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Connected/Concentrated/Collaborative: China's Emerging Megacities and Future Workplace Precincts

联结/集中/协作：中国新兴多中心大城市与未来园区设计机遇

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Abstract | 摘要

This paper analyzes the regional restructuring of the mega-urban regions created through HSR connections between new intensive specialized urban centers. This is a comparison of research into polycentric models for megacities and the developmental impacts of high-speed rail. The research concludes that China's new megacity is actually a network of smaller cities, creating a connected, concentrated, and collaborative whole. As this next phase of urbanization is driven by a transition to the new service-based knowledge economy, this paper further examines a new emerging high-density typology of innovation in these cities, as well as the structural similarities between the precinct-scale and mega-urban-region.

Keywords: High-speed rail, Megacities, Pearl River Delta, Polycentric, Urban Planning, Workplace

本文旨在探讨通过新兴密集型专业化城市中心之间的高速铁路连接而进行的大型都市区结构重建。本文对比了大型都市多中心模型的相关研究以及高速铁路发展的各种影响。研究表明，中国新兴大都市其实为多个较小的城市所构成的一个网络，各城市相互联结/集中/协作而形成一个整体。向着新服务经济和知识经济的转型将推动下一阶段的城镇化进程，本文进一步探讨了这些城市中一种新兴的高密度创新结构，以及片区尺度和大型都市区之间在结构上的相似性。

关键词：高速铁路、巨型城市、珠三角、多中心、城市规划、办公场所

Introduction

China's rapid urbanization is being channelled by the Central Government policy into three emerging mega-cities, or more accurately "mega-urban-regions." At the same time, the world's largest high-speed rail (HSR) network has been delivered, better connecting cities within these regions and to the national city-networks beyond. HSR is effectively condensing the socioeconomic space between large adjacent city nodes and further strengthening the combined economies and lifestyle within mega-urban regions. It is likely that the next decade will see these regions in China grow ever more polycentric and functionally diverse as they are connected through both transport links and shared populations.

China is simultaneously undergoing a shift towards a more domestically driven and service-based economy. The new generation of graduates is more educated than ever before, while the new generation of companies in e-commerce and technology are the stars of the domestic economy, emerging into the global scene. The resulting battle for talent is being played out in state-backed specialized precincts – hubs for innovation made up of high-density

简介

由中央政府政策引导的中国快速城镇化正在形成三个新兴的大都市，确切地说，是三个“特大都市区”。同时，中国已打造出世界最大型的高速铁路网络，进一步将这些地区内的城市连接起来，并在全国范围内形成城市网络。高速铁路有效地浓缩了相邻大城市节点之间的社会经济空间，进一步巩固大都市区内融为一体的经济和生活方式。有可能，未来十年随着这些中国都市区通过交通和共同的人口而相互联结，其多中心、功能多样化趋势将日趋明显。

与此同时，中国正在日益向着内需驱动型和服务型经济转变。新一代毕业生教育程度更高，而新一代的电子商务和技术企业成为国内经济的明星，并在国际舞台上一展风采。由此产生的人才争夺正在受国家支持的专业化片区——由密集型办公空间和共享服务构成的创新中心内上演。这些片区是推动国内知识产权的拥护者，中国的原始制造业引擎正在成为这些新兴市场类型天然的家园。中国国内这些企业的规模日益需要一种更高密度的建筑形态模型来突破现有“共享中央绿地园区”的模型。

截至今年，珠江三角洲地区（由深圳、广州等11座城市组成）已取代东京成为世界最大的城市群。这里有中国最大的一些新兴技术和创新企业，如腾讯和小米，它们

workplaces and shared services. These precincts are the champions of a national push for more domestically born intellectual property, and the original manufacturing engines of China are emerging as the natural home of this new sector. It is becoming evident that the scale of these companies in China is calling on a new higher-density model of built form to go beyond the campus-on-the-commons model.

As of this year, the Pearl River Delta (PRD) region – a grouping of around 11 cities, including Shenzhen and Guangzhou – has overtaken Tokyo as the largest urban agglomeration in the world. It is also home to some of China's largest emerging technology and innovation companies, such as Tencent and Xiaomi, attracting migrating graduates and building a substantial talent pool for the PRD. The first commercial campus, like university campuses before, was developed in a model similar to a village, organized around a commons, due to an understanding of how the social drivers that structure urban space offer unique opportunities when applied to learning and innovation. In the context of larger, higher densities and more complex city forms, it is worth considering opportunities for more connected, concentrated, and collaborative models of a workplace based on urban lessons.

This paper looks at the regional restructuring of mega-urban regions created through HSR connections between new and intensive specialized urban centers. This is a comparison of research into polycentric models for megacities and the developmental impacts of HSR. Additionally it speculates on a potential future high-density typology of innovation precincts which could be ordered based on similar networks of movement systems and intensive innovation nodes for shared services and social engagement.

Megacities

Jean Gottman coined the term "Megalopolis" over 50 years ago (Gottman 1957), referring to the large urban agglomeration in the northeast of the United States. Since this time our understanding of large cities has grown in complexity, as too have cities around the world. Beyond theories on World Cities (Hall 1966, Friedmann 1986, Sassen 1991, Hall 1996), and Global City Networks (Beaverstock et al. 2000, Sassen 2001, Taylor 2004, Hall 2004), the term "mega urban regions" (MURs) or "mega city regions" (MCRs) emerged in the 1990s, initially with regard to large urban areas in East Asia. They were categorized as growing groups of urban centers or what has come to be known as the functional urban areas (FURs) that were often physically separate though functionally connected (Hall 2010). Consequently, significant amounts of research have been conducted into MURs within a Western European and American context (Douglass 2000, Scott 2001, Hall 2002, Hall 2010). Analyses have primarily focused on the nature of the functional connections between multiple urban centers within these regions and, following discourse on hierarchies within global city networks, these urban regions have been understood to develop as a complex division of connected functions leading to varying degrees of polycentricity (Hall 2010).

Though these mega-regions have developed at a rapid pace within Asia, the phenomenon has emerged quite gradually around major capitals in the United States and Europe over the last two to three decades. Peter Hall (1994) noted almost 20 years ago on the European condition:

"…These agglomerations are exceptionally concentrated in what could be called the Eurocore or Golden Rectangle, the boundaries of which are approximately Birmingham, Paris, Frankfurt and Dortmund. This, one of the most highly urbanized regions in the world, includes South East England, three regions in France (Nord-Pas de Calais, The Paris Basin and Ile-de-France), all three in Belgium (the Walloon Region, Flanders and the Brussels Region) three in the Netherlands (South, West and East), one in Germany (North Rhine Westphalia), plus Luxemburg: twelve Regions, essentially the Region of Central Capitals in the Europe 2000 study, occupies only 13 percent of the land area of the EC (post-1990), but accounts for more than 25 percent of the population, including 12 million people in the London metropolitan area, 11 million in Ile-de-France, between 4 and 5 million in the Randstad and 10 million in Rhine-Ruhr, not to mention the fact that these are among the major centres of global service activity in the entire world."

More recently, research has observed some of the world's largest mega-regions developing within China (Scott 2001, UN-Habitat 2009, Hall 2010). As the country's rapid urbanization over the last 20 years has tipped the world's population distribution into an urban majority (UN-Habitat 2009), one consequence has been the emergence of three primary urban mega-regions along its east coast. The PRD, Yangtze River Delta, and the Bohai Sea Rim regions are responsible for more than 42 percent of China's GDP and attract 79 percent of foreign investments, despite accounting for less than three percent of the national

吸引着毕业生来到这里，为城市建立起巨大的人才库。第一批商业园区类似于以往的大学校园，是基于像村庄一样的模型而开发的，围绕中央共享绿地来组织，并充分理解构建出城市空间的社会驱动力如果应用到学习和创新中，将如何提供独特机遇。在更大、更密集、更复杂的城市形态背景下，我们应当思考根据城市经验建立更互联、集中、协作的办公空间模型的机会。

本文探讨通过新兴密集型专业化城市中心之间的高速铁路连接而进行的大型都市区结构重建。本文对比了大型都市多中心模型的相关研究以及高速铁路发展的各种影响。此外，本文探讨一种可能的未来高密度创新片区结构，可基于由交通系统和用于共享服务和社会参与的密集型创新节点组成的相似网络进行重组。

巨型城市

戈特曼（Jean Gottman）在50多年前创造出“大城市群”（Megalopolis）这一名词（Gottman 1957），用于描述美国东北部的巨型城市群落。此后，我们对于巨型城市的理解日渐复杂，世界各地城市发展也越来越向复杂化发展。除了关于世界城市（Hall 1966, Friedmann 1986, Sassen 1991, Hall 1996）以及全球城市网络（Beaverstock et al. 2000, Sassen 2001, Taylor 2004, Hall 2004）等一些的理论，“巨型都市区域”或“巨型城市区域”等名词也在20世纪90年代兴起，最初用来形容东亚的大型都市区域。它们被归类为成长中的城市中心群，或是如今我们所说的城市功能区，它们虽然在地理上相互割离，但功能上又相互联结（Hall 2010）。于是，在巨型都市区域方面已开展了大量以西欧和北美为背景的研究（Douglass 2000, Scott 2001, Hall 2002, Hall 2010）。这些分析主要关注这些都市区内多个城市中心之间的功能联系特征，随后，从关于全球城市网络内的层级的论述中， 我们可以了解到这些都市区域已建立起一类复杂的互联功能，这又产生了程度不一的多中心化城市（Hall 2010）。

尽管这些巨型城市区域在亚洲范围内快速发展，这一现象其实是在过去二三十年间在美国和欧洲的大型首都城市周围逐渐兴起的。Peter Hall（Hall 1994）在将近20年前就发表了关于欧洲情形的以下言论：

“……这些城市群高度集中于所谓的‘欧核’或‘黄金矩形’内，其边界大约位于伯明翰、巴黎、法兰克福和多特蒙德。这是世界上城市化水平最高的地区之一，包括英格兰东南部，法国的三个区（北部加来海峡，巴黎盆地，法兰西岛），比利时的全部三个区（瓦隆大区，弗拉芒大区，布鲁塞尔–首都大区），荷兰的三个区

Figure 1. China HSR structure by regional economy (Source: Tang et al. 2011)
图1. 中国各地区经济体高速铁路结构（来源：Tang et al. 2011）

territory (MOHURD, 2008). China has been seizing the unique opportunity to plan its national economy around the growth of these emergent urban regions. It is in this context that a large portion of China's ongoing urbanization is being directed by the Central Government policy into these regions, and the HSR infrastructure is one of a raft of complementary policies driving the growth within these economies.

Chinese policy-makers have set ambitious growth targets for mega-regions. Expectations are that urban agglomerations of this type will eventually comprise 20 percent of the national land mass, house 50 percent of the national population, and produce 80 to 90 percent of GDP nationally (Yang et al. 2011). With the comparative national economic contributions made by cities such as Tokyo (26 percent of national GDP), New York (24 percent) and London (22 percent), the economic potential of urban regions developed around a major city is not being lost on policy–makers planning regions surrounding Bejing, Shanghai, and Hong Kong-Shenzhen. The PRD region is China's first and largest mega-urban region. Formed by a number of major and minor cities surrounding Hong Kong, Shenzhen, and Guangzhou, the PRD encompasses an urban area that has recently overtaken Tokyo as the world's largest city. Unlike Tokyo, however, the 11 cities that make up the PRD each have their own distinctive histories and unique identities, creating immense opportunities for specialization in the region's future economic structure.

China HSR Mobility & the PRD Region

Whilst China's urban development is focused more and more within dense mega-regions, the world's largest HSR network has been delivered, better connecting cities within these regions and to the national city-networks beyond. The past decade has seen China begin the implementation of a national HSR network plan, which promises to deliver more than 18,000 kilometers of HSR track across the country. By mid-2010, China had already delivered 6,552 kilometers of track with more than half of this network running trains at speeds of more than 250 kilometer per hour (Tang et al. 2011). When completed in 2020, the system will connect all provincial capitals – apart from Lhasa in Tibet – and will make up half of the world's total HSR track (Zhao 2010).

At the national scale, the system is designed around four primary north-south corridors and four east-west corridors. It is at this scale that the Central Government hopes the HSR network will act as a catalyst, spreading prosperity from China's more developed coastal corridor to the central and western provinces (Tang et al, 2011, Chen 2012). Somewhat contradictory to this though, a series of high-speed inter-city segments of lines will further strengthen the mega-region economies by improving connectivity between major and nearby secondary cities (Figure 1).

（南区，西区，东区），德国的一个区（北莱茵–威斯特法伦），以及卢森堡：共十二个区，即欧洲2000研究中提到的核心首都区，占据欧共体（1990年后）陆地面积的13%，但人口占欧共体人口的25%以上，包括伦敦都市区的1200万人口，法兰西岛的1100万人口，兰斯塔德地区的四到五百万人口，以及莱茵–鲁尔区的1000万人口，更不用说这些区域都是全球服务活动的主要中心。”

最近，研究发现世界上一些最大的巨型城市区正在中国崛起（Scott 2001，UN–Habitat 2009，Hall 2010）。20年来中国的快速城镇化也颠覆了世界人口分布，现在世界人口中城市人口占大多数（UN–Habitat 2009），中国东部海岸沿线的三个主要城市大区的崛起就是这一城镇化进程的结果之一。珠江三角洲、长江三角洲和环渤海地区贡献了中国42%的国内生产总值，吸引了79%的外国投资，而面积仅占国土面积的3%（MOHURD，2008）。中国抓住了这一独一无二的机会，围绕这些新兴城市区的发展对国家经济进行规划。在这一背景中，中国持续城镇化的一大部分都是由中央政府对这些地区实施的政策直接引导的，而高速铁路基础设施是推动这些区域经济发展的众多补充政策之一。

中国的决策者们为巨型城市区制定了宏伟的发展目标。他们的期望是，这类城市群将最终达到全国陆地面积的20%，拥有50%的全国人口，贡献全国国民生产总值的80%至90%（Yang et al. 2011）。参考世界几座大城市对其国家经济的贡献水平：东京（GDP的26%）、纽约（GDP的24%）、伦敦（GDP的22%）；决策者们对北京、上海和深港地区周边区域的规划也体现了一座巨型城市周边发展的城市区的经济潜力。珠三角地区是中国第一座也是最大的大型都市区。这一区域由以香港、深圳和广州为中心的多个大型和小型城市组成，其城市区近期已取代东京成为世界最大的城市区。但不同于东京，组成珠三角的11座城市的历史和个性各具特色，为地区未来经济结构的专业化提供巨大机遇。

中国高铁便利性与珠三角地区

尽管中国城市发展日益集中于密集型大城市区内，世界最大的高速铁路网络仍在此建成，进一步将这些地区内的城市连接起来，并在全国范围内形成城市网络。在过去的十年里，中国开始实施一项全国高速铁路网络计划，承诺在全国建设超过1.8万公里的高速铁路轨道。到2010年中为止，中国已建设6552公里轨道，网络内超过一半的轨道以250公里/小时以上的速度运行（Tang et al. 2011）。2020年建成时，该系统会将所有省会城市（拉萨除外）连接起来，并占到世界高速铁路轨道总长的一半。

HSR & Potential Development Impacts

HSR is potentially more spatially transformative than any previous transport technology advancement (Hall 1994). On a theoretical level, a lot of research has been established into the effects of HSR on social and economic spaces. The work of Speikerman and Wegener (1994) on time-space maps illustrated the effective distortion of the "social and economic space" between stations on HSR connections:

"Increasing mobility is one of the constituting features of modernity: "The history of modern societies can be read as a history of their acceleration" (Steiner, 1991, 24). Modern society is a society of centaurs, creatures with a human front and an automobile abdomen (Sloterdijk, 1992). Today Europe is facing a new thrust of acceleration: The planned European high-speed rail network (Community of European Railways, 1989) will open up new dimensions of travel speed and so of the relation of space and time."

Research has found that HSR can most efficiently provide connections between cities previously too far for vehicular commuting and too close for efficient air travel. Research indicates that this is the predominant case for cities located between 100 and 500 kilometers apart, where HSR travel can be more efficient than air travel, taking into consideration commuting to stations or airports at both ends of the journey (Blum et al. 1997, Vickerman et al 1997, Givoni 2006, Gourvish 2010, Albalate & Bel 2010).This is the critical test of feasibility for HSR infrastructure investment.

These transport mode-share impacts have also been linked to economic and spatial changes that can occur as a result of HSR infrastructure. Research relating to the preferences of certain advanced service businesses to locate near to high-speed hubs has led to conclusions on HSR's potential to create increased face-to-face service business opportunities (Sands 1993, Vickerman 1997, Vickerman et al. 2010). Within the context of this research, as well as the theories on increased density surrounding transport hubs or on T.O.Ds (Cevero 2004), the type and density of development within the immediate station precinct is critical to these benefits being realized (Sands 1993, Bonnafous 1997). In advocating for HSR within mega-regions in the United States, Catherine Ross concludes that HSR infrastructure has an inherent regional focus, with the ability to connect a regions employment supply and economic activity (Ross 2008). It is for this reason Ross also claims that HSR is key to the establishment of regional economic entities which, with the emergence of mega urban regions, are becoming the most powerful economic units within the world economy.

Lessons for Designing a Future Campus Model (Workplace as a Polycentric Megacity)

"Perhaps the greatest myth of all the new economy myths is that geography is dead." Florida 2004, pg 219

At the intersection of these megacity trends, there is an alignment between new city forms and campus workplaces in developing diverse and decentralized forms capable of managing density and incubating innovation. Networks of movement within the city appear to allow for a diverse range of concentrated nodes to be formed to cater to localized services while having a highly specialized functional focus. The more connections this node has to other specialized nodes, and the faster and more directly these nodes can connect to others, allows for a stronger and more effective network as a whole. It is in this context that we can explore the application of these ideas to future super-sized campuses that could potentially be more connected, concentrated, and collaborative than ever before.

There has been a long history of inquiry into the most suitable workplace conditions for nurturing innovation. The common factor

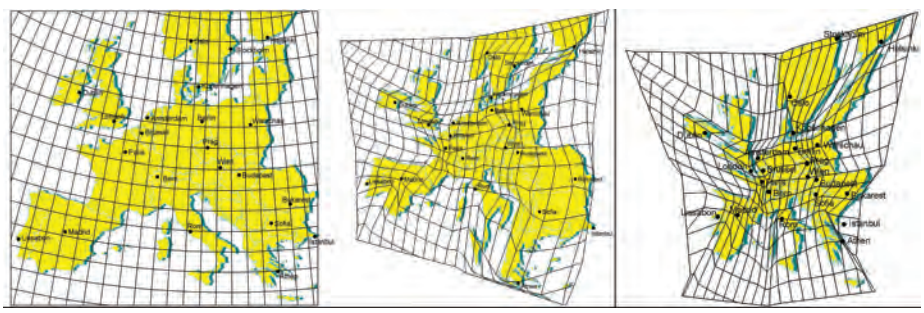

Figure 2. Base map (60 kilometers per hour), railway travel times between 1993 and 2020 (Source: http://spiekermann-wegener.com/mod/time/time_e.htm)
图2. 基础地区（60公里/小时），1993年和2020年的铁路运行速度（来源：http://spiekermann-wegener.com/pub/pdf/IRPUD_AP132.pdf)

在国家层面，该系统设计围绕4条主要的南北走廊和4条东西走廊而设计。中央政府希望高速铁路网络将扮演催化剂角色，将中国的繁荣前景从更加发达的沿海走廊推广至中西部省份（Tang et al, 2011, Chen 2012）。但有些矛盾的是，一些城际高速铁路线又将通过改善相邻的主要二级城市之间的联系而进一步巩固大城市区经济（图1）。

高速铁路的潜在空间转变能力高于以往任何交通技术进步（Hall 1994）。从理论上讲，大量研究投入于高速铁路对社会和经济空间的影响。Speikerman和Wegener（1994）关于时空地图的研究呈现了高速铁路线路上的车站之间"社会和经济空间"的实质性扭曲。

"越来越高的移动便利性是现代化的特征之一：'现代社会的历史可以解读为一部加速史'（Steiner，1991，24）。现代社会是人首怪物的社会，它有着人类的头和汽车的身体（Sloterdijk，1992）。如今的欧洲面临着新一波的加速潮：计划中的欧洲高速铁路网络（Community of European Railways，1989）将开辟新的旅行速度维度和时空维度。"

研究发现，那些相互之间距离对于汽车来说太远，对于飞机来说又太近而降低了效率的城市，它们之间最高效的联系方式是高速铁路。研究指出，对于相互之间距离在100至500公里的城市来说尤其如此，即高速铁路比航空旅行更高效，因为要考虑到在旅程出发地和目的地往返于车站或机场的路程（Blum et al. 1997, Vickerman et al 1997, Givoni 2006, Gourvish 2010, Albalate & Bel 2010）。这是对高速铁路基础设施投资可行性的重要检验。

这些交通方式影响也与经济和社会变革有关，这些变革是高速铁路基础设施的结果之一。关于那些偏好开设于高速枢纽附近的高级服务业务的研究得出结论，高速铁路有潜力提供更多的面对面服务商业机会（Sands 1993, Vickerman 1997, Vickerman et al. 2010）。在这一研究以及关于交通枢纽周边密度增长的理论、关于T.O.D的理论（Cevero 2004）的背景下，毗邻的车站片区开发的类型和密度对于其可能实现的效益来说至关重要（Sands 1993, Bonnafous 1997）。倡导在美国大城市区内发展高速铁路的Catherine Ross得出结论，高速铁路基础设施原本就聚焦于地区，能够将一个地区的就业供给和经济活动联系起来（Ross 2008）。正是因为这样，Ross也主张，随着大城市区的兴起，地区经济个体正在成为世界经济最强有力的经济单位，而高速铁路是这些地区经济个体的建立的关键。

Figure 3. Alibaba phase 1 Campus Concept Diagram (Source: HASSELL)
图3. 阿里巴巴一期园区概念示意图（来源：HASSELL）

between much of the theory relating to workplace is recognition of the importance of face-to-face interaction between employees. It is the continued success of places like Silicon Valley, and the emergence of creative economies like Austin's, that propagate a search within urban planners and architects for the magic recipe in creating places that nurture innovation. Steven Johnson has theorized that natural environments, like rainforests and coral reefs, are the best examples for us to look to. With their immense biodiversity and complex networks of species interdependencies, they are the high-density environments of the animal world.

As with the last century's growth in cities around the world, the change in scale from the very first technology companies to the giants of today's economy has been immense. In 2007, my firm (HASSELL) designed Alibaba's first campus in Hangzhou with a capacity for 4,000 people, although the client company only intended to utilize half of this space. Less than 18 months after its opening, the company inhabited all of the space for its own working population, and now they are into the fourth phase of their campus construction with the majority clustered around a separate area of the city and housing most of their growing 35,000-strong workforce. As the scale of the standard of technology campuses in China grows from catering to 4,000 people to much more, the spatial structure of these developments can take cues from the changing forms of China's megacities.

The first Alibaba campus was designed around an idea of a central commons. Several separate, but connected buildings were placed in a circle to enclose a central shared space – the heart of the working community and a shared amenity for workers. Most traditional campuses around the world tend to be, like Alibaba Phase 1, constrained to a five- or six-story maximum height. Buildings are usually allocated to various departments, and organized around landscape courtyards or pedestrian streets. Clustered around the lifts and stairs on each floor will be the meeting

未来园区模型（如同多中心大城市的办公空间）设计启示

“可能所有新经济神话中最大的神话是：地理已经消亡”
Florida 2004, pg 219

在这些大城市趋势的交叉点，新城市形态和园区办公相互匹配以打造多样而分散的形态，从而能够把握好开发强度并培养创新。城市内的移动网络可实现多种多样的集中式节点，能够满足本地化服务要求，同时又高度专注于专业化功能。这一节点与其它专业化节点之间的联结越多，这些节点与其他节点的联系越快速而直接，就可形成串联一体的整体网络。在这一背景下，我们可以探讨这些理念在未来超大型园区的应用，旨在令这些园区比以往都更互联，更集中，更协作。

长期以来人们都在探寻最适合培养创新的办公条件。大多数办公空间理论的共同要素是它们都意识到员工之间面对面交流的重要性。硅谷等地方的持续成功和奥斯丁等创新经济的兴起令越来越多城市规划者和建筑师去探索建造这些利于创新的场所的神奇配方。史蒂芬•约翰逊（Steven Johnson）提出一种理论，雨林和珊瑚礁这样的自然环境是最适合我们探讨的例子，因为它们都具备高度的生物多样性和物种之间相互依赖的复杂网络，它们是动物世界的高密度环境。随着上个世纪世界城市的发展，从最早的技术企业到如今的经济巨擎，其规模的变化是巨大的。2007

Figure 4. Alibaba phase 1 Campus Diagram (Source: HASSELL)
图4. 阿里巴巴一期园区示意图（来源：HASSELL）

Figure 5. Alibaba phase 1 Campus Commons (Source: HASSELL)
图5. 阿里巴巴一期园区公共区（来源：HASSELL）

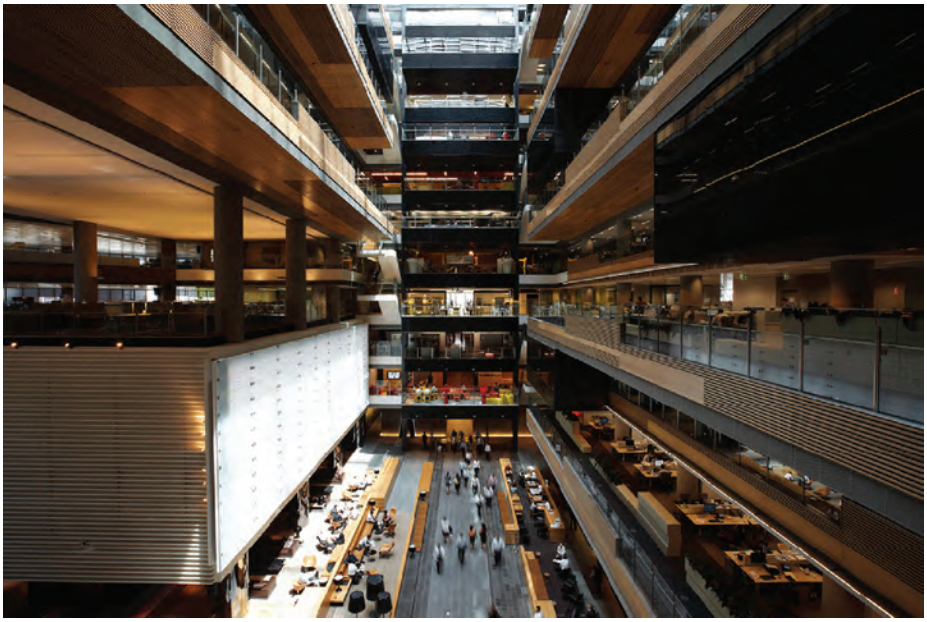

Figure 6. ANZ Centre, Melbourne (Source: HASSELL)
图6. 墨尔本，澳新银行中心（来源：HASSELL）

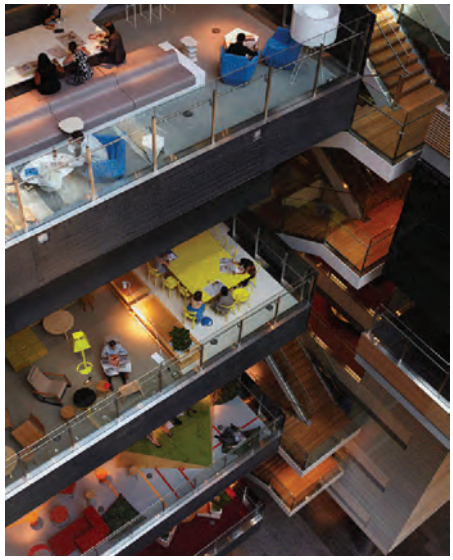

Figure 7. ANZ Centre "hubs" on various floors (Source: HASSELL)
图7. 墨尔本，澳新银行中心设在各个楼层的“中心”（来源：HASSELL）

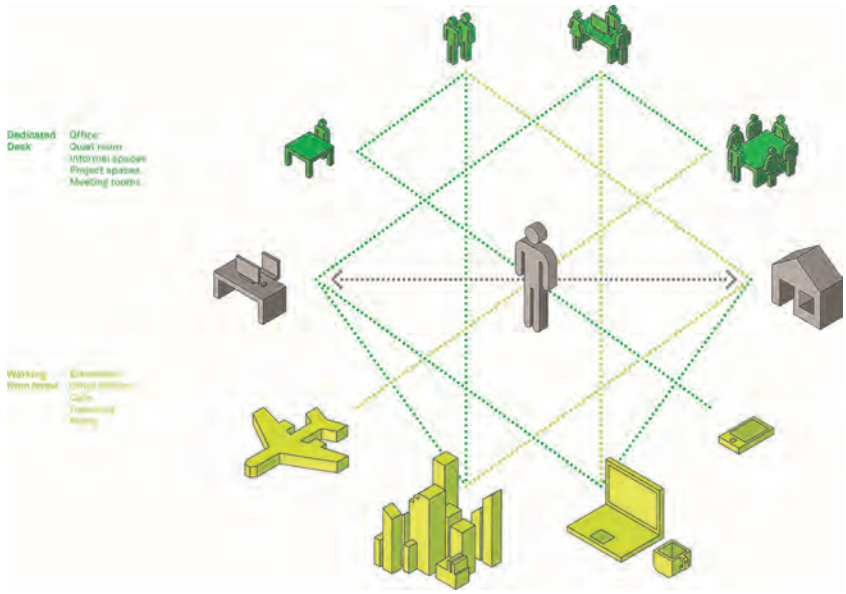

Figure 8. The free-range worker (Source: HASSELL)
图8. 自由行动的工作者（来源：HASSELL）

rooms, tea points, and management offices at the most accessible positions. If we equate this to a city structure, these nodes are the town centers or the "third place," connected to other centers and the backbone of social engagement within the city structure.

Interestingly, the basics of this structure remain intact as density and scale increase but the nature and complexity of connections between nodes increases. HASSELL's ANZ Centre is around 90,000 square meters of commercial office space across 13 levels. The building is organized around three cores and a central atrium space, creating almost 40 "hubs" throughout the building for agile working, formal, and informal meetings. With the majority of these spaces overlooking the central atrium, a highly complex network of vertical and horizontal connections is created through visual links, with much attention being given to creating a unique design identity to each hub.

It is in the context of this increase in the scale and complexity of workplaces that a shift in the nature of work is creating further similarities between urban planning and workplace design. The increased mobility of knowledge workers and their need to utilize more diverse settings throughout their work day means that workers will experience a number of ANZ-style hubs in their routine, rather than being bound to their closest and most familiar. Evidence suggests that this further enhances the sharing of information and innovation within organizations. For designers, the challenge now exists to find ways to make more diversity and specialization within hubs,

年，我所在的公司（HASSELL）设计了杭州的首座阿里巴巴园区，可容纳4000人工作，其任务制定围绕的原则是，入驻时，只有一半的空间是用于企业自身的。入驻18个月，才将全部空间用于企业自身的员工，现在园区正处于施工的第四阶段，大部分园区建筑都围绕一片城市独立区域而设，这一区域容纳了3.5万工作人口中的大部分。中国标准技术园区的规模可容纳的人数从4000增加到2万，这些开发项目的空间结构可从中国巨型城市变化的形态中获得启示。

阿里巴巴首座园区设计围绕中央公共区的理念而设计。多个相互分离但相互联系的建筑被设置于一个圆圈中，从而将一座中心共享空间封闭起来，这里既是工作社区的中心，也是一座共享设施，可监督和享受室外工作时光。

世界上大多数传统园区就像阿里巴巴一期一样，将建筑高度限制在5至6层以下。建筑往往分配给不同部门，沿景观庭院或行人街道周边组织。各楼层电梯和楼梯周围分布的是会议室、饮茶点和管理办公室，它们位于最便捷的位置。如果我们将它们与城市结构类比，这些节点就是城镇的中心或“第三场所”，与城市结构中的其他中心和社交轴线相连。

有趣的是，随着密度和规模提高，这一结构的基本并无变化，但节点之间联系的特征和复杂性已经增长。HASSELL设计的澳新银行中心是围绕13层高、9万平方米的商业办公空间展开。建筑围绕三个核心和一个中央庭院空间组织，打造约40个贯穿于建筑各处的“中心”，用于灵活的工作方式，以及正式和非正式会议。这些空间的大部分都俯瞰着中央庭院，通过视觉联系形成高度复杂的垂直与水平联系网络，同时又十分重视通过设计为各中心打造独特的设计个性。

whilst also making more direct connections between them as the social framework of a collaborative workplace.

Therefore, it follows that large and higher-density workplaces, like their city counterparts, have a distinct advantage that was previously unforeseen: the opportunity to offer the "free-range worker" more choices and diversity in their work settings can result in building social connections between various parts of the organization and increasing its overall innovation and output. Special districts are being created in China's major cities, such as Guangzhou and Hangzhou, where technology companies develop bigger and more complex workplace campuses. The free-range worker is now being provided with a variety of services and work settings within these precincts, but the most interesting question is one of scale; as these places grow and grow beyond 200,000 square meters in a single facility, it's worth considering how new mega-city forms can inform models of the mega-campus.

To speculate on the form of such a future campus, it becomes clear that the connectivity (both visual and physical), concentration (of increased working populations and services), and collaboration (of worker mobility and diversity) will be enhanced by the transformative design that has similarly occurred in megacities; that is, a design that can deliver density while enhancing the network of connections within, creating immense benefits in terms of innovation for the organization within. The only question is, what form will this take?

Is there a hybrid form of building that allows for large floor plates enhancing physical co-location, while also stacking vertically in a way that connects the various nodes within an organization? Is there a new form of node-to-node movement that could be introduced within a vertical campus that can create and condense complex networks? What is the best scale of an equivalent workplace neighborhood, and how can these clusters stack and connect in a high-density urban environment? What types of shared programs and diversity of use will be able to be inserted into the new mega-campus in offering relief to the monotony of such a large scale workplace?

A whole new type of campus built form, responding to the principles of the first campus as well as the emerging structures of polycentric mega-urban regions, seems well worth considering. In principle, it would seem to be driven by being connected, concentrated, and collaborative, reinforcing that geography is far from dead in the context of both urbanism and workplace innovation.

Figure 9. Future Connected Campus Concept (Source: HASSELL)
图9. 未来互联园区概念（来源：HASSELL）

在办公空间规模和复杂性提高的背景下，工作本质的变化使得城市规划和办公设计之间有了更多的相似性。知识工作者的流动性提高，他们也需要在一天的工作中利用到更多样的环境，这意味着员工们将在其日常工作中体验到多个澳新银行风格的中心，而不是将自己限制在距离最近、最熟悉的中心周围。证据表明，这进一步加强了组织内的知识分享和创新。对于设计师来说，现在的挑战在于找到提高各中心多样化和专业化的方式，同时在其间打造更多直接联系，使其成为协作型办公空间的社交框架。

因此，随之而来的是，大型高密度办公空间，就像城市一样，拥有了前所未有的显著优势。为“自由行动的工作者”提供更多选择的可能性和办公环境的多样化可在组织不同部分之间产生社交联系，并提高创新和整体成果输出。广州、杭州等中国大城市内正在建设这些专业园区，在这里，技术企业正在打造越来越大、越来越复杂的办公园区。这些园区向自由行动的工作者提供各种服务和工作环境类型，但最有趣的问题在于尺度，这些场所不断扩大，单个设施就超过了20万平方米，我们应当思考新型巨型城市形态如何可以为这些巨型园区模型提供借鉴。

在探索未来园区形式的过程中，我们越来越清楚的是，视觉及实体联系、集中化（工作人口和服务提高）和协作（工作者的流动性和多样性）都将通过巨型城市中出现的类似的转化型设计得到巩固。既能提高密度又能巩固组织内的联系网络的设计将通过创新而带来巨大的效益。一个有趣的问题是，其发生形式是什么？

是否存在一种建筑的混合形式，既可实现大面积的楼面，巩固实体的协同配置，又可垂直堆叠，将组织内的不同中心联系起来？是否存在一种节点之间移动的新形式，可将其引入垂直园区，打造并浓缩复杂的网络？相对应的办公社区的最佳尺度是怎样的，这些建筑群又可以如何在高密度城市环境中堆叠、联系？哪些共享计划和功能多样化类型将能够被植入新的巨型园区，从而避免这种大型办公空间的千篇一律？

一种同时满足最早的园区原则以及新兴的大都市区多中心结构的全新园区建筑形式看来十分值得我们思考。原则上，推动这一结构的是：联结、集中和协作，在都市化和办公空间创新的背景下，巩固远未消亡的地理结构。