

Extending the Horizontal Journey to the Sky

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Abstract. The optimum recipe for successful master planning has long been a subject of discussion and experimentation. While experts diverge at various tangents on this complex and organic subject matter, as is evident from the collection of essays published in "Rethinking Master planning: Creating Quality Places" last year, a handful of ingredients are common to many.

In master planning, design teams create "active frontages" that focus on encouraging transportation by foot, by analysing the content of daily errands (e.g. medical appointments, grocery stores, fitness centres), and purposefully ensuring these are within comfortable walking distance of crucial amenities like parks and transportation nodes. The most successful master plans of recent times offer mixed-used, fine-grain, human-scale, high-density diversity along a planned or alluring human footfall. The focus is on the effect that vertical mixed-use, fine-grain activity nodes and paths could have on tall buildings, particularly on vertical transportation, security and fire safety. What are the challenges this new brief presents designers with and what are the new opportunities for landlords, occupants and visitors?

Does the added value outweigh the constraints? From this new brief, there is likely to be flexibility extended from the typical floor-by-floor tenant split and core arrangements to the vertical plane: soft spots, dedicated lifts, open staircases and adaptable building services for undefined spatial uses. This paper explores how these challenges can be accommodated by looking at how vertical communities can enhance our experience of buildings, our health, well-being, and make a positive contribution to the urban habitat.

1 INTRODUCTION

This paper is based on ideas first presented at a conference addressing Polycentric Cities in a workshop on Skyscrapers [1].

The presentation arose from a discussion with Hilson Moran and was developed specifically for The Council on Tall Buildings and Urban Habitat (CTBUH) conference.

An illustration proposed for Polycentric cities was that of an egg - Fig. 1.

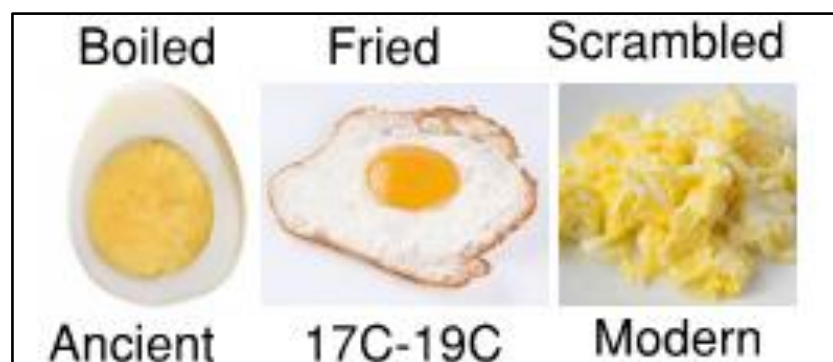


Figure 1: Egg Illustration

Ancient Cities have a clear centre and boundary; walled cities, a citadel. As time passed on, through the 17th to 19th century, while defined centres remained, the extremities became more free form. Nowadays, modern cities are more mixed with less definition, more like a scrambled egg.

Polycentric is an English adjective which means ‘having more than one centre’. While the CTBUH conference itself was considering polycentric cities and examples of them, this paper considers the importance of polycentric buildings.

With increasing urbanisation, cities need to consider how they develop. Master planners seek to gauge certain criteria in the proximity of amenities with respect to transport nodes. They look to plan active frontages to encourage people to follow particular routes, and they consider how far people will walk before they look to take a bus, train or car.

Singapore is considered to be a distinguished example of a place where planning, through density of occupation and lack of land, has and continues to develop infrastructure which encourages people to use public transport. Specifically, they have been concentrating on the last mile or last 20 minutes of the commute.

The CTBUH not only looks at tall buildings but also the urban habitat. We often hear about vertical communities, however, how often do we see them? This paper’s focus is to take a step back from how tall buildings have been traditionally designed, and to look into applying rules from horizontal master plans in the vertical setting. We cannot build communities, but we can provide space where they can thrive.

Take London as an example. It is an old city that has expanded beyond the square mile and, while fairly unique with its 32 boroughs - each with their own planning jurisdiction and various amenities, there are now distinct business districts across Greater London.

Years ago, London would have been a hard-boiled egg, developed through the fried egg stage. Now, however, with its distinct business centres scattered all over, London has been and is developing into the scrambled egg stage.

The City, Canary Wharf, and possibly Kings Cross, (soon to be joined by Battersea or Vauxhall), are all distinct business centres. There has also been a significant development, with the exception of the City of London, in relation to residential accommodation, offering people the opportunity to work, rest and play without extensive travel.

Typically, people who work in the City of London commute via public transport to work.

2 THE HORIZONTAL STORY

The example of a walk from a transportation hub, Cannon Street, to a fairly new, mixed use, London building, 20 Fenchurch Street, The Walkie Talkie.

Even within a short walk from a transportation hub we see various amenities. We have choices, not only in terms of the amenity but if in a major city like London, you get the choice of transport hub and then a choice of amenities en-route to your destination.

While in central London to some extent the location of these amenities is dictated by hundreds of years of history, we can still see a pattern to how frequently these appear. A series of active frontages, vibrant places between your starting point and your destination, interspersed heritage and opportunities to pass and interact with others. In fact, the location of these amenities, their frequency and the repetition of them, form part of a master planner's tool kit. They can be seen as a series of concentric circles.

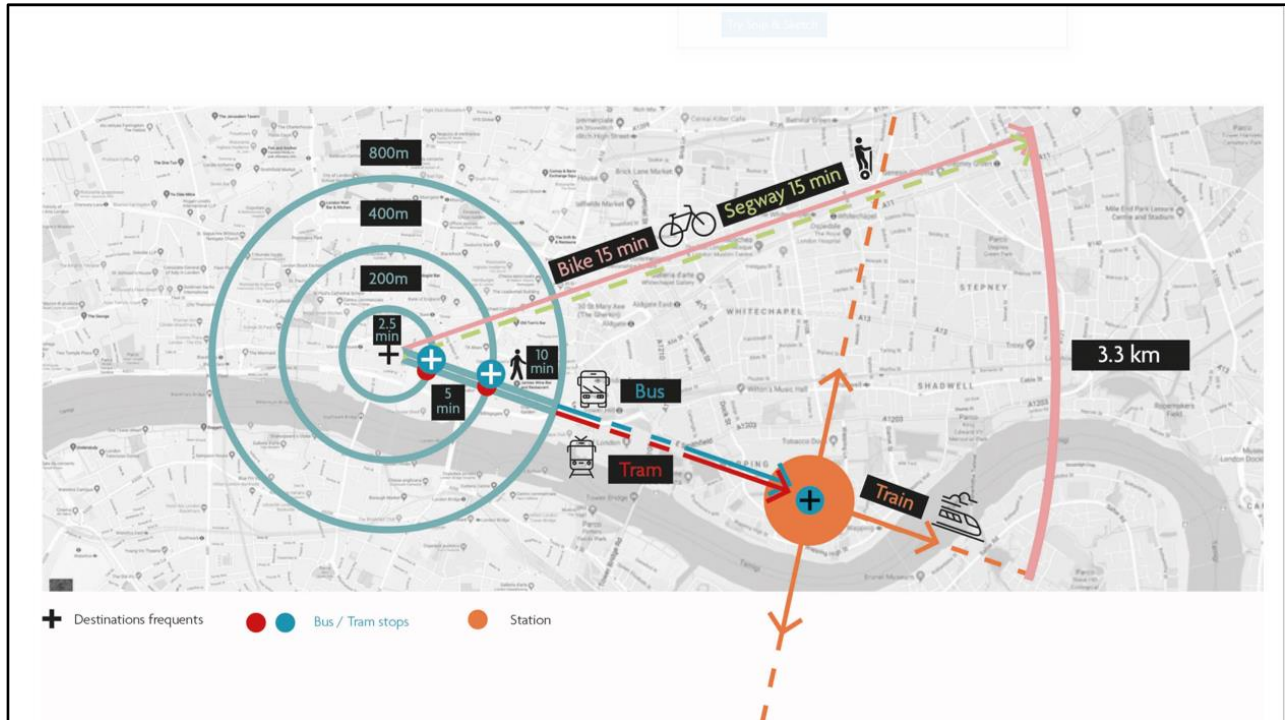


Figure 2: Map illustrating travel methods, distances and times in London, from Cannon Street to Fenchurch Street

- People are happy to walk for 10 minutes by which time they will have ideally arrived at their destination or indeed a transport hub to continue their onward journey.
- A series of amenities or active frontages that are often the key to the success of a master plan.
- Providing vibrant spaces as part of our journeys.
- The amenities are likely to be in greater density closer to the transport nodes.
- Within the first 5 minutes you are likely to experience mixtures of uses with offices beyond that.
- The other outcome of well-located amenities at the right density and mixture is the ability to encourage or give people the reason to use certain routes.

All providing ways for people to cross each other.

3 THE VERTICAL STORY

When arriving at our destination, a new set of rules is often applied. Acknowledging that this might vary with location and culture, it is important to look at the performance of the building. From a vertical transportation perspective, observations into handling capacities, average waiting times, lift speeds and the whole robustness of lift performance is necessary.

Do we need an intermediate plant level? Where will the reception desk be, what will the toilets look like and where will the sign go at the top of the building?

Our buildings typically take on a similar form.

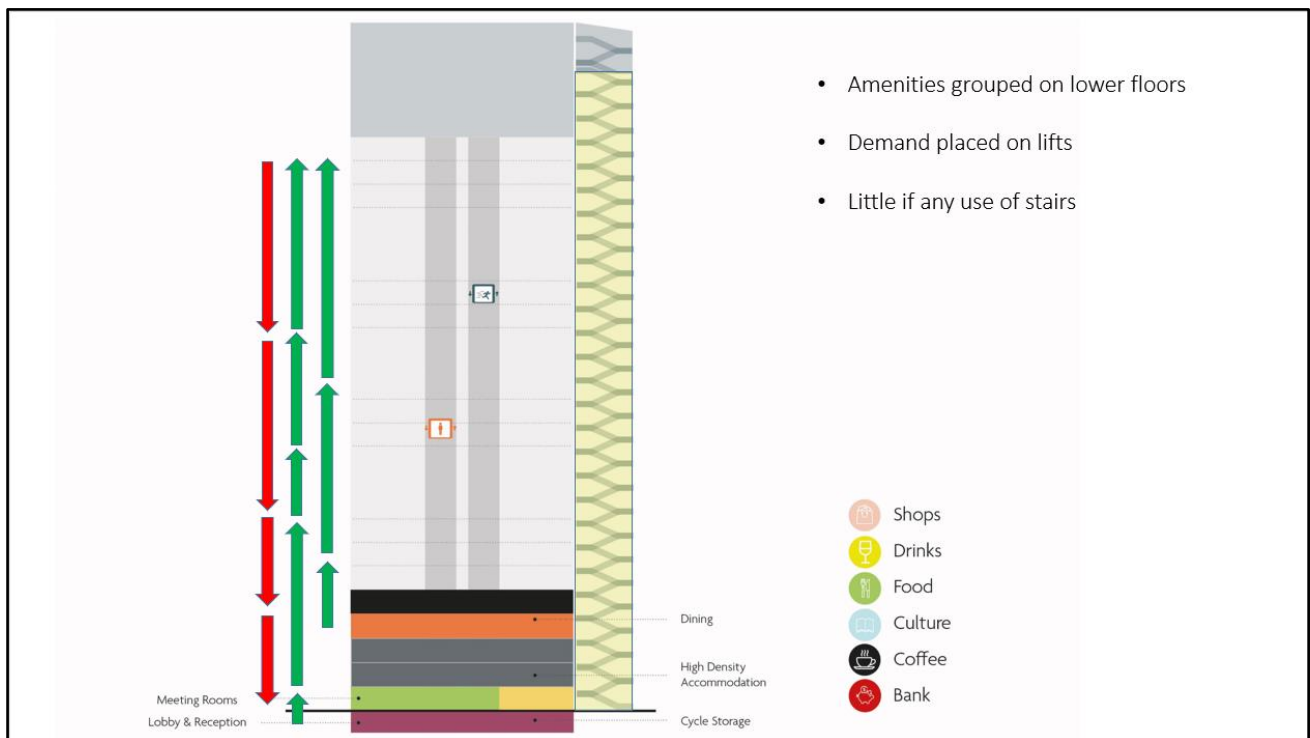


Figure 3: Typical Floor Structure and Lift Diagram

Providing amenities in or at the foot of our buildings, however tall, is not new. It is good in a commercial sense, providing a workforce with all they need so they stay on site longer.

For a typical building we might see:

- Amenities at street level and some internal dining provision with large companies
- Meeting rooms, especially those for client meetings, often centrally located
- Generally, little if any readily accessible use of the stairs

The result of this is a demand on the various systems within the building not least the lifts. People are drawn from higher up the building to access the amenities resulting in additional lift stops and the result being a reduction in service. One trend in London, and in the case of 20 Fenchurch Street, is that the planning consent was only permitted if publicly accessible space was provided within the building - in this instance the Sky Garden. The Sky Garden needs to be booked in advance but is free for visitors to access, (or you can book a table at one of the two restaurants). This approach provided more public realm than was previously available on the site in fact, as the building floor plates increase in size, the sky garden provides more public realm at the top than it could at the bottom.

The lifting provides extremely high levels of service with Double Deck (DD) lifts serving Low-Rise and High-Rise zones. There is a single transfer floor. The DD deck combined with destination control enables this inter-floor provision to be on one level.

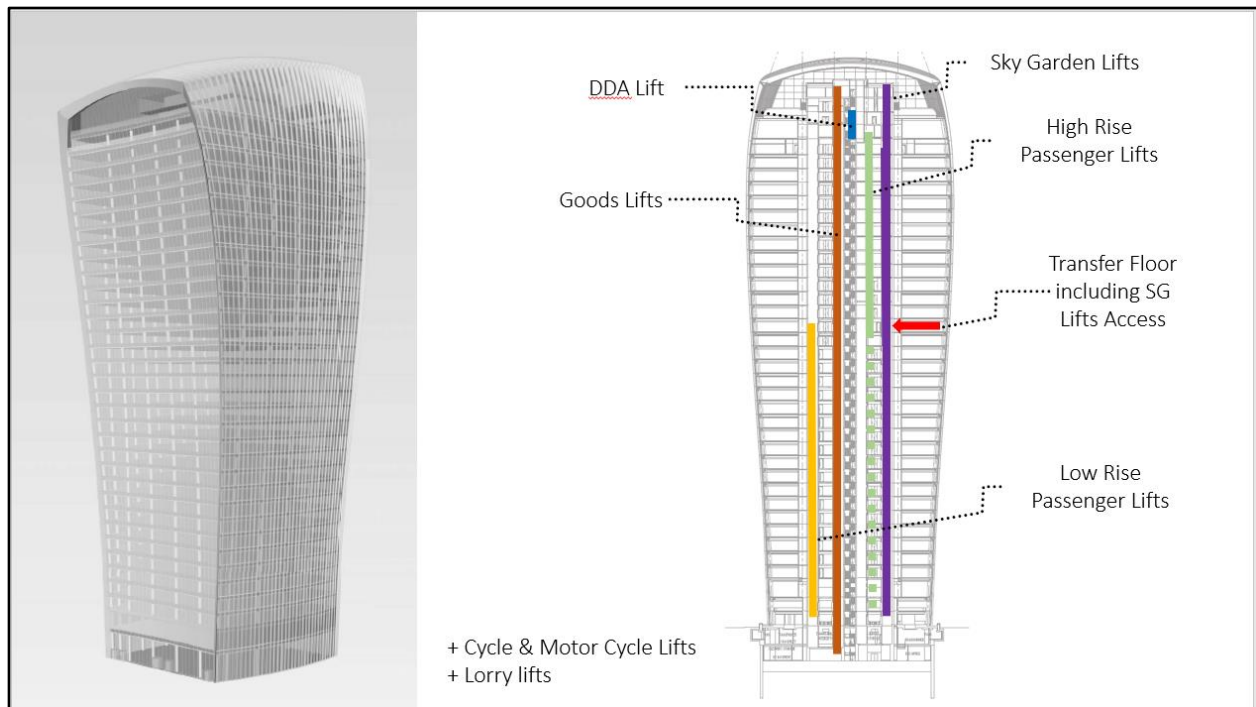


Figure 4: The Walkie Talkie and its Lift Structure

There are two entrances which are provided for the potential flexibility for one significant tenant to have a dedicated entrance. The reception desks and security line are fairly obvious and prominent. The entrances for public and office occupants are distinctly separate or indeed exclusive. The public Sky Garden is served by two dedicated lifts from the public entrance.

Access to the Sky Garden is free and time slots can be booked for the week ahead on a Monday morning. You have to be quick as they go very quickly. You can also walk up on the day to see if there is capacity or you can access the bar if your smart casual attire meets requirements. The location of the transfer floor at level 20 and an entrance in the sky garden lifts permits building residents to gain access to the Sky Garden without exiting and re-entering the building.

20 Fenchurch Street is a hugely successful building, it was fully let before construction was complete and with the sky garden and pocket park there are amenities available for both residents and public alike.

We have mentioned how master planners have a series of rules, expectations or requirements for including within their plans the required amenities at appropriate frequencies. For example, how various user groups might use and access these facilities and by what means. We then arrive at our well designed, well equipped buildings and adopt a completely different approach.

Lobbies can be quite sterile places. I mentioned one of the key factors in master planning is the provision of active frontages ensuring that routes are attractive and vibrant.

Our example of The Walkie Talkie once it had opened had the addition of a coffee shop within the lobby and the public entrance to the Sky Garden has been completely remodelled.

Buildings are more often providing landlord managed amenities; meeting rooms terraces and the like - providing facilities that some might not have provided and others to have more efficient use of. Perhaps the traditional 'it's part of the fit-out' is no longer applicable. The We-Work approach has identified a demand for flexibility on numerous levels.

This approach doesn't need to be on a grand scale. Within the AECOM office at Aldgate, an internal set of stairs provides interconnectivity between the 8th floor and the 10th floor. Providing access from each level to meeting rooms, kitchen areas and the catering outlet. This providing a vibrant route around the business providing spaces for collaboration, more formal meetings and food.

At the Bloomberg building in London all residents and guests alike arrive at the building and make their way to the 6th floor reception and double height amenity space

What if we apply some of the rules we apply to the horizontal to the vertical? What do the concentric rings of the horizontal master planning diagram look like vertically? Rather than providing amenities in single location we consider distributing them at intervals that become accessible for people across a section of floors.

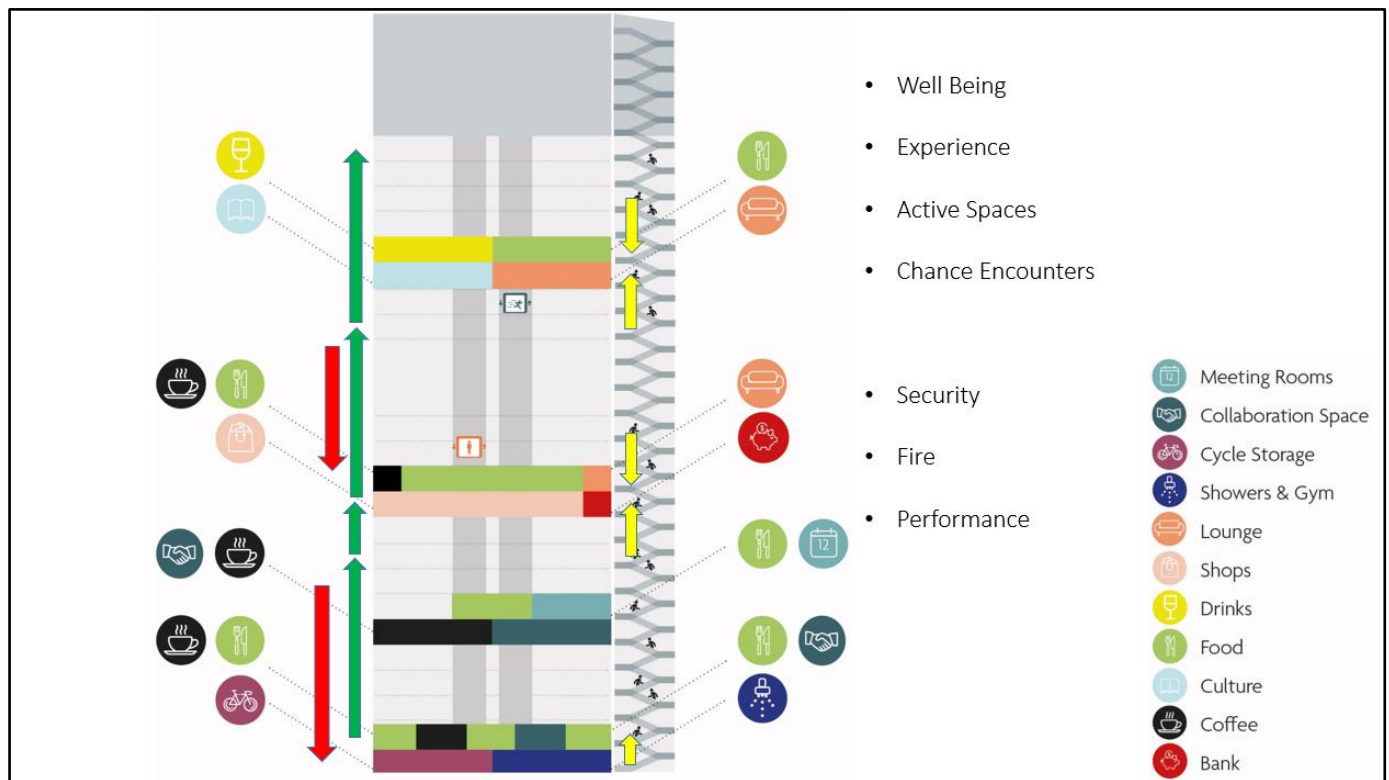


Figure 5: A Polycentric Building

As well as the circulation, within what inevitably will become communities, the routes for that circulation will become places where crossovers happen and the amenity spaces themselves become locations that give the opportunity for chance encounters. This leads to spaces and their routes becoming active, with the amenities becoming nodes.

There are obviously some areas that would need to be addressed. Security is one that is close to most people hearts especially when it comes to the work environment. Security need not be intrusive. The risks will obviously need to be assessed and appropriate provisions made. The use of existing technologies and adopting some of the more readily available technologies such a facial

recognition - attend any event such as the CTBUH, you only need to visit any of the lift companies stands to see where they are integrating emerging technologies vertically.

Fire will also be an area that we will need to consider early in design of such buildings, adequate refuge, and evacuation strategies that address the building layout and compartmentation that considers some of the potential risks that are introduced by the use of some of the spaces. Nothing, however, that cannot be dealt with efficiently if considered at the early stages of design.

Rather than provide facilities for the building, why not give the community opportunities to serve the building. One example being bringing street food into the building.

Areas that have often been termed ‘end of journey’ facilities really need to be considered as part of the journey (e.g. access to and use of cycle storage and showers to be considered).

So where does our journey start? Let’s look out for the Citymapper app that does not just look to find the best route but one that enables use of various facilities on a journey, such as picking up a coffee on the way to work.

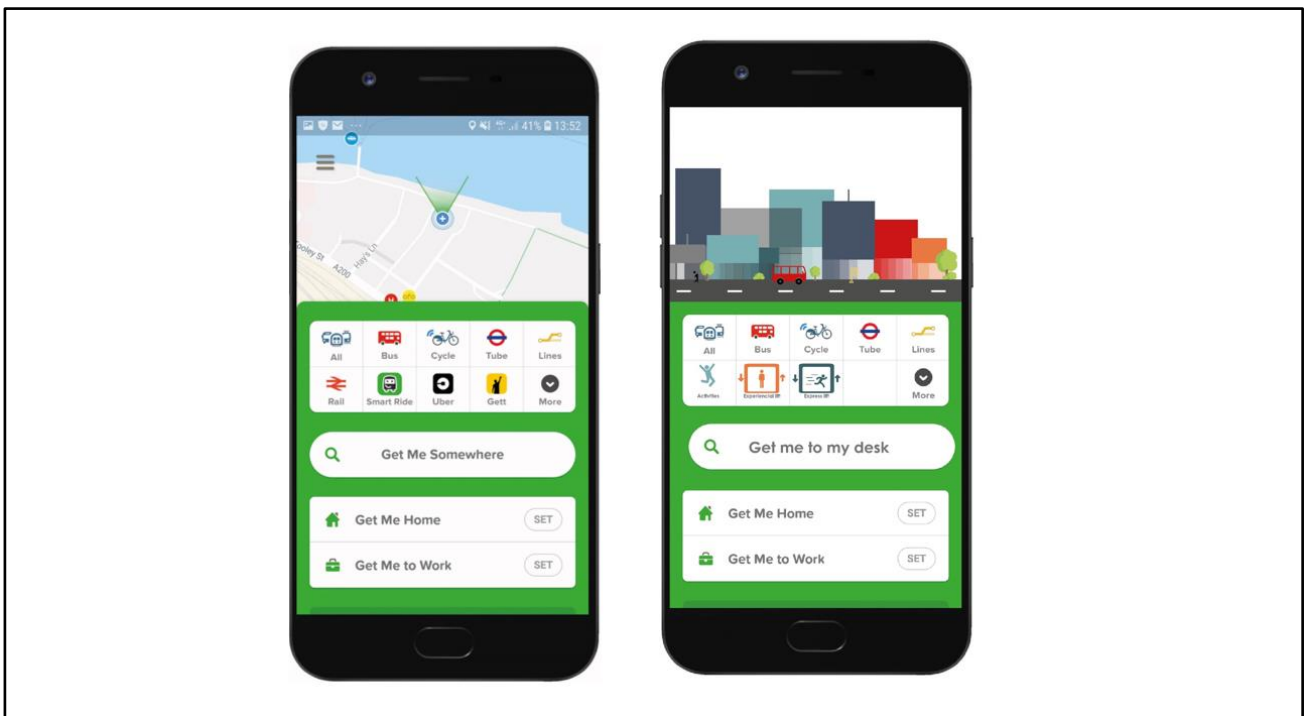


Figure 6: The Citymapper App

So, I am not saying that we should throw away all of the good things we do and have developed over the years, however, I am suggesting that we should not get stuck behind all of the figures - about arrival rates, average awaiting times and time to destination – but instead concentrate on the experience of our buildings and the surrounding habitat. Providing choices and activating our buildings to enhance wellbeing and occupant satisfaction.

Let us locate amenities that help provide a coherent and enjoyable arrival experience and beyond, for the duration of our time and across all activities throughout the day.

We will still need to understand the performance of our lifts, we need to know when they will be too busy - but demanding that a lift arrives within 25 seconds having spent the last 45 minutes commuting to work is to be questioned.

It's not new. Shell provided a video in the 1960's which introduces:

We just need to apply it in a way that suits the location and culture and also the technologies as they develop and present even greater opportunities to us as designers. Buildings in the not too distant future will have a number of challenges to address.

A Hackathon, sponsored by the CTBUH UK Chapter, that took place just before the conference last year, highlighted a series of common themes from competing groups around 'vertical villages', human-centred design, smart homes, community empowerment, demonstrating a mental shift in the way designers are conceptualising city habitats and opportunities to re-energise high-rise homes. While we have been looking at mixed use commercial buildings, these themes and our challenges as designers are transferable across sectors.

While we can already use our mobile phone to do most things, including managing our lift journeys, we will be looking at how our autonomous vehicles or drones can take us to work, having picked up our double skinny dry decaf on the way to a planned meeting with a colleague - on the way to the office, still with the ability for a chance encounter, that takes our day onto a new level.

Bringing local amenities into the building can enhance the urban habitat, it can make our great buildings accessible as well as great places that people want to be. Places that provide platforms for communities to develop.

Let us challenge ourselves, not only to ease the ever-increasing demand on the lift systems but seek to look at how we as designers provide the places that enable communities to develop.

REFERENCES

[1] Peter Murray – New London architecture at the CTBUH conference 2018.

BIOGRAPHICAL DETAILS

Having served a fully indentured apprenticeship Alan joined the UK engineering department of Kone Lifts.

Having worked in various positing within Kone, Alan made a move to consultancy in 1998.

Alan has experience of working on projects in the UK, Europe and the Middle East as part of international design teams and for world leading clients.

An active member of the CTBUH Alan presented as part of the Sky Spaces workshop at the 2018 CTBUH conference in Dubai.

Alan is an experienced engineering consultant with approaching 30 years of experience within the lift industry.