ULI UK YL360 Roundtable Series

ULI UK Young Leaders 'YL360' is a roundtable series facilitated by a group of our Young Leaders committee members: William Polisano, Caoimhe Loftus, Theodora Beckett and Pauline Niesseron. This series of focused discussions is designed to peel back the layers on some of the industry's most important, but often overlooked, topics.

For each event, a handful of 'expert contributors' and Young Leader members come together around a table for a 90 minute deep dive into specific subjects. Summarising the discussion and outlining some of the most important points raised, a short infoburst is then developed and published to the wider ULI network.

Roundtable Three - Artificially Intelligent Retrofit

Background

The ULI UK Young Leaders were back again for a third instalment of their YL360 Roundtable Series, this time to discuss the intersection of two hot topics: AI and Retrofit. Taking place on a Thursday evening at PLP Architecture's offices in the City of London, participants debated how AI could be used to tackle the challenge of retrofit to meet our Net Zero targets and how it might impact the wider real estate industry.

The Attendees

Around the table were five industry specialists, invited to attend based on their specific knowledge of either AI or Retrofit, along with seven Young Leaders with an interest and/or background in the topic. A special thank you to all our contributors for supporting a such a broad ranging, interesting conversation:

Ian Pierce - British Land

Harriet Walker-Arnott – AI-RE

Dr. Chlump Chatkupt - PLACEMAKE.IO

Hilde Bakkeli - Autodesk Forma

Cameron McKenzie - Peabody Trust

Liam Mahoney - Tokoro Capital LLP

Anne-Dorothy Ogunmuyiwa - Cushman & Wakefield

Nick Rutherford - Quod

Aqeel Sourjah – Quadrant

Michael Polisano – PLP Architecture

Mariam Hussain - British Land

Caoimhe Loftus - Arcadis

The roundtable was chaired by UK Young Leaders Committee Member William Polisano.

The Context

Over the past year the potential of AI has captured our imagination – with applications such as Midjourney and ChatGPT demonstrating the incredible power of this technology. In Architecture and Real Estate, we are starting to see how AI can be applied to enhance the way we work from writing reports to optimising design solutions.

In parallel the industry has started to consider what we need to do to address climate change and in particular the target of achieving Net Zero by 2050. 80% of the buildings that will exist at this date have already been built, so the industry is starting to explore how to reduce the emissions associated with these buildings through retrofit.

THE MAIN DISCUSSION

What do we mean by 'AI'?

Dr. Chlump Chatkupt (PLACEMAKE.IO) shared some definitions of AI to get the discussion started.
AI is the science and engineering of intelligent machines, the intelligence that such machines exhibit, and the simulation of human intelligence by a machine. Machine learning is a subfield of AI and embodies a particular set of approaches to solve specific tasks. Machine learning is the science and engineering of training a machine to accomplish a task based on experience and data without needing to be explicitly programmed (as in 'traditional computing').

AI and machine learning have largely been focused on analysing data to identify patterns, extract features, forecast trends, etc. Familiar examples include classification, spam filters, image/voice/face recognition, NLP, and timeseries forecasting.

'Generative AI', as its name suggests, learns patterns in training data and generates novel data (e.g., text, an image, a video, even a masterplan scenario, etc.) with similar characteristics.

While various generative models have existed for a long time, most of the recent developments can be traced to the 2017 paper 'Attention Is All You Need' by Google researchers, that introduces the transformer model.

Opportunities & Challenges - Application of AI for Real Estate Professionals

Cameron McKenzie (Peabody Trust) gave us an insight into the challenge that the industry faces to upgrade existing housing stock to make it more efficient, and to meet the Government's ambition for the country to be "Net Zero" by 2050. A large proportion of our existing building stock is not energy efficient and needs to be upgraded to reduce carbon emissions. This is not an easy task with a huge variety of housing types needing to be assessed and retrofitted. Previously EPCs have been used to help assess suitability, but these aren't accurate enough to be relied upon to inform the scale of renovations required. Peabody is looking at potential solutions which incorporate AI and large-scale thermal imaging scans to help identify buildings with particularly high heat loss, and to help create a set of 'rules' for retrofitting their large and diverse housing portfolio.

Whilst Autodesk Forma had previously been known for its generative design capabilities, Hilde Bakkeli shared how the company is also using AI to help produce faster sustainability analysis for new projects. Rather than having to run the analysis each time, it can provide instant 'predictions' about the likely results, helping designers understand the impact of their decisions as they design. They also use AI to optimise the more mundane tasks such as laying out parking areas.

Dr. Chlump Chatkupt (PLACEMAKE.IO) explained how his company is using AI to aggregate, parse, and analyse vast amounts of data from public and private sources—such as MSCI, RCA, EG, Zoopla, Experian, Barbour ABI, Office for National Statistics, Valuation Office Agency, Land Registry, and more—to drive investment, underwriting, and location and asset strategy across sectors. The system can be used to forecast structural trends (such as gentrification, demographic change, price appreciation, rental growth), yielding critical insight to those whose business or returns are intrinsically linked to market trajectories. The system can be used also to qualify deals, identify market dislocations, and characterize opportunities and risks. For example, using EPC data to characterize compliance with the Minimum Energy Efficiency Standard (MEES) Regulation provides insight into investment risk: noncompliance may signal dereliction risk and an impending drop in capital values, but equally may represent a unique opportunity to add value through retrofitting or repositioning that would appeal to value-add and opportunistic investors.

Moving onto perhaps the most widely celebrated and unique of recent retrofits, Ian Pierce gave us some insight into British Land's redevelopment of 100 Liverpool Street, where they have installed thousands of sensors and to help automate heating and cooling, a decision that has so far resulted in energy savings of approx. 20% against a traditional workspace. While this does not use AI, the information gathered from these sensors and other data points could be coupled with climate data in a machine-learning environment to help optimise these savings further. The discussion moved onto green leases, and how these can be used to incentivise better behaviour, and how getting buy in from tenants is key to their success; retrofitting buildings and implementing smart energy-saving systems is not enough to meet carbon targets -tenants must be willing to play their part.

There was much debate around the challenges and risks posed by AI, with Hattie Walker-Arnott (AI-RE) pointing out that whilst we are seeing lots of individual tools being created, we need to start thinking about how to connect these solutions in order to drive greater impact. The challenges identified here reflect those of fragmentation in the industry as a whole, where poor interoperability is common and a culture of not sharing our data is normalised; the exception to this rule is products such as "EG Radius", where the big agencies share information on their transactions and in return get access to insights from the wider database. The attendees mused that perhaps this is a pattern which will become more prevalent, as the benefit of data sharing becomes clearer, particularly around topics like sustainability, and especially in a world where we are becoming increasingly reliant on data to validate our decisions. The table agreed that the UK has already fallen behind other countries when it comes to digitisation, with other global regions benefiting from access to title plans and 3D datasets which have been digitised and are readily available, whereas in the UK these are produced by private companies in response to commercial requests. Software like Forma have understood the challenges of trying to gather all this data and has opted for a marketplace model, where other companies can start to share and sell their data through the platform.

Conclusion

It was clear from the diversity of opinions, and the wide-ranging conversation which on many occasions threw up more questions than answers, that the world of Web3 remains very much in its infancy. All participants agreed that Blockchain technology has the potential to transform our industry; indeed, we may end up in a place ten years from now where many of our automated processes rely on this technology without our knowledge (in much the same way that many of us would struggle to explain how the technology behind our smart phones works). The Metaverse - as an inherent part of this brave new technological world - will equally continue to expand and evolve, and it is up to the real estate community to determine if, and how, we can use it to our advantage.

Thank you to our host and event sponsor

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