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The Future of Workplace in Vertical Cities: Hanging Gardens, Roof Terraces and Vertical Plazas

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Abstract

As the workplace evolves in our vertical cities, the need for "think spaces" and the public realm to meet, create and innovate will become integral to tall buildings. These people places are designed to address the social challenges and enhance the co-working environments which are emerging in the dense urban context of our future cities. The design of sky terraces and the "spaces between" offer a greener, more humane and smarter work environment for the future. The public realm should no longer be held down, fixed to the ground plane, but rather become part and parcel of the upper levels of our workplace centers. These collective spaces in our workplace centers must provide a three dimensional matrix of connected and identifiable platforms to leverage the open and progressive future way of working. This will enable social networking and idea sharing, and create multi-dimensional, multi-level business incubators for innovation and creativity. The BCO (British Council of Offices) has performed a landmark Wellness Matters Report which provides an exemplary roadmap for the future of the workplace. Our future vertical cities must also provide for serendipity in the workplace; a key attribute to drive the information exchange and collaboration that are proven to provide positive and progressive business outcomes. In addition to demonstrating examples of existing built work and the concept of the integrated vertical public realm, the presentation also will consider and define wellness in the workplace as a critical factor in our design strategies and our future workplace environments Hanging Gardens, Roof Terraces and the Vertical Plazas; designed for interchange, wellness, animation and collaboration.

Keywords: Vertical Public Realm, Workplace Environments, Wellness, Collaboration

1. The Future of Workplace in Vertical Cities

1.1. Hanging Gardens, Roof Terraces and the Vertical Plazas

It has been understood, for the past several decades, that the laneways, squares, gardens and public spaces provide a critical platform for interchange, communications and connections that do not exist in the workplaces created 50 years ago, and well before then.

These meeting places encourage serendipity, whispers and rumours as well as more structured, rigorous scheduled and organised gatherings.

We are beginning to understand, through the detailed work of the British Council of Offices and other evidence based studies, that those spaces not only enhance our enterprise and productivity but also contribute significantly to our wellbeing. Our wellness is now becoming a critical

Figure 1. One New Change Roof Terrace, London.

Figure 2. View of St. Paul's, London.

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Figure 3. Paley Plaza, New York.

element in the design of our workplaces.

As our cities and urban conurbations continue to embrace the positive benefits of infrastructure and density driven design and the height of future workplaces increases, it will become necessary to create those places within our new vertical environments.

These workplace gathering points must provide this space for interchange above the ground plane; not only for attractive restaurant or touristic destinations, but rather hanging gardens, roof terraces and vertical plazas integrated into our workplace office environments.

Over the past few years, there has been a significant migration of the world's populations to urban contexts, which has resulted in these cities' growth and densification. According to a study carried out by the United Nations, 54 percent of the global population live in cities and this is presumed to increase to 66 percent by 2050 or an equivalent of 2.5 billion more urban dwellers, which could see the growth of even more new cities.

The Bay Area of California has seen tech companies move from campus style workspaces in Palo Alto's Silicon Valley to the tighter urban environs of downtown San Francisco. Yet, this open plan typology is at odds with the city's smaller footprints. The demands for more collaborative and inclusive spaces but dense yield means that it is time for our vertical environments to answer this future workplace requirement.

As the workplace continues to evolve in our vertical cities, the need for these "think spaces" in the public realm to meet, create and innovate will become integral to tall buildings. These people places are designed to address the social challenges and enhance the co-working environments which are emerging in the dense urban context of our future cities.

The design of sky terraces and the "spaces between" offer a greener, more humane and smarter work environment for the future. The public realm should no longer be held down, fixed to the ground plane, but rather become part and parcel of the upper levels of our workplace centres.

1.2. Evidence Based Data

As the UK's leading forum for the discussion and debate of issues affecting the workplace sector, the BCO (British Council of Offices) has performed a landmark ***Wellness Matters*** Report which provides an exemplary roadmap for the future of the workplace.

Drawing upon diverse sources of guidance, including Harvard University's '9 Foundations of a Healthy Building'2, the NHS's 'Creating Healthy Work Places' campaign and resources from the UK Health & Safety Executive and Public Health England, the report refers to sustainability (BREEAM, Ska and LEED) and wellness (WELL and Fitwel) rating systems.

The report suggests that emerging occupant demands, new performance standards and third party health & wellbeing ratings are beginning to reshape notions of value within the sector. As a result, employee satisfaction and productivity, absenteeism and presenteeism and recruitment and retention, can all be influenced positively by effective health & wellbeing strategy.

In the midst of the rapid evolution of modern work life and technology, the key to our mental and emotional well-being in the future will be understanding how humans and machines can best work hand in hand. The close alliance with technology will continue to grow but with at its core, keeping a personal connection, which remains the key to a productive and healthy workplace.

The workplace plays a crucial role in the overall health and wellbeing of its occupants, particularly in relation to the and location and community context, a green and sustainable environmental and spatial quality and the culture it promotes. (See Figure 4)

Figure 4. 510 West 22nd Street.

1.3. Design Drivers and Methodology

A Feeling of Place: Nature in the Public Realm

The desire for access to natural elements, not just for natural daylight, has resulted in the introduction of biophilic

elements, living green walls, emphasis on views and vistas, and outdoor patios and terraces throughout the vertical campus. This will often include leveraging new multi-level plazas, gardens and meeting place rooftop terraces to capitalize on green spaces, views, weather and also time for reflection.

Other components that need to be addressed for a successful vertical workplace are:

Integration: A key objective within the workplace is to design vertical connectivity and compelling spaces for interaction. Both these can be encouraged by elements such as enhanced interior atriums, interconnecting stairs and atrium facing terraces, as well as bridges, spaces for gathering and external vertical parks.

Spatial Quality: Sky terraces and communal spaces are often used to create a place for amenities and informal meetings. These active hubs can also create a link between different work areas and provide social or solitary respite. Additionally, they enhance already existing functional qualities of work settings and bring together groups and teams allowing for cross pollination

Flexibility: If buildings are to have any legacy, adaptability is crucial for the constantly evolving needs of modern workspaces, which has resulted in the growing trend for mixed-use facilities. The vertical workplace must also have the ability to scale up or down on office needs, and retail and/or service needs. For example, office spaces converted to retail areas. This is now commonly termed as an "emerge/exit strategy" which is become more commonplace where more traditional campus environments need to function within a vertical context.

Happy Floors: Today's reality of longer working hours means that the desire for convenience for both work and personal needs can be met with on-site or adjacent amenities. As well as co-working or communal workspaces, companies are now integrating additional spaces such as food and beverage offers, retail, fitness and wellness facilities.

2. Exemplars for the Future Workplace in the Vertical City

2.1. 151 North Franklin, Chicago

For the design of 151 North Franklin, a spec office tower in Chicago, design firm, John Ronan Architects asked: "How do you pull the city into the building? And conversely, how do you make it better?" [Architect Magazine, 2019]. Instead of focusing on the building's form, they took a more urban holistic approach, connecting the building's public spaces to the city around it. Starting with the existing pocket park located across the street, the scheme extends the concept of green space right through the building, with a plaza and visually open lobby at the base, a terrace on the second level and a glassed-in deck on the top floor. (See Figures 4 and 5)

Moving away from the conventional 'mausoleum' style lobby, specifications and materials are a key element in creating a less formal and more inviting spaces. The core is clad in sandblasted mirror-finish glass to reflect the birch trees and the daylight from full-height windows at the end of each elevator bank.

Figure 5. Allen & Overy Headquarters Spitalfields, London.

2.2. Penton Place, Central London

In Central London, the work at SCRarchitects to create 'Integrated Vertical Communities' is informed by a diverse professional team of leading edge specialists in planning policy, townscape and heritage constraints and the council design review process. In addition, progressive workplace,

Figure 6. 151 North Franklin, Chicago.

inclusive design, sustainability and climatic analysis are all straightforward practices in the design development programme.

Generally in London, a true international mega city, town planning policy aims not only to reflect a programme of diversity and social mobility but also an integrated, interactive, supportive business and residential community.

This "London Environment" made up of diverse social and economic priorities is a guide to creating a 21st Century model for mixed integrated developments. The notion of integrating the workplace with an aging population who seek an urban existence with the natural presence of young professionals and working families from the four corners of the planet are the key components of our integrated vertical community.

The issue in housing Britain's expanding ageing population, is also at present one of the most acute social and economic challenges.

At Penton Place (see Figure 6), SCRarchitects are collaborating with a unique and principled London University, 100 years old that specialises in Asian, African and Middle Eastern Studies, SOAS together with a progressive Central London borough.

This enables the primary design goals in urban design, social contribution and architecture to be inculcated into the design, development and delivery model.

Infrastructure is a key building block in an integrated mixed development and our site is located within 600 metres of one of Europe's busiest and newest transport, multi modal hubs; Kings Cross, St. Pancras.

This leading edge transport centre is served by international high speed rail, UK and domestic heavy rail, light rail, underground tubes, London buses and of course he ubiquitous London black cab.

This extraordinary mix of opportunities, rigorous design review, council and institutional collaboration and advanced infrastructure offers a unique urban design and architectural canvas, to create an Intergenerational, Interconnected Vertical Community, even in Central London.

The workplace programme calls for great and grand public spaces and features a new 60 × 90 metre London Square and 20 × 30 metre "younger sibling square" adjacent. Our historical research indicated that on this site until 1910, there was a small cul-de-sac known as Percy Square, in consort with open permeable double height foyers and magnificent cantilever entry areas with a truly grand open air stair entering the site from Penton Rise.

The three workplace and residential building components sit above a lower ground level which features shops, cinemas, a fitness centre and workshops.

This composition of three building elements form the public space and our international, integrated vertical community. The buildings step down from the tallest slender bar to lower element reflecting the scale, context and heritage of the neighbouring urban fabric.

The tallest element is a slender 30 level workplace office, orthogonal to a 20 level family residential component of 80 two and tree bedroom family apartments linked to a 12 level component of 70 one and two bed apartments for seniors, young families, key workers and millennials.

The three slender residential towers are fully linked by a highly permeable ground plane with public squares, an 8 metre high green wall and multiple entries. This formula repeats itself at Level 3, Level 8, Level 19 and the high roof level at 30.

Full floor plate sky terraces connect all three buildings at these levels with walk through public spaces, gardens, children's area, outdoor exercise space and outdoor lounge seating areas. London is, of course, in Northern Europe, not Singapore, so covered areas, lush plantings for protection, pavilion structures and recycled natural gas fire hearths are provided.

The Sky Terrace design not only promotes integration, social exchange and serendipity but also creates a two times multiplier for public space and provides spectacular views and vistas across London's heritage sights at St. Pancras and the emerging 21st Century London.

2.3. Tencent Headquarters, Shenzhen

Located in Shenzhen, the headquarters for Tencent is designed specifically to prevent the 10,000 workers of the

Figure 7. 151 North Franklin, Chicago.

Figure 8. 151 North Franklin, Chicago.

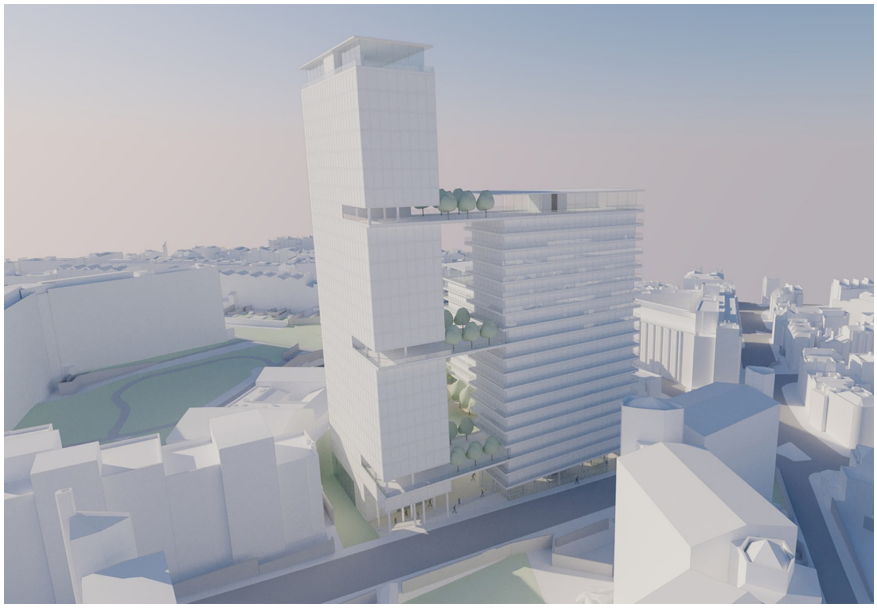

Figure 9. Penton Place, Central London.

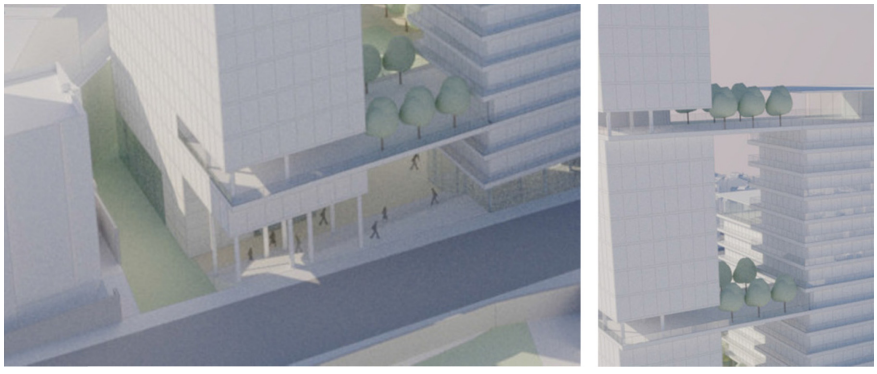

Figure 10. Penton Place, Central London.

technology firm from getting silos in their different departments. The two towers rise to 50 and 39 storeys respectively and are connected by three large bridges, clad in copper-coloured aluminium louvres. Each bridge contains a specific set of facilities shared between the north and south tower, such as a health centre, a library, and a running track that loops between the two buildings.

2.4. Bishopsgate

Located in the heart of the City of London's financial district, 22 Bishopsgate was designed with the individual's well-being in mind. The building is a Vertical Village, built to support and nurture its population of 12,000 inhabitants. Higher ceilings, increased daylight control, better fresh air and amenities at different levels, combine to support individuals, in traditional and new ways of working. Outside of office area, approximately 100,000 square feet is dedicated to facilities that aim to improve the everyday experience for the building's users and the public. These include retreat areas for relaxation and exercise, informal meeting spaces for both small start-ups

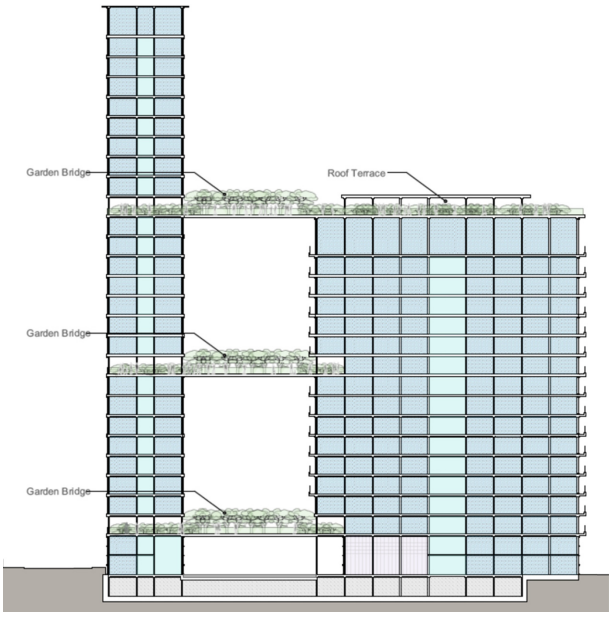

Figure 11. Penton Place, Central London.

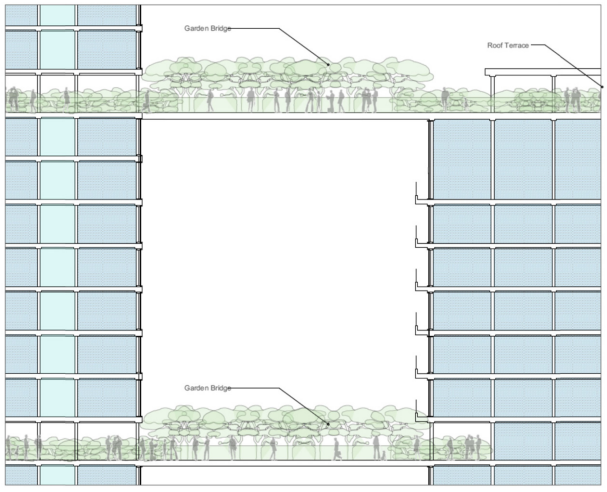

Figure 12. Penton Place, Central London.

Figure 13. Penton Place, Central London.

Figure 14. Tencent Global Headquarters, Shenzhen.

and established companies, a Market offering fresh food and open kitchens, as well as an outdoor terrace.

2.5 Cutlers Plaza, City of LondonSCRarchitects

SCRarchitects were commissioned by Henderson/THIA/

Figure 15. Tencent Global Headquarters, Shenzhen.

Figure 16. Tencent Global Headquarters, Shenzhen.

Madison to design a forward thinking vertical workplace in the City of London, focused on the well-being and creativity of the occupants. The design picks up on the key design drivers which are previously highlighted and detailed in this paper.

Several great outdoor public rooms articulates the entry and surrounding passages for this progressive 21st Century workplace office building. The raking entry colonnade transitions into the tall building component with a sculptural stepping soffit to adjoin and embrace the adjacent, historical

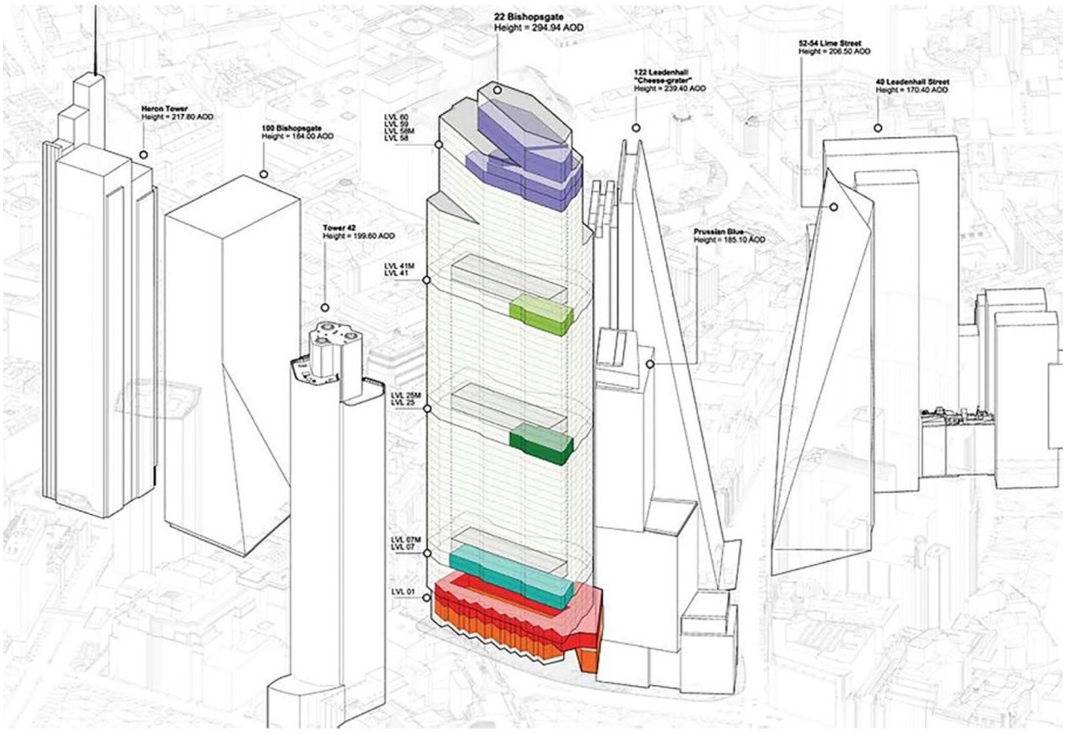

Figure 17. 22 Bishopsgate London Diagram.

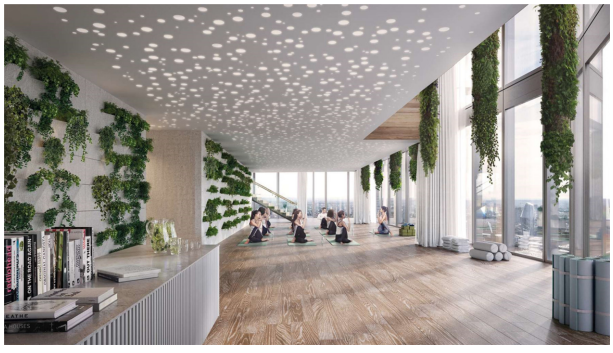

Figure 18. 22 Bishopsgate London.

Figure 19. 22 Bishopsgate London.

Figure 20. 22 Bishopsgate London.

Devonshire Gardens. This urban design solution is reinforced by a newly created lineal park derived from the orientation, materiality, planting and serene environment created by Paley Plaza in Central Manhattan, constructed in the 1960's.

However, in a break from the current status quo for office destinations, the offer of a quality public realm is not confined to ground plane. At Cutlers Plaza the public realm is extended up thru the two building components to a variety of accessible elevated hanging gardens, vertical plazas and cascading roof top terraces.

We have been able to create outdoor spaces for the workplace that deliver our design goals for wellbeing, sustainability and a greener, more humane, collaborative workplace environment. This is achieved across a multi-

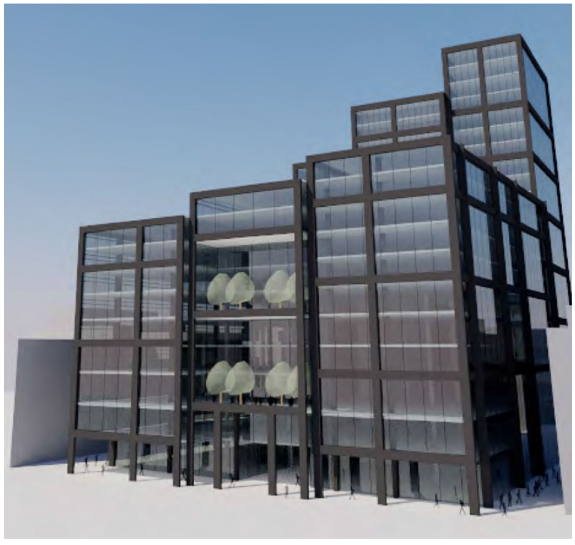

Figure 21. Cutlers Plaza, City of London, Sketch.

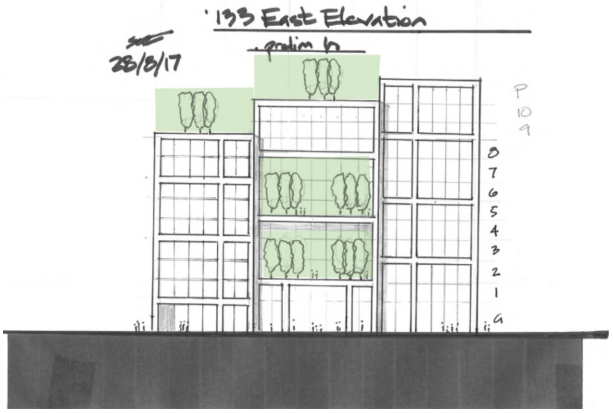

Figure 23. Cutlers Plaza, City of London, Render.

level configuration of plazas and terraces from a considered ground plane, to mid-level external garden plazas, culminating in stepped roof level parks.

These public gardens at ground level and throughout the multi-level workplace provide the "spaces between"

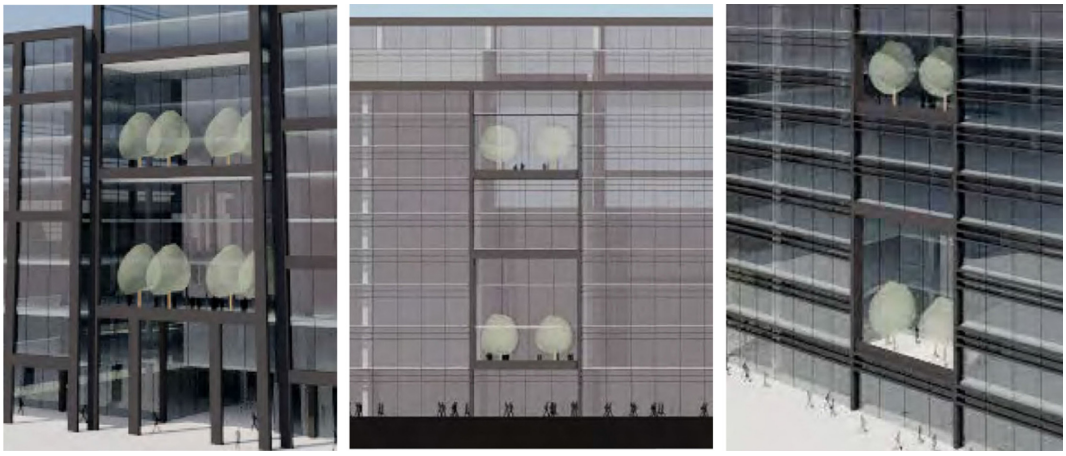

Figure 22. Cutlers Plaza, City of London, Render.

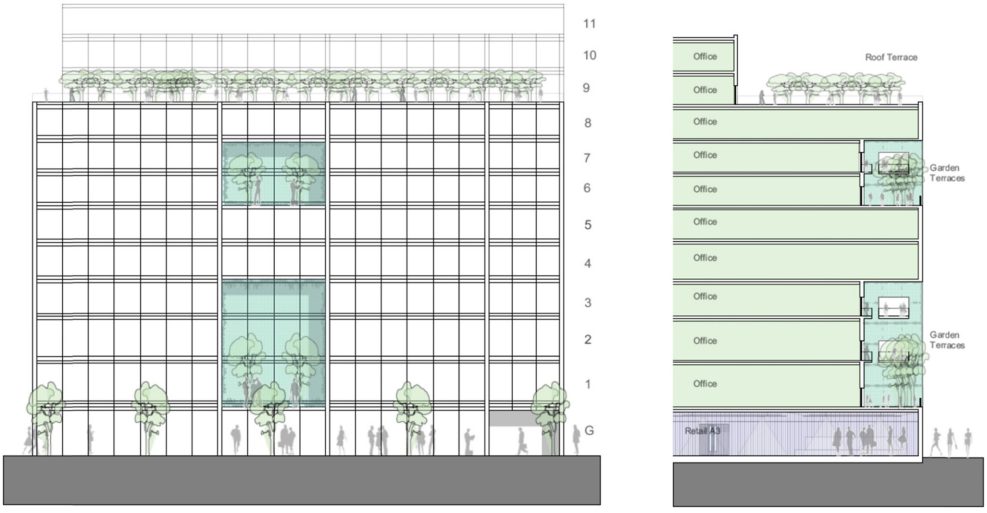

Figure 24. Cutlers Plaza, City of London, Render.

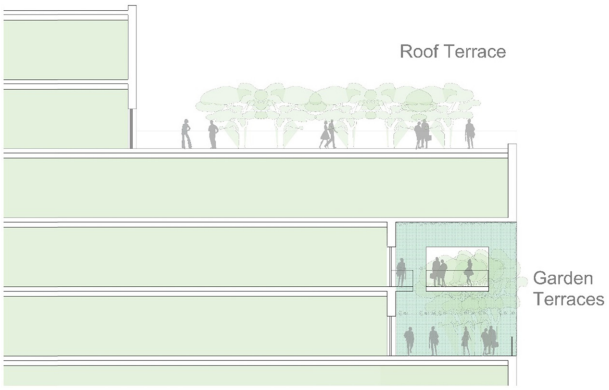

Figure 25. Cutlers Plaza, City of London, Render.

which are proven to enhance productivity, wellness and innovation. As opposed to traditional conference or break out areas, these elevational terraces offer contact with nature; a top criteria for the occupants of the future workplace in our vertical environments. This is the future workplace in our vertical terraces.

Conclusion

It is surely our responsibility to create vertical communities in the workplace and the broader community to foster healthy 21st Century vertical workplaces.

Our future vertical cities must also provide for serendipity in the workplace; a key attribute to drive the information exchange and collaboration that are proven to provide positive and progressive business outcomes.

The collective spaces in our workplace centres must provide a three dimensional matrix of connected and identifiable platforms to leverage the open and progressive future way of working. This will enable social networking and idea sharing, and create multi-dimensional, multi-level business incubators for innovation and creativity.

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