON THE CLIENTS

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EXECUTIVE SUMMARY

The public are protesting and students are striking. Governments, companies, and organisations are declaring climate emergencies and a net zero carbon target is now enshrined in law. We are in a race against time to radically decarbonise our economy to avoid the existential threats associated with climate change.

The built environment contributes around 40% of the UK's carbon emissions through construction, operation, and maintenance[1]. Construction will play a crucial part in achieving a net zero carbon economy by 2050 - new construction must support achievement of this target and not add to the carbon problem.

This research project aims to identify the motivations of construction clients in relation to net zero carbon and identify how the transition to a net zero carbon construction sector can be sped up, from the perspective of clients. We explore the motivators for change and outline five lessons to speed up the transition to a net zero carbon construction sector. The findings are the result of a literature review, semi-structured interviews and thematic analysis carried out with construction clients and their advisors.

We found that seeking legitimacy and market opportunity are important motivators for clients.

We identified five lessons that may help to speed up the transition to a net zero carbon construction sector that include:

1. *We need to define 'net zero carbon buildings'*
2. *Whole life carbon must be considered*
3. *Systemic change requires systemic action*
4. *Sustainability is not dead (deliver net zero carbon as part of a wider sustainability offer)*
5. *Public sector procurement is a key to help unlock net zero carbon buildings*

A net zero carbon transition is not going to happen overnight in the construction sector but now is the time to move from discourse to action. The motivators for change are clear, and the five lessons highlight the action needed to start bringing the net zero carbon ambition of the sector to life.

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ABOUT THE SCHOLARSHIP

The Sustainability Scholarship encourages a company to carry out research using one of its employees. Established in 2007 jointly with the CIOB and the University College of Estate Management, the scholarship is awarded annually.

UCEM
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The built environment contributes around 40% of the UK's carbon emissions through construction, operation, and maintenance. Construction will play a crucial part in achieving a net zero carbon economy by 2050 - new construction must support achievement of this target and not add to the carbon problem.

WHY ARE WE HERE?

The public are protesting, and students are striking. Governments, companies, and organisations are declaring climate emergencies and a net zero carbon target is now enshrined in law. We are in a race against time to radically decarbonise our economy to avoid the existential threats associated with climate change.

Over recent years, there has been a fundamental change in conversations around the decarbonisation of the construction sector. The sector has had its electric car moment; it has recognised that change needs to happen. This is encouraging, however despite the 'noise', there has been limited tangible change. Net zero buildings are not yet being delivered at scale.

The construction sector has an opportunity to be the change the world needs and become a catalyst for net zero carbon, but how does it move the dial further than the current discourse?

This playbook is a summary of an academic research project that aimed to identify the motivations of construction clients and determine how the transition to a net zero carbon construction sector can be sped up. In this playbook we explore the motivators for change and outline five lessons to speed up the transition to a net zero carbon construction sector.

The findings are the result of a literature review, semi-structured interviews and thematic analysis from several construction clients and their advisors including:

The Crown Estate, Canary Wharf Group, UK Green Building Council, Better Buildings Partnership, Mike Barry, M&G Real Estate, Sero Homes, Exeter City Council, Willmott Dixon Construction, Derwent London, Peel LLP, Low Carbon Estates, Integral Group, The Ministry of Justice.

This is a summary playbook; a full academic report is available on request.

MOTIVATORS FOR CHANGE

LEGITIMACY

In order to maintain market position, organisations must remain relevant.
Any organisation that fails to keep up with societal change, risks becoming obsolete.
With pressure from governments and society to adopt sustainability management and net zero carbon, this is forcing organisations to gain and secure legitimacy in this area[2].

Clients tell us that seeking legitimacy is a highly relevant motivator of their organisations. The climate strikes in the last 18 months and the response to the Blue Planet documentary have highted a society wanting action. Organisations know as part of their legitimacy they need to be seen to be responding and taking action to the unfolding crisis.

"There has been a net zero explosion in the public consciousness - a definite change or shift over the past year with all the different protests."
Participant B

Not only is society demanding change, but government is too.
The government net zero target for 2050 highlighted to organisations the future direction of policy and regulation. Organisations know that they need to remain on the right side of regulation and where possible pre-empt and prepare for it.

"We've seen the national government's commitment to net zero, and that gives us long term policy clarity and we fully expect strong regulation in the built environment to follow"
Participant A

We know that seeking legitimacy is a highly relevant motivator for pursuing a net zero carbon target, as it is consistent with other research into motivations relating to sustainability practices. However, there are contradictions and some research into this area suggests seeking legitimacy is a less important than other motivating[3] factors such as market opportunity or internal improvement.
Previous research suggests this contradiction could be linked to social desirability and interviewees essentially telling the interviewer what they want to hear[4], however this seems unlikely in this instance for three reasons:

(A) The specific events highlighted as drivers for change in the previous 18 months (climate strikes, Blue Planet) have caused the societal and government pressure

(B) Some clients already have a framework they are implementing to achieve net zero carbon that encourages full transparency (UKGBC and BBP)

(C) A lack of clarity around definitions is an issue and if resolved would support their drive towards net zero and allow them to be more robust in their net zero claims

MARKET OPPORTUNITY

Motivation for sustainability management, or a net zero carbon target, can be created through the behaviour of consumers, investors or competitors[5].
For private sector clients, creating market opportunity or gaining competitive advantage was an important motivator. While previous research identifies market opportunity as a moderately important motivator, its importance has significantly increased recently, particularly with investors.

Investors are concerned about high carbon assets becoming stranded, which is echoed in industry reports[6]. Investors also anticipate that low carbon buildings will hold their value longer. It is also becoming evident that low carbon and sustainable buildings can yield higher rent and are already seeing higher asset values in the commercial market[7]. Some participants commented that low carbon or net zero domestic buildings are not currently valued higher than their high carbon alternatives, and this is a barrier that will need to be overcome to drive change.

"A lot of property is owned by pension funds, and those fund managers have been reading reports that sustainable assets hold their value longer, and are going to be more robust in down markets."
Participant F

The clients are seeing demand being driven by occupiers too,[8] and this is increasing in line with the client trends, indicating that occupiers are experiencing the same pressures from society and government that motivate them to seek legitimacy.

Regardless of the type of organisation, they all see net zero carbon targets as part of a wider sustainability and quality offering. Being an early adopter and embracing the future will strengthen their brand and provide competitive advantage. In an increasingly competitive environment, organisations with differentiators that resonate with societal changes and the fundamental environmental challenges we all face are likely in the future to outperform those organisations that do not.

"We know that the world is changing and we're operating in an incredibly competitive environment and sustainability is one of those attributes that we believe will contribute to a quality building, it can be a USP to attract like-minded customers, it is a real motivation for us for adopting net zero."

Participant B

SPEEDING UP THE TRANSITION TO NET ZERO CARBON

Five lessons have been identified to implement low carbon change in the construction sector.

LESSON 1:
WE NEED TO DEFINE ‘NET ZERO CARBON BUILDINGS’

A more precise definition of a net zero carbon building is needed, which should consider whole life carbon emissions. While most clients agreed that a more precise definition is required, there was agreement that a lack of **a definition should not be an excuse for failing to act.**

“We are operating in an environment where there isn’t 100% clarity about what we’re actually working towards.”
Participant A

Giving a clearer definition of net zero would provide consistency, transparency and legitimacy whilst also reducing the potential burden shifting of emissions - a more energy efficient building may have higher embodied carbon[9]. It would also give confidence to society, government, occupiers, and investors of a building’s net zero credentials.

To support credibility and consistency, a definition of net zero should be certified or verified through an independent audit to encourage take up.

“I think it’s pretty clear what net zero is, but what’s not clear is how much you have to offset and the credibility of the offset schemes - zero carbon doesn’t mean zero energy. Science based targets are a great step, because it allows you to raise the dialogue in the board room, about getting on a long-term trajectory towards net zero.”

Participant D

LESSON 2:
WHOLE LIFE CARBON MUST BE CONSIDERED

To date attention has been focused on in-use emissions. As a first Piece of the pie this is understandable, however it is problematic as it neglects the whole life carbon of a building. **We need to shift to considering whole life carbon,** as more energy efficient buildings may in fact have higher embodied carbon and in-use carbon represents on a proportion of lifetime emissions.

"Our approach is that we are going to focus on operational carbon, probably for the next five years, and then embodied carbon will have to wait and we'll play catch up, as it's not our area of expertise and we don't have enough control over it''

Participant A

There needs to be increased carbon accounting or life cycle assessment modelling as it will invariably improve scientific credibility of decision making during the design process. It is important that when the assessment takes place, it needs to be early in the RIBA stages, otherwise the ability to make decisions to achieve net zero will be challenging. It needs to be embedded into the building concept from the very beginning.

"Embodied carbon is an important issue; we are unsure how we influence that issue in any meaningful sense, given we are not really specifying the materials and a lot of those decisions around structure are already made. Now arguably the easiest way we can influence is to say we're not going to do this development, but given that's not likely to happen, not yet anyway."

Participant B

There is an argument that regulation has a role to play here. Several academic studies call for regulations to complete life cycle assessments on buildings to determine the whole life carbon impact[10]. This would allow the effectiveness of policy and regulation to be understood, as at present this can only be inferred from the impact that it has had on reducing operational energy from buildings.

"There is great discussion and a little bit of denial about who owns some of the embodied carbon, we've had some interesting discussion with contractors, some more enlightened than others in their role in this."

Participant A

If national governments regulate for life cycle assessments of buildings, including the embodied impacts through the whole life as well as the operational impacts, it would be a game changer[11]. In the meantime, the construction sector needs to speak up and make their voice louder to support the shift to whole life carbon assessments.

LESSON 3:
SYSTEMIC CHANGE REQUIRES SYSTEMIC ACTION

Voluntary measures alone will not drive the change that is required. Early adopters are leading the charge, but the pace of change is slow and the question is when government will step in. Academics are clear in their assessment; market forces alone cannot be relied upon to scale up green building[12]. The dismantling of the Zero Carbon Homes Policy and swings in government policy have led to uncertainty and investment risk in the green building sector[13]. This needs to be addressed through policy changes and regulation that will help speed up the transition to net zero.

These changes are not going to come overnight, so clients still have a responsibility to drive change and sustainability performance. They can take a lead by demanding good sustainability performance as without setting these standards, the fear is that lowest cost will erode any change. There is a potential that it would not be until the crisis is so severe that legislation would be brought in, and the question would be, "Is this too late?" The answer is that yes, it probably would.

It is of course not only clients that have a responsibility to demand change until regulation forces it; the construction sector has an equal role to play. A barrier to this may be inherent within the construction sector in terms of how the market operates. For example cutthroat competition, low bidders, lack of trust and poor risk management are cited as industry failings. These systematic failures may add to slow progress in terms of net zero construction and need to be addressed[14].

"You have to have policy drivers as well, the reason why I think policy is very important is you have very large organisations like ourselves that will commit to it from a reputational point of view, but there many others that are not at that level, and you need to send clear signals to the market that change must happen."

Participant A

LESSON 4:
‘SUSTAINABILITY’ IS NOT DEAD

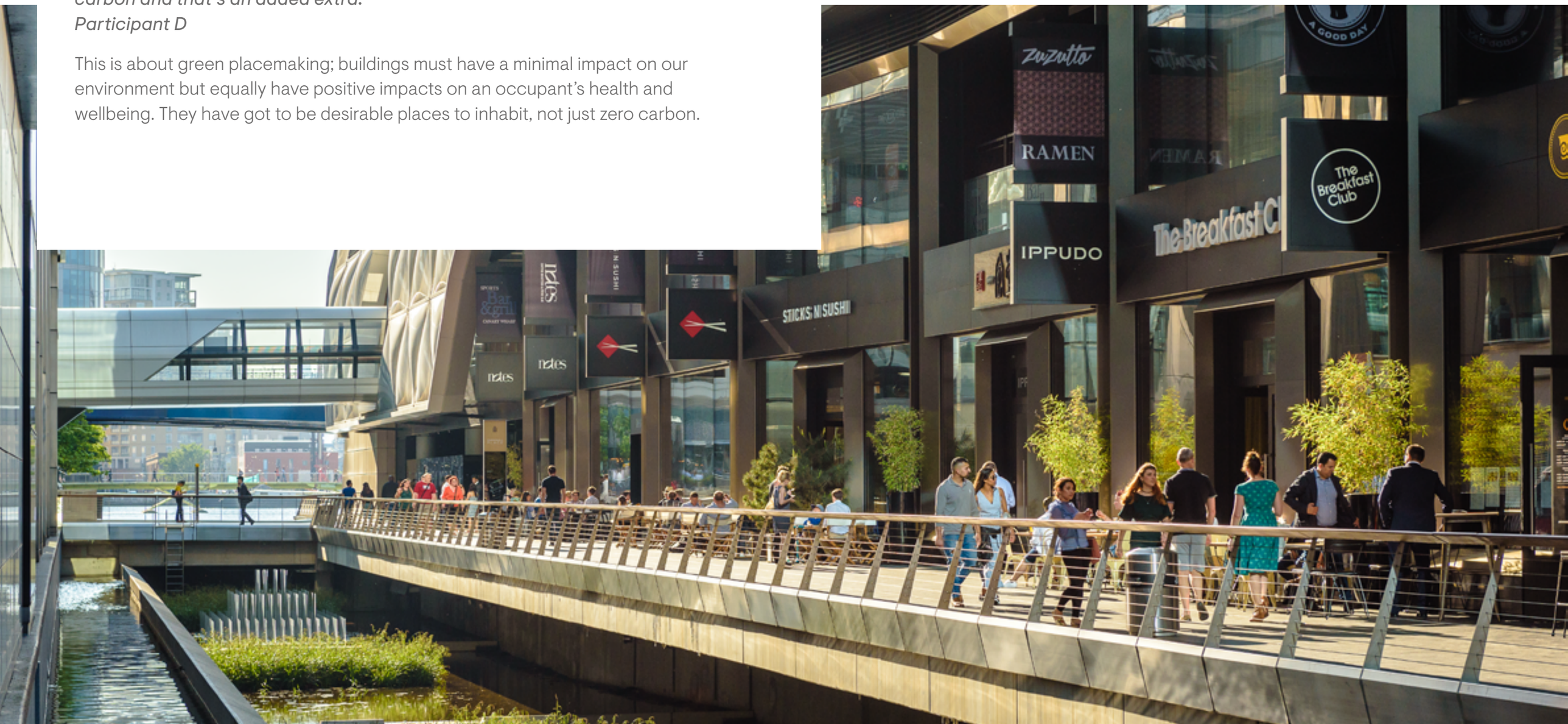
There is a concern that by just focusing on net zero buildings we lose sight of why net zero is important and that it is in fact part of a wider sustainability agenda. **Net zero should be part of a wider holistic approach to sustainability, such as health and wellbeing, circularity, flexibility, and biodiversity.**

“I don’t think you’ll get net zero carbon without being holistic – if you look at it on its own, it’s a lot more interesting than what it used to be, what’s most interesting is a beautiful biophilic office, with timber flexible space – you won’t sense zero carbon – you feel this is an amazing space – and wow, it’s also zero carbon and that’s an added extra.”
Participant D

This is about green placemaking; buildings must have a minimal impact on our environment but equally have positive impacts on an occupant’s health and wellbeing. They have got to be desirable places to inhabit, not just zero carbon.

“If I am going to buy a greener building from you, first and foremost it’s got to function well, it’s got to be light, bright, brilliant place to be, and by the way it’s also green. In the past a lot of green marketing has made the mistake of just lazily saying, this is green so you should buy it, I know it’s going to cost you more and it looks a bit ugly, but hey, live with it, because it’s green – this is fundamentally wrong, and we must not lose sight of what we are trying to achieve’’

Participant E



LESSON 5:
PUBLIC SECTOR PROCUREMENT IS ONE KEY TO HELP UNLOCK NET ZERO CARBON BUILDINGS

Conversations are changing in the public sector, with many local councils declaring climate emergencies and publicly stating their desire to deliver net zero carbon buildings. They have the ambition for change and the local political will, as they too are seeking legitimacy from their communities. However, until procurement strategies are aligned to support net zero measures, progress will continue to be slow[15].

The UKGBC call on national and local governments to use their net zero framework to increase demand for net zero carbon buildings. Furthermore, they suggest **public procurement should be used to encourage net zero carbon buildings.** They outline how current and potential future policy tools might be used to support their framework. There is a voluntary aspect from industry that falls outside of policy; it is uncertain how this voluntary element of industry can be stimulated to increase demand.

With the lifecycle of procurement frameworks lasting around five years, action needs to be taken now to ensure that net zero carbon requirements are embedded into frameworks.

There will be the continuing issue that low carbon can equal higher cost, and the public sector will need to battle in implementing procurement change by realising the long-term value associated with net zero carbon assets. They should not underestimate the power they have in influencing the construction sector towards net zero carbon buildings.

A net zero carbon transition is not going to happen overnight in the construction sector but now is the time to move from discourse to action. The motivators for change are clear, and the five lessons highlight the action needed to start bringing the net zero carbon ambition of the sector to life.

“When we re-do the framework, we’ll have expectations and if they don’t meet them, they can’t come onto the framework. It may include, that have they signed up to the climate change targets or have they got a net zero carbon plan. We need to see tangible action now.”

Participant J

FURTHER INFORMATION

To discuss the report or request the full report please email:
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