

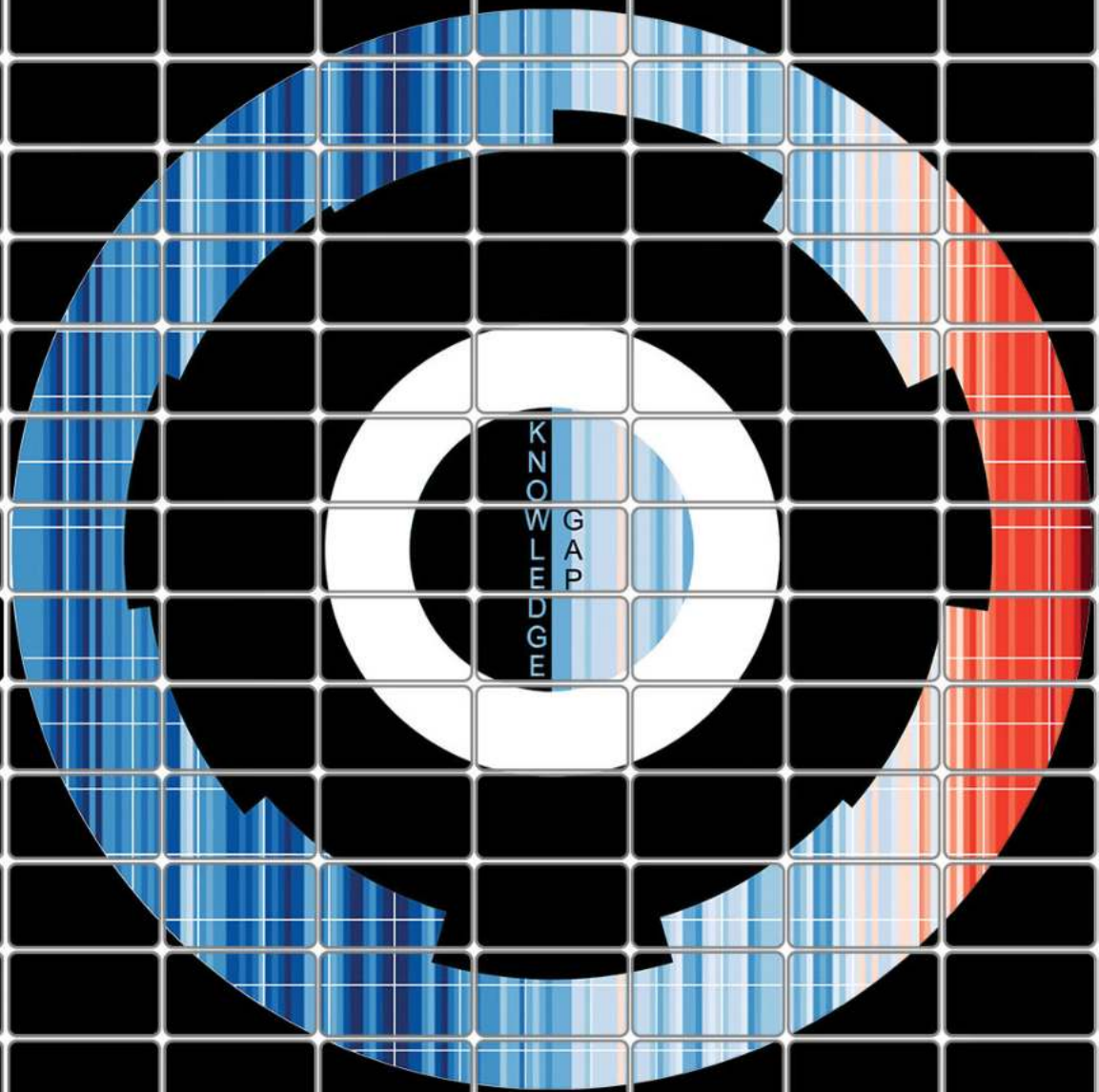




“A recent survey conducted by the Architects Climate Action Network (ACAN) revealed that 76.9% of students do not feel their course is properly preparing them for future work.

It also found that 88.5% of students wanted to be tested on their ability to design net-zero buildings, but that “aesthetics are valued more than sustainable design” at their institution.”

Failure to teach net-zero architecture skills “is negligent and verges on denialism” says Anthropocene Architecture School founder



CLIMATE LITERACY

LOADING...

RESTORD 2030

A Regenerative Guide for
Educators Students and Practitioners

EDITORS

Martin Brown and Carlo Battisti

“Climate literacy is the contextual, pragmatic understanding of the implications of climate breakdown upon any given activity, its own contributions towards those implications, and recognition of where it has the potential to positively respond.” - Brown and McAulay in RESTORD 2030 (2021)

HAVE WE KILLED THE PLANET?

NSA LIVE 2021

Heat and buildings are responsible for 41% of the UK's carbon emissions.



Humans cannot survive catastrophic climate change



An inhaler is not something anyone would like to rely on, but with the condition of our city as many of us have had to resort to using such a tool.



"Should I use the lift with a coat on the stairs? Should I use the lift with a coat on the stairs? Should I use the lift with a coat on the stairs?"

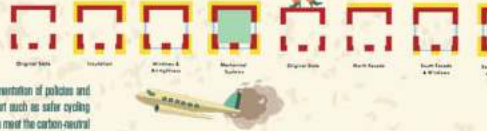


TELEMAPAIN

One easy and simple way anyone could 'switch' their home to be using thermal paint, as it is a small step in creating a home more adaptable to the environment without having to change the physical structure.

Turning the master switch on before leaving home. Making conscious decisions in your everyday life can have a large impact on our environment and, therefore, our wellbeing. Installing a master switch is a helpful and efficient way to reduce home energy use – as you leave the house and switch it off, it turns off everything except the fridge/freezer.

Component by component approach



One facade at a time



Benefits of retrofitting



Waking up on a February morning sweating. This sounds like a rare occurrence to most UK residents, but as we move towards irreversible levels of global warming this could become common. It will take drastic action to limit global average temperatures warming by 1.5°C.



Thankful dioxide • Sustainable • Less pollution



The route into the city is a busy road with no bike lane. Implementation of policies and infrastructure which encourage the use of sustainable transport such as safer cycling lanes, clean air zones and renewable energy buses are needed to meet the carbon-neutral goal of 2038. With only 20% of cyclists feeling safe riding in the city, it is essential that we urge the council to further invest in accident preventative measures. There should be a push towards disincentivising the use of cars in the city centre - these parking spaces could be replaced with facilities for cleaner travel such as secure bike storage units.



What needs to happen to reach Net Zero targets by 2050?

- 11 million more homes retrofitted
- 100,000 more electric cars
- 100,000 more electric bikes
- 100,000 more electric scooters

Choosing to cycle over taking a public bus. Active commuting by walking or cycling benefits personal health, as well as the local and global environment. During the COVID-19 lockdown, many cities had the opportunity to open up more space for cyclists and pedestrians on the roads. With Manchester already having the lowest cars per capita in the UK, we are already well on our way to a cleaner air friendly city.



Cycling past a building site advertising a smart window facade. Smart layer of titanium dioxide can be applied onto surfaces like glass, concrete, metal, or fabric. A chemical reaction occurs when struck by sunlight. The titanium substance reacts, and starts to process pollutants in air into water vapour and CO2. This is a new technology material that is not used often in construction yet but can be a way to lessen the pollution impact upon the environment.



POCKET PARK

Residents' living and working great from here!

Living walls create a rich aesthetic and diverse microhabitat for urban wildlife



What is Manchester currently doing?

NATURAL GAS

Cycling past Overgate living wall. Green infrastructure such as living walls ameliorate the urban heat island effect and create a biophilic effect. Green walls absorb pollutants and improve the surrounding microclimate for better air quality and can even provide buildings with soundproofing and structural protection. Species can be tailored to the aspect of a wall and irrigated through smart technology drip systems.




Overlooking the Tower of Light and protesters stood outside. The Tower of Light is a 40m tall, low-carbon heat and power generator for nearby public buildings, designed to save an estimated 3,000 tonnes of carbon emissions in the first five years. However, the design has been criticised which means the tower uses some natural gas, growing the city's carbon footprint rather than shrinking it.



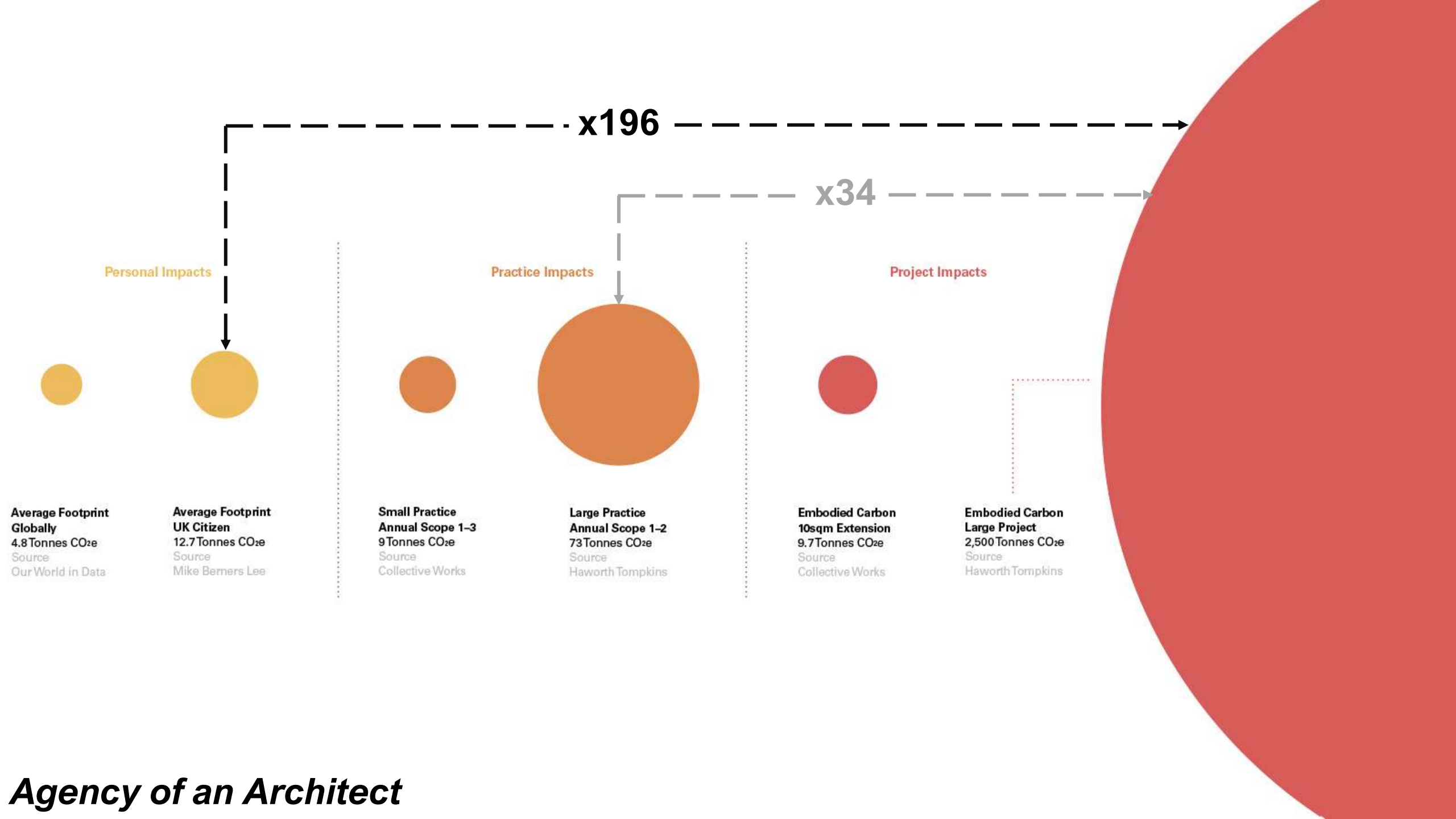
Arriving at the destination and getting their laptops out. They begin to question what they can do now.





“The world of architecture and construction ... remains very closely interlocked with the main energy story of its time. In an unsustainable world, almost all architecture remains dependent on fossil fuels, whatever green claims developers and designers might publicise. On building sites everywhere, new buildings are still rising in the unsustainable concrete and steel that characterised the gleeful energy frenzy of the 1960s.”

Barnabus Calder in [*Architecture: From Prehistory to Climate Emergency*](#) (2021)



Agency of an Architect

Climate Change 2022 Mitigation of Climate Change

Summary for Policymakers



Sectoral and system mitigation options

	Relation with Sustainable Development Goals																	Chapter source	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17		
Urban systems	Urban land use and spatial planning	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	Sections 8.2, 8.4, 8.6
	Electrification of the urban energy system	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	Sections 8.2, 8.4, 8.6
	District heating and cooling networks	+	-	+				+	+	+		+	+					+	Sections 8.2, 8.4, 8.6
	Urban green and blue infrastructure	+	+	+	+		+	+	+	+	+	+	+	+	+	+	+	+	Sections 8.2, 8.4, 8.6
	Waste prevention, minimization and management	+	+	+			+			+								+	Sections 8.2, 8.4, 8.6
	Integrating sectors, strategies and innovations	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	Sections 8.2, 8.4, 8.6
Buildings	Demand-side management	+	+	+			+	+	+	+	+	+	+	+	+	+	+	Section 9.8, Table 9.5	
	Highly energy efficient building envelope	+	+	+	+		+	+	+	+	+	+	+	+	+	+	+	Section 9.8, Table 9.5	
	Efficient heating, ventilation and air conditioning (HVAC)	+	+	+			+	+	+	+	+	+	+	+	+	+	+	Section 9.8, Table 9.5	
	Efficient appliances	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	Section 9.8, Table 9.5	
	Building design and performance	+	+	+			+	+	+	+	+	+	+	+	+	+	+	Section 9.8, Table 9.5	
	On-site and nearby production and use of renewables	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	Section 9.8, Table 9.5	
	Change in construction methods and circular economy						+	+	+	+	+	+	+	+	+	+	+	Sections 9.4, 9.5	
	Change in construction materials						+	+	+	+	+	+	+	+	+	+	+	Section 9.4	

Type of relations:

- ⊕ Synergies
- ⊖ Trade-offs
- ⊕⊖ Both synergies and trade-offs⁴
- Blank represent no assessment⁵

Confidence level:

- High confidence
- Medium confidence
- Low confidence

Related Sustainable Development Goals:

- 1 No poverty
- 2 Zero hunger
- 3 Good health and wellbeing
- 4 Quality education
- 5 Gender equality
- 6 Clean water and sanitation
- 7 Affordable and clean energy
- 8 Decent work and economic growth
- 9 Industry, innovation and infrastructure
- 10 Reduced inequalities
- 11 Sustainable cities and communities
- 12 Responsible consumption and production
- 13 Climate action
- 14 Life below water
- 15 Life on land
- 16 Peace, justice and strong institutions
- 17 Partnership for the goals

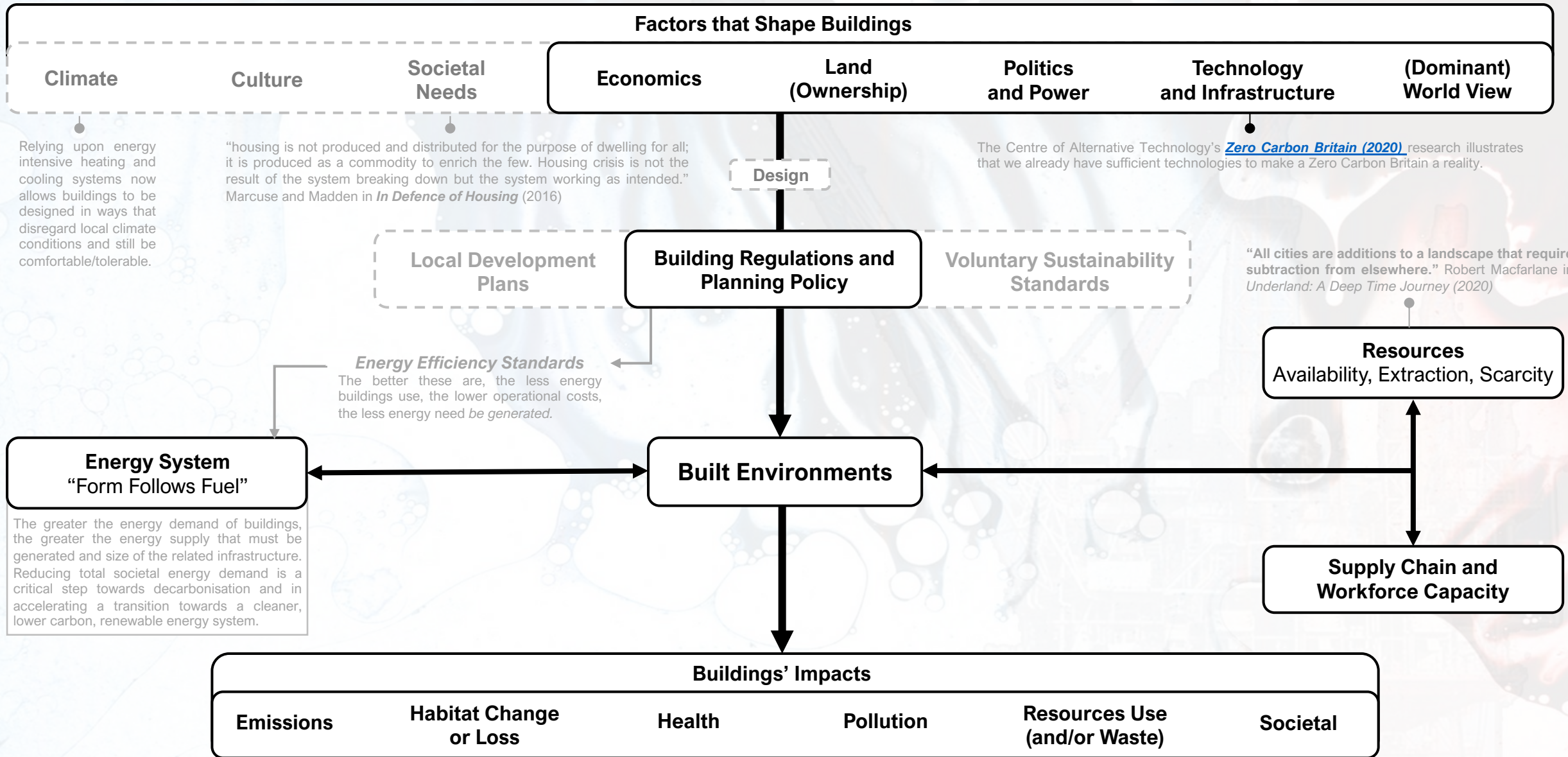
¹ Soil carbon management in cropland and grasslands, agroforestry, biochar

² Deforestation, loss and degradation of peatlands and coastal wetlands

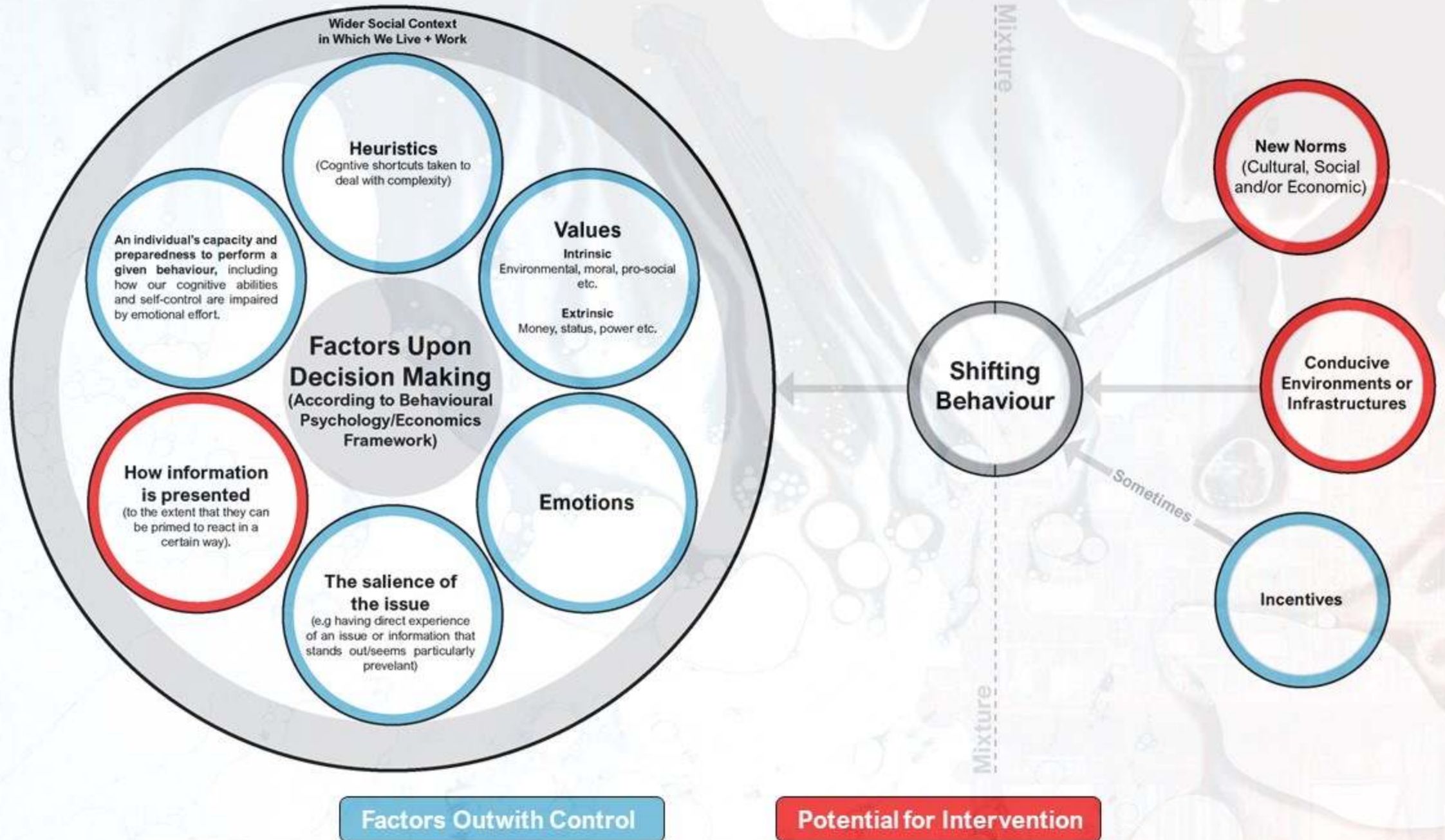
³ Timber, biomass, agri feedstock

⁴ Lower of the two confidence levels has been reported

⁵ Not assessed due to limited literature



Entanglement of an Architect





“As it is the business of architecture schools to train students for future practice, one would be justified in expecting them to have spent some intellectual energy anticipating what the future might be”

*- Professor Susannah Hagan in **Revolution? Architecture and the Anthropocene** (2022)*

RE-IMAGINE YOUR FUTURE(S)



TANGENT CIRCLES OF PERSONAL INFLUENCE



PERSONAL



IMMEDIATE FAMILY



SOCIALLY



I wish to work in a dream utopian environment built out of a successful integration of nature and urbanism, running on clean energy and a positive mindset. The vertical workshop has changed my thought process a lot and nudged me in the path to bringing about a change in the environment at a personal level and spreading awareness to the people I meet. The first step in bringing about a change, I feel, is the need for people to know that there is a

ACTIVISM

Climate change has always been the main driver for each project throughout my journey in the MSA. It wasn't until I was shown the tangent diagram that I realised how inactive I have been with my beliefs. Re-Imaging Futures workshop has helped me realise the importance of community engagement within larger urban projects, and how this can influence and my future projects both in university and my life in practice.

I have always believed that climate change is a ticking boom that we all need to deal with. When I was first exposed to the diagram, I was in the zone where no change can really happen unless there is a more political will. After this workshop I realised that we are capable of addressing the issues we face through a more proactive communication and more involvement of communities.

I've always been aware of the effect that climate change has on the world but I wanted to understand and learn more. This workshop enlightened me on how important it is to communicate and engage with the community in order to make a change. It gave me the opportunity to be more proactive and knowledgeable in this topic which will help me create more eco-friendly and sustainable designs.

This workshop inspired me to go out and talk to people about construction and climate change. By involving the community, we can build where it matters most and prevent unnecessary construction. Through this workshop I was able to understand the concerns and fears I have around climate change and re-evaluate my perspective to have a more optimistic approach. I have also been inspired to protest and take an active stance in raising awareness of the climate crisis.

What I have gotten out of this workshop is that I should strive to interact with the city and citizen's more within my designs going forward as at the end of the day our designs are meant for the public. Going forward I will concentrate on implementing retrofitting and reusing infrastructure in my designs as I think it is incredibly important that this be a key element in my designs, while still being ecologically and socially conscience.

This workshop has given me the confidence to challenge myself in the up-and-coming studio work. I really want to push for, not just an environmental carbon-neutral solution, but true 'climate positive' architecture that features low-tech components. This shall be a difficult task to undertake, yet it shall also be exciting. I now believe it is essential if I am to be venturing back into practice within the next 12 months, I must pay close attention to Scott's teachings.





Climate Literacy:


A foundational knowledge of sustainable design, and an understanding of the implications of construction upon the climate crisis and vice versa. Woven holistically throughout a curriculum - cultivated in the staff delivering it as much as the students receiving it.

Agency + Entanglement:

Recognising the reality of the world outside an architecture school, and identifying ways in which we might positively affect and make change within and beyond the constraints of today's economic, political and social systems.

Radical Imagination:

Making the time to collectively imagine the future otherwise – beyond today's political inertia, to articulate it and discuss it, to illustrate and then realise it in the Design Studio.



“One of the fundamental challenges...is that we need to be able to imagine possible, feasible, delightful versions of the future before we can create them. Not utopias, but where things turned out okay.”

- Rob Hopkins in *From What Is to What If: Unleashing the Power of Imagination to Create the Future We Want* (2019)