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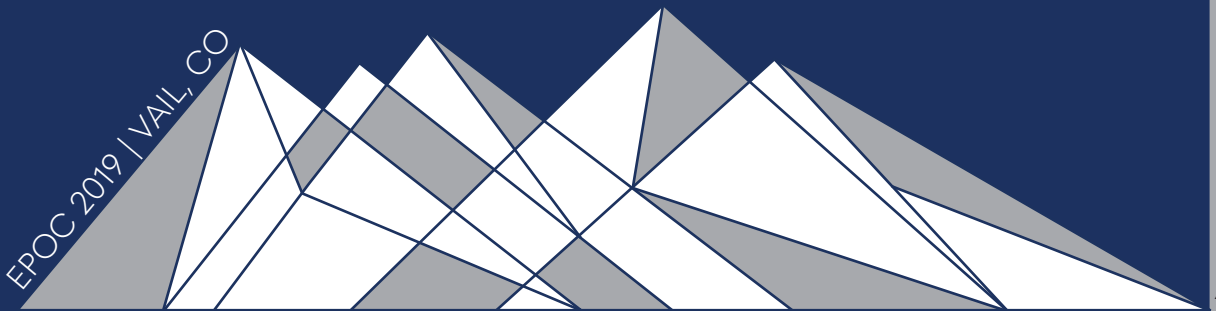
Project 21C Real Estate: Eight Grand Challenges Identified and One of Eight Explored

Andrew Edkins; University College London, UK
Yolande Barnes; University College London, UK

Proceedings Editors
Paul Chinowsky, University of Colorado Boulder and John Taylor, Georgia Tech



Project 21C Real Estate: Eight Grand Challenges Identified and One of Eight Explored

Andrew Edkins
Yolande Barnes
The Bartlett Real Estate Institute
UCL

Abstract

This paper seeks to relate, challenge and provoke the traditional role of both 'real estate' and 'project management. The paper considers both what real estate is, its multiple forms of value as well as how those managing projects play a vital role in what is proposed as real estate in the twenty-first century. The paper looks at the emerging new world of real estate value: domains, enablers and disrupters in the dominant built environment sphere of real estate, seen through the lens of foreseeable major change drivers as revealed from expert provocation and discussion. The paper's purpose is to illustrate how project management in the 21st century is projected to be inextricably entwined with the strategically-focused and front-end orientated issues that have been considered 'outwith' the domain of traditional project management. This projection will be achieved through a deliberate focus on real estate as only one of the many areas where project management is and should be applied. The paper adopts a critical realist perspective, drawing on real and present issues and developing them along lines that are underpinned by sound theoretical argument. The paper draws upon data arising from expertise situated in the UK, but it expected that the paper will be of interest to those from other nations. The paper presents an initial expert observation and subsequent discussion and review that has revealed the following eight areas that relate to real estate to be investigated and explored: 1. Digital Disruption, 2. Health and well-being, 3. Learning Environments, 4. Housing affordability, 5. Beyond Placemaking, 6. Resilience, 7. Infrastructure Interfaces, 8. Community Inclusion. Whilst it is to be emphasised that these eight topics are not the only ones that apply to real estate, the value proposition of this paper is to illustrate the potential for a party, in this case an audience anticipated to be academics and scholars interested in project management's relevance and contribution, to propose a set of cross-cutting topics (in this case eight) that have a direct relevance to the important world of real estate. The paper is written for the benefit of those in practice as well as scholars, whether this is the practice of project management or real estate.

Introduction

What we understand project management to be is now a question that is answered by many. Whether we look to leading lights in academe such as Morris (Morris, 2013), Turner (Turner, 2016), Levitt (Scott et al, 2011), Pinto (Pinto & Slevin, 1988), Winch (Winch, 2010), Soderlund (Söderlund, 2011), Shenhar (Shenhar & Dvir, 2007), professional bodies (e.g. Project Management Institute (PM), Association for Project Management (APM), International Project Management Association (IPMA) or governmental and international organisations (e.g. various governmental departments across the US, UK, Canada, Australia, World Bank, UN or EU: such as Treasury departments, defense departments, official audit agencies) the result of this large and growing corpus of wisdom and insight is that project management is a discrete and formalised approach taken for the delivery of important and specified change, typically through the creation and production of new services, products, artefacts and entities. This world of project (and program and portfolio) management is of

vital importance and the projects and programs being undertaken are ever bigger, more challenging and important to us socially, economically and environmentally.

For ease of reference to all the forms of change that can be instigated and implemented as projects and programs we have developed summary categorical descriptors when they have clear commonality. For example, a relatively recent galaxy within this project management universe is that of information technology and information systems. This only emerged after the development and deployment of the modern computer and transistor and therefore is confined to the last quarter of the twenty century and so is still under 50 years old. However, such is the spread and impact of this technology, that it has created multiple industries within this IT world and there are many types and forms of projects that are in or from this world, including software, hardware, networks and, indeed, an entire project management methodology based on the concepts of agility.

In contrast, we have a far older set of industries associated with our species fundamental need for shelter coupled with our rare gift of intellect that allows us to shape our environment. From these ancient needs and abilities we have today within our common language terms such as 'Real estate', 'built environment', 'infrastructure' and 'property'. However, these terms are somewhat loose in their use and the definition of precisely what is being focussed on is not always clear, obvious and agreed. Property and real estate are words with similar meanings and they have geo-linguistic preferences culturally, but they are not synonyms as real estate embraces the very land on which property is built as the definition further below shows.

Our infrastructure is as old as our real estate as we established pathways to travel along, built defensive structures to protect ourselves (from both nature and invaders) and, as we all know from our Roman history, established ways of channelling water, waste and heat to and from our individual dwelling and collective settlements. Today, infrastructure is a match-used term and an increasingly catch-all word that needs careful definition, since infrastructure now comes in many shapes and forms. And, finally, the phrase 'built environment' is a term that in some senses is self-explanatory, but it is used in some countries but not all. Yet there is no argument that these words describe those items and elements of the world that we know and recognise that are of vital importance to our species and that has profound impact on other species and indeed the entire planet. So what? The relevance of these points is that we have two immutable issues: first, that these areas of human activity (broadly the creation and operation of lots of 'stuff' that is built, typically fixed in or on the land and which is used for at least a single purpose) is vitally important to us all; second, that all this 'built stuff' has new sets of forces affecting it, pressures upon it and expectations of it. This is where the re-conception of value will come to play a key role.

This paper is presented as follows: having set out the introduction with its objective to orientate, contextualise and align the reader with the remit and focus of the paper, the next section will review examples of the literature drawn from credible sources within and beyond academe that is relevant to argue the position being taken. Following this there will be a brief consideration of the philosophical position taken by the paper and the method used to generate the research investigation undertaken to date. Then the findings of the

research will be presented before the paper concludes with the reflective assessment of the utility of the research undertaking and the suggested next steps.

Review of the literature

This paper is about the interplay of project management in an era of 'Grand Challenges'. These challenges are both enthralling: the emergent and exciting worlds of technological advancement, and terrifying: how we 'fix' man-made climate change and resource/habitat degradation. Many organisations have adopted phrasing similar to grand challenges as shown in Table 1, which shows the results of a simple internet search of the term 'Grand Challenge'. From this table, which has a noted UK bias, one finds a diverse range of organisations that are concerned about such global and fundamental issues and concerns. Around the midway point down the table, there is an entry from Wikipedia that, as table 1 notes, refers to the work of the Bill and Melinda Gates Foundation[1]. This further reference illustrates the widespread nature of the various organisations that are interested in pursuing this agenda. Many of the challenges featured by the organisations listed in Table 1 and beyond will have attributes that lend themselves to being considered as individual or collections of projects and programs.

If we move to consider the term project management then, at its face value, we immediately recognise that there has to be a 'project' and that to this project is applied 'management' (Meredith & Mantel Jr, 2011). In the grand challenges we can identify many such projects. The argument for the application of 'project management' has been deemed necessary for the project to be successful (Baker et al, 1997; Munns & Bjeirmi, 1996). This argument is now accepted across geographies and sectors (Kerzner, 2002). We can accept without fear of being controversial that projects have been and are being created and that project management has emerged as an approach that combines managerial skillsets with a variety of tools and techniques that together can be expected to deliver projects more successfully than any other way (Morris et al, 2012; Morris & Pinto, 2004; Turner, 2016).

A historically ancient genre of project is that within the realm of the built environment and real estate. The OED defines real estate as:

> *"Property consisting of land and the buildings on it, along with its natural resources such as crops, minerals, or water"* (OED, 2018).

The website Investopdia goes further, with its definition consisting of:

> *"Real estate is property made up of land and the buildings on it, as well as the natural resources of the land, including uncultivated flora and fauna, farmed crops and livestock, water and mineral deposits. Although media often refers to the "real estate market," from the perspective of residential living, real estate can be grouped into three broad categories based on its use: residential, commercial and industrial. Examples of residential real estate include undeveloped land, houses, condominiums and town houses; examples of commercial real estate are office buildings, warehouses and retail store buildings; and examples of industrial real estate include factories, mines and farms." (access date March, 2019)*

[1] https://www.gatesfoundation.org/

Table 1 - first page results of a search of Google (UK based) on 'Grand Challenges'

The Grand Challenges - GOV.UK https://www.gov.uk/government/publications/industrial-strategy-the-grand-challenges/industrial-strategy-the-grand-challenges	13 Dec 2018 - The Industrial Strategy sets out *Grand Challenges* to put the UK at the forefront of the industries of the future, ensuring that the UK takes ...
UCL Grand Challenges - UCL - London's Global University - London https://www.ucl.ac.uk/grand-challenges/	The *Grand Challenges* convene and cultivate cross-disciplinary collaborations that explore joined-up solutions in six areas related to matters of pressing societal ...
Grand Challenges https://grandchallenges.org/	*Grand Challenges* is a family of initiatives fostering innovation to solve key global health and ... View the *Grand Challenges* Meeting Videos, October 2018. You've visited this page 2 times. Last visit: 11/12/18
Grand Challenges | Grand Challenges | University of Exeter https://www.exeter.ac.uk/grandchallenges/	Grand Challenges gives you the opportunity to meet like-minded people and develop a wide range of transferable skills including teamwork and public speaking. You also gain a broader undestanding of *global* challenges, and have the potential to make a real world impact.
The Global Grand Challenges Summit - Royal Academy of Engineering https://www.raeng.org.uk/policy/partnerships/international.../global-grand-challenges	An Academy delegation recently attended the Global *Grand Challenges* Summit in Washington DC, which took place from 18-20 July 2017. This was the third ...
Grand Challenges Canada - Bold Ideas with Big Impact® https://www.grandchallenges.ca/	Funded by the Government of Canada and other partners, *Grand Challenges* Canada is dedicated to supporting Bold Ideas with Big Impact®.
Grand Challenges - Wikipedia https://en.wikipedia.org/wiki/Grand_Challenges	*Grand Challenges in Global Health*, research initiative launched by the Bill & Melinda Gates Foundation. Grand Challenges Canada, initiative supported by the Canadian *government* based upon the *Grand Challenges in Global Health* to develop solutions to critical *health* and *development* challenges in the developing world.
Grand Challenge | Cancer Research UK https://www.cancerresearchuk.org/funding-for-researchers/.../grand-challenge-award	*Grand Challenge* is the world's most ambitious cancer research grant: £20m for international, multidisciplinary teams to take on cancer's toughest challenges.
Grand Challenges for Engineering www.engineeringchallenges.org/	In this interview, we talk to the NAE's president Dr. C.D. Mote, Jr. about the NAE and its '*Grand Challenges* for Engineering.' This program is aimed at inspiring ...
grand-challenges - Home https://grand-challenge.org/	Every year, thousands of papers are published that describe new algorithms to be applied to medical images. But very few provide a fair and direct comparison ...

Given this breadth of coverage, it is not surprising that the current situation reveals real estate to be a highly financially valuable area, estimated in 2017 to be US$280.6 trillion (Savills, 2017). Whilst all that comprises real estate may have such a high estimated financial value and thus be intrinsically linked to economics, real estate has value impacts that span from our individual health and wellbeing, through to the future performance of our planet's ecosystem, as evidenced by the consideration of the role of real estate in the forms of grand challenge as illustrated through the examples shown in Table 1. This may appear obvious, but for those in the world of real estate, it is far from easy to demonstrate this broader conception of value when appraising individual real estate assets (Boyd, 2005).

This concept of value is slippery as the well-known proverb notes: "beauty is in the eye of the beholder" and thus it can mean whatever to whoever. However, this slipperiness is something that project managers have had to deal with as they are tasked with delivering a 'valuable' project for whomever it is that commissions them, whether this is to senior figures within the same employer or an external client through the use of a contract. The oft quoted project management mantra of delivering the project "to time, to budget and the quality" (noting that all three of these and especially the last are themselves open to discussion and debate on what they mean exactly) suggests that the value domain of projects and project management is three sided and hence the reference in project management parlance to the 'iron triangle' (Atkinson, 1999). But in order to ensure that value is delivered, tools, techniques and indeed expertise has been developed for use in project management in the form of value management (Kelly & Male, 2003), value engineering (Dell'Isola, 1966) and benefits management (Ward & Daniel, 2006).

Two examples where value is already established as essential are health & safety and reputation. In the former it was historically accepted that in the pursuit of a project, lives would be lost. If the project were a military campaign then this is, regrettably, inevitable. However, for construction and other heavy engineering projects it was avoidable (Ringen et al, 1995). Over time we, as civilised societies, have become increasingly intolerant to the loss of life in the name of projects, and now there are many laws, regulations and standards that are enforced to ensure the health and safety (H&S) of project operatives (Langford et al, 2000; Lingard & Rowlinson, 2004). Thus, the value of health and safety in project performance has risen and is now, for an increasing number of project players, immutable[2]. The second example is that of the reputation of the client which may be judged through their projects. Clearly this then links back to the first example, but it goes well beyond the H&S performance. This is especially true for governments operating in democracies where there is a free and independent press and media. Here, government projects must be seen to be conducted fairly and with appropriate levels of transparency. This can result in many areas of value being raised for consideration and inclusion, such as local job creation, minimal environmental disruption and mitigation or even compensation for those affected by the project works.

[2] See, for example, the approach taken by the French based multinational corporation Vinci with its 'Safety First': https://www.vinci-construction-projets.com/en/our-commitments/our-safety-policy/

What is becoming increasingly clear is that there are value drivers that are affecting both real estate and project management and the two are tightly coupled as it is through the application or deployment of project management that real estate is first created, then adapted and repurposed and finally demolished and removed. These divergent and emergent value drivers and value domains are, this paper proposes, areas where we need to be more aware and where we need a new mindset together with methods, tools and techniques if we are to deliver against these increasing value expectations. This paper therefore follows in the spirit and the principles of strategic and holistic thinking as presented by the corpus of work that comprises the 'Management of Projects' (MoP) as championed by Peter Morris (Morris, 2013).

To provide some coherence and focus to what is acknowledged as a wide area of consideration, a simplifying strategy for the Grand Challenges is needed to connect the world of real estate to that of project management. This is proposed from adopting the elegance of the triple bottom line approach used in modern accounting and economics (Elkington, 1998) to allow illustration of a set of three grand challenges. Whilst fully recognising the set of three proposed below is just one way of looking at the future challenges and there may be other and possibly better ways, the selection is made on the basis of the extremely wide and highly credible evidence base on which they are founded. A detailed rationale for each of these lies in many works elsewhere to the point where it is not seen as controversial to propose them with external justification and validation. The selection provides the 'food for thought' that is part of the purpose of this paper. The illustrative set of three challenges is:

- Climate Change and Global Warming (at least that contribution our species is clearly being directly associated with)
- Demographics (increasing in number, ageing in the developed west and north, urbanising in its location)
- Technological progress and accessibility (the sheer diversity and actual and potential impact}

The paper will seek to build from these three grand challenges to the eight specific challenges identified through expert provocation and interaction with those deeply familiar with real estate and the built environment and they are: 1. Digital Disruption, 2. Health and well-being, 3. Learning Environments, 4. Housing affordability, 5. Beyond Placemaking, 6. Resilience, 7. Infrastructure Interfaces, 8. Community Inclusion.

Research Methods

This paper is sympathetic to those ontological, epistemological and philosophical views that say that we each have to understand the realities that we face. This combines immutable laws (e.g. gravity, friction) with far more nuanced concerns – such as the differences of perspective that we have based on our backgrounds, intellects and beliefs. This leads to the challenge of first identifying and agreeing problems and challenges and then subsequently determining the correct approach to address whatever is the 'agreed' 'problem'. This philosophically interpretist / critical realist approach is necessary as the paper is designed to be provocative and a vehicle for discussion and debate. Thus, the specific research approach taken is to seek expert response through provocation, discussion and debate. Building off the literature that has shown there to be a variety of major challenges, the research will

start with an unusual opportunity to exploit a real estate expert's considered view and then, through engaging with further experts, sometimes singularly and sometimes in groups, to flex, develop and refine the eight areas identified as impacting on real estate (or vice versa) and to thus permit improved clarity of understanding and prioritisation of action. What follows is therefore a synthesis of arguments and examples that help summarise and illustrate the nature of the grand challenge and the project management issues that are associated with each one.

Findings

The findings of this research are presented as a set of factors that are germane to real estate and which have clear implications for the project managers involved in the many projects implicated from the changes that are to described. It is important to point out that the key message being conveyed is that the challenges identified for real estate represent two forms of project-based issue for project managers to factor into their thinking, planning and strategizing. The first type of project is the intervention in the existing real estate asset base. As real estate assets endure, it is perfectly possible to alter real estate as and when its benefits start to diminish. Simple economics will dictate whether this is commenced, when and in what guise. In many respects this is the more challenging form of project as there can be great uncertainty with what comprises the existing asset as record keeping in this area is variable and often poor, leading to much effort expended in the area of survey, investigation and testing. There can then be limitations as to what the real estate asset can be reasonably expected to cater for in the future as there will be implicit limitations 'hard-baked' into the asset's previous design and construction. The second form of project is the new real estate that has yet to be built. With a growing and changing population, more and different real estate is going to be needed – everywhere. This real estate to be built now or in the near future, will have to cope with a longer term future that, as will be illustrated in the sections that follow, is expected to be very different from what we have seen in the past.

To provide the necessary focus and clarity, the approach taken was to seek the views of a leading expert practitioner-researcher in real estate and seek from this expert, the smallest number of separable, but non-discrete topic areas that could be used to 'reconsider' and 'rethink' real estate. After due consideration and discussion with both practitioners and academics, eight headings were proposed, these are:

1. Digital Disruption,
2. Health and Well-being,
3. Learning Environments,
4. Housing Affordability,
5. Beyond Placemaking,
6. Resilience,
7. Infrastructure Interfaces.
8. Community Inclusion

The first seven of these will be outlined with the eighth, community inclusion, being explored in a little more detail. Dealing with each of the above in order, but in summary terms, the outline and justification for each is as follows:

1. Digital Disruption

This is the first 'cab-off-the-rank' simply as the impact of the variety of digital technologies in play (e.g. the existing internet), in development (e.g. 5G mobile phone connectivity

allowing the development of autonomous vehicles and the Internet of Things), and yet to be revealed (quite simply 'our unknown unknowns'). The impact of this digital disruption on real estate is widespread and substantial, ranging from the concern about the future of shops, shopping malls/centres and retail districts as more retailing moves online, through the challenge to traditional real estate agglomeration that is now possible through digital connection rather than physical proximity (e.g. UK government or the BBC seeking to move operational activities around the UK rather than to concentrate on London), to the rise of the 'crossover' elements of real estate: the coffee shops that are now touch-down workspaces for the mobile knowledge worker, the rise of companies such as We Work that provide far more flexibility in terms of tenure and where digital services are an essential part of the real estate offering. The implications for project management arising from this digital disruption is widespread, with the need for significant scope expansion to include the 'smart' agenda at city level, through to the ever increasing need to incorporate new technologies into existing buildings (e.g. the need for retrofitting fibre optic cabling into many forms of buildings), as well as the need to consider the 'future-ready' buildings that will involve new materials, semi-autonomous operation and greater interface between the external environment and that of the internal occupiers.

2. Health and Well-being

The interplay in the form of our health and wellbeing between real estate in all its forms and us, both individually and collectively, is well documented: see for example Deloiite, UKGBC, Property Week, M&G, and whilst these references point to the generalities of real estate's role and influence on our general health and wellbeing, there is also the vital role played by healthcare facilities: those specialist and dedicated forms of real estate we all know as our hospitals and specialist clinics and medical facilities, General Practitioner and dentist surgeries and the increasing number of healthcare facilities that are embedded in our retail and community areas, such as pharmacies, opticians and audiologists, as well as community halls offering a variety of services that can include yoga and mindfulness. Indeed, it is this range and diversity that ably demonstrates how our need for healthcare and wellbeing is expanding and increasing and this is mirrored in the variety of types of real estate that address these needs: everything from the highly expensive and complicated leading hospitals through to the humble village and community hall. For the project management community, this increase in the need for healthcare, coupled with the expansion of interest in the wellbeing of those who live, work and play in this real estate is driving changes to the real estate we see. From the need to remove asbestos from buildings when it is found to have been used, through the improvements to heating and ventilation to improve health, to the selection of materials to avoid toxins being released (e.g. no lead in paints, low VOC materials in carpeting), to a future of materials that absorb pollutants and contaminants and the integration of flora into structures through green roofs and living walls. This is a global and growing area.

3. Learning Environments

There are strong parallels between the comments made above about health and wellbeing and education. As individuals, societies and economies, being healthy and well and having education are to be strived for and appreciated. With both seen as important and with both seeing increases in both volume of activity and diversity of type, there is also more involvement of real estate. And just like in health and wellbeing, education is something

that runs from the very young to the very old (Schuller & Watson, 2009). From early-years education provision right through to those at the end of their working lives and into their retirement years as represented by organisations such as University of the Third Age and Probus. With more learners of all ages, abilities and needs, learning many more topics and learning in different ways and using more technology, it is hardly surprising that the learning environments we are using now and will need in the future are changing. If we look at the directions of travel from the learning environments provided in the past – think rows of desks and chairs in classrooms, rigid seating in raked and tiered lecture theatres, fixed workbenches in laboratories and workshops, we have seen the rise of more adaptable spaces used in a more flexible way. The variety of learning environment is reflected in the types of learning now seen routinely, for example each of the following types of learning have different learning environment requirements: home schooling, forest schools, work placements and internships, professional level apprenticeships and online only degree level courses. For forms of real estate that are dedicated to providing learning environments, such as schools, colleges and universities, the pressures are to cope with the variation in demand, measured both in volume (learning populations can vary considerably according to factors such as the local demographics, economic conditions and the reputation of the institution, that can hinge on factors such as the role played by the head of the learning institution). These places of learning also have to accommodate new subject areas, for example in the UK by Key Stage 2 (age range 7 to 11) school children must be able to demonstrate understanding of all the points made in following list:

Key stage 2
Pupils should be taught to:

- *design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts*
- *use sequence, selection, and repetition in programs; work with variables and various forms of input and output*
- *use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs*
- *understand computer networks, including the internet; how they can provide multiple services, such as the World Wide Web, and the opportunities they offer for communication and collaboration*
- *use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content*
- *select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information*
- *use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact*

Source: Statutory guidance: National curriculum in England: computing programmes of study, Published 11 September 2013

As can be seen from the above, the demands on the learning space will be very different to achieve the learning objectives compared with more traditional learning activities such as sitting at a desk reading or writing (or now typing). Again, and with no apology, there are resonances with the points made earlier about how those in project management need to be prepared for what may be rapidly changing requirements coming from those demanding learning environments.

4. Housing Affordability

Access to shelter that is safe and secure is a fundamental need that some take for granted and some strive to achieve. Having somewhere to call home is important, to us as individuals, in our families, to our societies and to our economy. Yet we see huge variation in the provision of homes that we can afford. From those in desperate situations of homelessness caused by war or natural disaster, through those whose poverty leads them to seek opportunities in other areas of the world, through to those stable and advanced countries where the opportunity in an area can lead to staggering growth in the cost of housing and the creation of unaffordable housing. In summary, housing is critically important and we have many problems. In the UK, we have a well-recognised 'housing crisis'. This is a regional issue with the areas of stable economic prosperity – the south east of England including London – being desperately short of housing that is considered affordable for those on incomes that are in the region of the national average. Those with high wealth are suitably catered for, but those on lower incomes struggle as the combination of economics makes supply track the easiest demand – and this is to produce high value housing, and the State's inability to build low-cost housing to cater for those on the lowest incomes as a result of not having sufficient funds, and this has become more acute since the Global Financial Crisis of 2008. It is this same crisis that resulted in many central banks buying up bank debt to keep the banks afloat and this has led to the unusual situation of ultra-low interest rates and large amounts of liquidity in the capital markets. The result has been, for those with disposable capital (note this is not many governments) the 'chase for returns' and this 'boomerangs' back to the investment in housing in areas where there is confidence in reasonably quick and reasonably strong asset appreciation. This has meant that in very popular global areas, housing is not for the primary purpose of providing homes, but is for investment purposes. What this results in is growing disparity in inequality, which can be the precursors for radical change, either through incentives to innovate and/or incentives to alter legislation and regulation as a result of political pressure. This all means that housing is an important and volatile area for the area of project management as there are those questioning how long the current situation can and will last, those demanding radical alterations, and those looking at innovation in materials, processes and even locations to build homes – see for example the start-up Skyroom that seeks to build affordable homes on the roofs of existing buildings.

5. Beyond Placemaking

The word 'placemaking' can be understood from the following quote from Aravot

> *"Sense of place, which is the desired result of placemaking, was regarded as a human need, essential for well being and feelings of safety, security and orientation, and a remedy against feelings of alienation and estrangement .*
> (Aravot, 2002)

Places were and are made from the buildings and other structures we create. From the smallest of hamlets to the largest of global mega-cities, places play an important positive or negative role as the quote above makes clear. But how to do this well is far from clear and far from easy. Urban design has sought to be the focal point of expertise and urban designers study what makes a good, thriving and appreciated 'place' and what does the opposite. Moving to 'beyond placemaking' is a recognition that placemaking is a necessary objective, but is something that isn't just made, but

needs care and attention – if for no other reason than the forces and changes that have been outlined in the previous sections. In going to the agenda of beyond placemaking to one of 'placecurating', there is the need to recognise the multiple forces that will affect these places and push, pull and drive them in different and sometimes opposing directions. Take for example the issue of transport. Here, we need to consider getting to and from a place and moving around within it. This can lead to many interventions and in the twentieth century this would have been dominated by using road-based vehicles. This then introduces the role of the road (here this word is selected to prioritise the car use) compared with that of the street (which is used to focus on the role of individual). This can be illustrated best through reference to specific places such as Los Angeles and other 'car dominated' metropolitan areas, verses Rome or Florence, where streets are for the flow of people. Where we have lots of people and lots of cars we are increasingly finding conflict, whether this be on the grounds of safety, environmental consequences or simply reduction in overall appeal. We can identify places that work better than others, but the nuances and parameters that first make and then keep a place that is working well in terms of the Aravot quote requires much work from a range of expert groups – including those project managers for whom the challenge will be to make the interventions necessary to make and keep places working well, thriving and appreciated.

6. Resilience

As noted in the previous section on beyond placemaking, there is a need for constant monitoring and updating on the places that real estate creates. This is a form of resilience and it is extremely important in the twenty-first century as there are predicted to be profound changes that will influence and affect real estate. To understand what resilience is in this context, consider when resilience fails. This can be seen in places such as the 'rust belt in the US, the shipyards of the north-east of the UK, the abandoned residential developments on the coast of Spain, and in many other areas of the world where the economics in play took out the primary function of the place, whether this be mining, steel production, ship building or house-buying. These economic forces will continue, with manufacturing or service provision moving globally, technology replacing labour, or simply tastes changing. But the twenty-first century will have some other profound forces affecting real estate. Most notably is going to be climate change. This has the possibility to fundamentally alter the way that we understand real estate, as the location of real estate is, in the vast majority of cases, immovable. If your real estate is located in low-lying areas, such as Mozambique or Bangladesh, then inundation created by extreme weather events will make what may have been prime real estate now useless. This has been dramatically and tragically seen recently with the cyclone Idai that has killed, displaced and affected so many in Mozambique, Malawi and Zimbabwe. Whether it is extreme weather events, or changing external conditions, real estate will have to adapt. But it more than simply considering the external operating environment that real estate will have to operate within. The built environment, comprising the creation and operation of artefacts such as buildings and infrastructure systems is a major cause of greenhouse gases that are now almost certainly linked to the dramatic climate change we are bearing witness to. For example, the UK government's Department for the Environment, Food, Rural Affairs referenced research published in 2010 (The Royal Academy of Engineering, 2010) that showed that 42% of the

UK's carbon emissions arose from buildings, whereas a joint paper from CarbonAction2050 and the Chartered Institute of Building reported different research that showed that 47% of CO_2 were from the creation and operation of buildings (CIOB & CarbonAction 2050, undated). Whilst dealing with climate change is a truly global and substantial challenge, it has to be dealt with along with other concurrent drivers of change for real estate. One of the other drivers of change is demographics: how many of 'us' there will be, where we be and our age and range of needs. The advancements in medicine, nutrition and infrastructural engineering in the form of clean water and sanitation has allowed for a growing population that in some parts of the world is young (e.g. many countries in Africa) whereas in others (western Europe and parts of Asia such as Japan) are growing old. To illustrate this point consider that in the month of March, the BBC celebrated the two men who live in separate parts of the UK, but who are both 111 (BBC, 2019). Dealing with this changing demography is going to place many pressures on real estate, but in its form and function. Project managers looking to real estate for their clients should therefore consider that the occupiers of the buildings they will be both creating or adapting will have ever increasing ranges of requirements.

7. Infrastructure Interfaces

Real estate has always been inextricably linked to infrastructure. Indeed the modern urban world we have created makes the two fundamentally interwoven. There are examples where real estate was only saved by infrastructure (the case of Canary Wharf in London that only took off as an area when the Jubilee Line (part of the London public transport 'underground' system) was extended. Conversely, China places its infrastructure well ahead of the anticipated real estate that is planned to follow, sometimes many years ahead. Whether put in ahead or as a result, real estate and infrastructure have very many links and interfaces. This may lead to the 'so what?' question, and the answer is to consider the players and objectives involved in real estate and infrastructure, as they are not synonymous and often aren't aligned. If we take the nation level, infrastructure here is the domain of the public sector. Even if it doesn't always provide it directly, it will have the most powerful voice at the decision-making table. At the city level there will be those that increasingly recognise that optimal city functioning and performance is provided when the city functions as a total system, the real estate and infrastructure working harmoniously with the result of smooth flows of people, freight, data, energy and waste. Such optimality is not easy when there is fragmentation of player, dramatic change in the nature of the challenges to be faced, whether these be the economics and finance, the technology, the needs for stakeholder involvement or the interest of the politicians. For the project managers involved in this area, the nature of the projects and the forces acting upon them will lead to both great richness in the variety of challenge – and a great challenge resulting that has much riding on the outcome.

8. Community Inclusion

This last heading goes into slightly more depth than the preceding seven points as it presents three findings that are the result of a substantial 'forum' discussion involving a selection of some 30 expert and deeply interested players, ranging from community representatives, project managers, developers, charities and academics. The topic of community inclusion reflects the historical association of real estate ownership with wealth and power. Even where there are open and transparent democracies now, such as the UK,

land and real estate ownership is traced back to far earlier times when power was vested in those with the ability to command and take claim. This is rooted in ancestry, monarchy, and organised religion. The fact that land could be claimed and title 'owned' meant that land – and the properties located on that land – could be both held and bequeathed. Since land is productive, tithes and similar taxes could be levied on those with this clear wealth, and thus the state was able to start both major revenue generation and, when the only asset left to pay the tax was the land and property, the state was a land owner. In the UK we see major land owners as being the monarchy and those associated with long term close associations (through the Queen: Crown Estate, Prince Charles: The Duchy of Cornwall, and a variety of ancestral and hereditary families such as the Dukes of Marlborough; Bedford, Westminster), the State (through a variety of departments and agencies such as the Ministry of Defence, the NHS, Network Rail, the national parks) and the Church of England (through ownership of both many church buildings, but also much other land that it has acquired as long term investments). Through this both concentrated and historically established pattern of land and real estate ownership there is concentration of power of many types: politically, economically, environmentally, culturally, socially. This can play out in ways that can cause inequality, hardship and frustration, such as with the oft quoted 'housing crisis' that has plagued the UK for some time now. This crisis, which is geographically variable, is driven by the imbalance between supply and demand, especially in regional hotspots such as the south east of England. In such locations, communities are affected by the lack of appropriate (often considered as affordable) housing. Despite communities seeking such real estate provision, they are relatively powerless, with land ownership not vested in these communities, but with others who either have no ability to create such housing (public sector) or incentive to do so (private sector). The chronic nature of this problem – and it is not just a UK problem by any means, has spurred a variety of alternative ideas and initiatives, including Community Land Trusts (CLTs), self-build cooperatives, and the rise of relocatable homes made from reusing shipping containers. These may seem somewhat niche and irrelevant, but they demonstrate how, when the need gets great enough, the 'people on the ground' will start to take action. This might be positive or, as has been seen over recent weeks in France with the "gilets jaunes" (yellow vest), through demonstration and civil disobedience.

The recognition of the value of 'community' is growing in all areas apart from those who very deliberately seek isolation. From the sense of collective security that occurs when there are initiatives such as Neighbourhood Watch, through to the recognition of the cohesive importance of village shops/pubs/churches as places of congregation, social interaction, shared identity and service access, through to the recognition of the city as not monolithic, but polycentric. In London, an unquestionably polycentric city, in June 2017 there was a calamitous and desperate tragedy when a residential tower block – Grenfell Tower – caught alight and the building turned into an inferno. Multiple lives were lost and those who suffered: whether this was in dying, being physically injured, mentally traumatised and physically relocated, these were not the rich and powerful. These were people who largely relies on the State to assist them, whether as being low-paid, benefit recipients, the retired or young families. These individuals and families looked to Grenfell Tower as their home, but on a night in June – and in front of the TV cameras – this tower turned into a flaming disaster, one that has deeply affected the entire UK. This is important as it revealed how real estate decisions had not involved the community, indeed this was real estate that was

done ‘at’ the occupiers, not ‘for’ and ‘with’ this community. Why? The answer may be found in the power allocation, the individual occupiers were relatively powerless compared with the owners (public sector) and management organisation (a company formed by the Local Authority (Kensington and Chelsea) that was created to run all the relevant Local Authority’s residential stock). The results of the fire at Grenfell Tower have been and continue to be fundamentally important at a societal and institutional level, with the potential for new laws, forms of regulation – and even new statutory bodies to oversee these potential new laws and regulations. There are also likely to be fundamental changes in policy and procedure, and all of these changes are separate for the possible court proceedings that may take place in both criminal law as well as civil. Of profound importance will be the recognition that voice of the community concerned will not be ignored, overlooked or dismissed when it comes to the places and spaces that these communities call their home. It is inconceivable that the voice of the communities will go unrecognised and unheard.

At an expert workshop held to explore this topic, the authors engaged with a variety of individuals who had direct involvement in this area. The following key points were made:

1. That the presumption of inclusion in the development of real estate is sometimes (possibly often) a mere ‘tick-box’ exercise and the ‘community’ is not included or indeed meaningfully engaged. The evidence of this is the widespread experience of designs being presented to communities for comment. This shows that the design was not influenced by the affected community, but rather presented to it.
2. It is a fallacy to assume ‘a’ or ‘the’ community. Real estate is location based, so the presumption is that the existing residents or occupiers will be ‘the community’, but this group of individuals and organisations in the vicinity of the real estate proposal may have little in common – and thus we should be thinking of communities in the plural, many of which may not identify as a community. This can manifest itself when a person ‘speaks for’ the community, but there are questions of whether this single voice is actually representative of all those – especially those who, for whatever reason, have not made their voices heard or opinions public.
3. The process for considering real estate proposals, in the UK case this being the ‘planning process’ is one driven by strict protocols and rules. It can be the case that where opportunities to undertake transformative real estate, e.g. in the case of major regeneration, the planning process and those enacting it can find themselves unable to cope with such radical innovation and drive a more traditionally acceptable solution – potentially thwarting visionary opportunities for betterment in pursuit of the safe and compliant ‘acceptable’ proposal.

The implications for project managers is that the process of managing the project will not only involve more technical issues, but it will also, fundamentally, require far better communications that seek to explain and demystify, assure and reassure, and model and answer the range of concerns that various stakeholders will have of real estate projects. Whilst this makes a project manager’s challenge greater, the rapid development and deployment of improved technology, especially IT that enables a richer user experience, will make such communication easier.

Conclusions

The paper's contribution is to first demonstrate that in the arena of real estate projects, much is changing. Project managers interested and involved in this sphere of activity are presented with the arguments, illustrations and evidence of how twenty-first century real estate is likely to be different – possibly dramatically different – from what has been the practice of the twentieth century. The set of eight topics is not random, but reflects the refined views a leading real estate industry expert mediated through a set of didactic and small group discussions. The last of the eight topics also reflects the summarised 'key additional contributions' made from an expert forum workshop discussion. The value-add conclusion is that real estate is and can be expected to change as a result of a wide variety of driving forces – and project management should make itself aware of these if it is to assist.

The second conclusion is to demonstrate that by the application of some intellectual and communication effort, project management can be directly drawn into the important discussions about the various Grand Challenges that exist. It is also clear that academics can seek to play a key role in bringing together the various stakeholder groups that will each have a contribution and could hold part of the key to unlocking what appear to be impenetrable problems. It is the paper's recommendation that academics consider their potential role as intellectual 'beacon lighters', acting as the convenor, host and hub for true inter and multidisciplinary thought leadership to tackle the increasingly pressing Grand Challenges that we all face in different areas of our lives and on our planet. In this specific example of real estate, the paper argues that there is need for this interdisciplinary approach that links and then extends the triad of public sector, private sector and academe to become the pentangle of potential by seeking to draw in the communities affected by real estate and the media who will be watching and commenting.

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