Urban Infrastructure and the Making of City Image in the Age of Globalisation: The JLE Project in London

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Abstract

Image is important to a city when trying to promote itself and compete with the other ones and reach a higher status in the networks of global economy. Meanwhile, architecture is one of the key elements for building the city image, which truly needs some visual and concrete factors to catch people's attentions and make them believe. Among the architectural elements, the urban infrastructure, by being built as architectural attracting objects in the city, can play a significant role for urban architecture and shape the city form as the spatial framework for urban landscape. This paper aims to investigate how these major urban infrastructure projects work for the building of the city image in the age of globalisation. For making the concepts and argument more evident, the Jubilee Line Extension (JLE) project in London will be adopted as the case.

The argument starts form a phenomenon that architecture plays an essential role for the city image making. Among the architectural elements, the urban infrastructure works with striking architectural design stand as the significant components. Next, it moves to the exploration of the nature of city image and its mechanism, as well as the answer why city image become more and more important to the city in the age of globalisation. Followed by the story of JLE project in London, the argument will finally be reinforced by investigating how this new London Underground line, built with the priority above all, was planned for the Docklands development, especially the new financial centre Canary Wharf, for regenerating London and maintain its status on the top level of global cities; also, how the architecture of its stations contribute to the making of London's city image of globalisation.

Introduction

This is an age of image, also an age of competition. In the age of globalisation, these two interweave to each other and exist as one of the outcomes of the process of the global economy. Globalisation was driven primarily by the integrated global economic activities, and then diffused to cultural affairs.

The trend of the globalisation causes a hierarchy of cities that involve into the global economy.[1] For some of these global cities (or world cities) on the top level of the hierarchy, such as New York, Tokyo and London, they are the nodal points for the coordination of the global economy.[2] Then the competition among the cities in the global economic system emerged, due to their struggle for better positions and putting themselves in a higher hierarchical level.

Thus, such a process causes a series of new concepts of the urban development. Cities now orient towards the management and marketing, which take the place of traditional urban planning paradigm that derived from the problems of the industrial revolution since the nineteenth century[3], and that from social movements since 1960s.[4]

A bigger influence to the urban planning is taken by this change. Although many of the traditional planning tools and means are still prevalent, the goal and objective of the planning has mostly shift to the notions of management, marketing and promotion. Competitiveness is an essential merit nowadays that cities have to equip for the inevitable competition among them. The opponents are always there. The arenas can be global, regional or national.

The planning of the city then put its eyes on the competition and competitiveness. The outcome of such a new type of urban development then emerges some new types of urban landscape, which easily has some formulation: the new urban centre, normally for the international finance and businesses; the major cultural facilities as tourist attractions and the anchors for the regenerations; regenerations driven by the development for the site of the big international event like sports games. No matter the types of development, they are always accompanied by the construction of the new urban infrastructure, which not only make a better functional support to the new urban development, but also offer a great opportunity for building splendid architecture.

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[1] P. Hall, 1984. *The World Cities*. 3rd ed. London: Weidenfeld and Nicolson; and J. Friedmann, 1986. The World City Hypothesis. *Development and Change* 17 (1):69-83.
[2] S. Sassen, 2000. *The Global City: New York, London, Tokyo*. 2nd ed. Princeton, N.J. and Oxford: Princeton University Press.
[3] P. Hall, 1988/1996. *Cities of Tomorrow*. Oxford: Blackwell.
[4] M. Castells, 1983. *The City and the Grassroots*. London: Edward Arnold.

Image is important to a city when trying to promote itself and compete with the other ones and reach a higher status in the networks of global economy. Meanwhile, architecture is one of the key elements for building the city image, which truly needs some visual and concrete factors to catch people's attentions and make them believe. Among the architectural elements, the urban infrastructure, by being built as architectural attracting objects in the city, can play a significant role for urban architecture and shape the city form as the spatial framework for urban landscape.

This paper aims to investigate how these major urban infrastructure projects work for the building of the city image in the age of globalisation. That is, what a significant role of the urban infrastructure can play functionally to making a global city; how urban infrastructure plays as *raison d'etre* for urban architecture and key elements of urban landscape that make the key urban spatial framework; and how the urban infrastructure symbolically creates, with the architectural design and the spatial form, a milieu of global city, represents the sense of globalisation, and through the process an image of the city is built. For making the concepts and argument more evident, the Jubilee Line Extension (JLE) project in London will be adopted as the case.

The argument starts form a phenomenon that architecture plays an essential role for the city image making. Among the architectural elements, the urban infrastructure works with striking architectural design stand as the significant components. Next, it moves to the exploration of the nature of city image and its mechanism, as well as the answer why city image become more and more important to the city in the age of globalisation. Followed by the story of JLE project in London, the argument will finally be reinforced by investigating how this new London Underground line, built with the priority above all, was planned for the Docklands development, especially the new financial centre Canary Wharf, for regenerating London and maintain its status on the top level of global cities; also, how the architecture of its stations contribute to the making of London's city image of globalisation.

Part I. Globalisation, City Image and the Urban Infrastructure

1. City Image in the Age of Globalisation

1.1 Cities in the Global Economic Network

The trend of the globalisation changes the mode of the production of the space in the city. In such a post-industrial society, the image making of the city then is very much to do with the competitiveness among cities, especially those in the net work of global economy, so called the 'global cities' or 'world cities'.

The World Cities (1984) by Hall should be considered as the pioneer research on the urban developments of several primary cities in the world economy. Yet the integrated and comprehensive concept of the world city was initiated by Fridmann. In his paper *The World City Hypothesis* (1986) he not only claims the term and concludes its characteristics by examining many discussions and theses on this new urbanisation linked to the global economy, but also suggest the concept as 'a framework for research and…a starting point for political enquiry.'[5] Then the notion followed by a great numbers of researches on this theme. There are Knight and Gappert's edited work (1989), focusing on the global cities and covers as many urban aspects as possible; King (1990b) reviews how the globalisation of imperialism and colonialism created space, and emphasises the historical context for forming the present globalisation; his another work (1990a) focuses on the same point but takes London as the core concern; a essay collection edited by Knox and Taylor (1995) discusses issues of city vs. state, core and periphery, multiple national corporations (MNCs) and urban hierarchy, as well as transports; David Clark (1996) investigates the urban development on the globalisation as the context, with issues cover characteristics of the world cities, urban societies, and urban lifestyles; Short and Kim (1999) examine the globalisation and the city from different aspects such as economy, culture and politics. Among these numerous works, Saskia Sassen's *The Global City* (1991/2000) significantly marks the nature and hierarchy of the global cities, and how they work as a alliance in the global economic network.

Two main characteristics of global cities may be manifest concluded from these works: the hierarchy of the cities in the network, and their capability of controlling this network economy. They are interweaving with one another and drive two new trends for the development of the global cities. The hierarchy pushes cities into a competition in order to reach higher hierarchical positions, while the controlling concern conduct the cities aiming to promotion and marketing for gaining more resources like investments, immigrants and

[5] J. Friedmann. "The World City Hypothesis." *Development and Change* 17, no. 1 (1986): 69-83.

technology. Thus in the age of globalisation, the marketing/promotion and the competitiveness of the city then become the main tasks of the cities. The building of the city image then should certainly cooperate with the tasks. For the urban marketing and competitiveness, image of the city can be a media, instrument, and even a goal.[6]

1.2 City Image as Promotion/Marketing

In the post-industrial era, marketing and promotion become the main streams of the economic activities. Since cities' developments inevitable rely on the economic prosperity, the marketing and promotion are emphasised more and more in the urban development and management. City image building then plays an essential role in such a marketing city notion.[7] With the same idea in the business marketing, the urban image and its transformation are specifically significant when cities try to develop and promote themselves.[8] In a very direct sense City marketing/promotion aims to attract tourists, who bring currency to spend in the city; and immigrants, who vitalise the real estate market; and investments, which bring capital for urban economy.

Nonetheless, the reason more significant, and somehow not just so direct, is that the aim of the promotion is indeed for increasing the economic performance, or more precisely, the capability of control in the world economy. There are several factors that derived from the city's promotion or marketing and do affect such capability. To begin with, city marketing helps drawing immigrants. The world cities with economic and political significance are all the conglomerations of huge urban population, and contain a significant proportion of the richest members of the community, which firstly led to the development of luxury industries and shops; then they have been joined by new type of trading when getting more affluent. Furthermore, there would be certain related industries emerged.[9] A large population causes a big market, demanding large consumptions of goods and all kinds of services. Cities with huge population mean the merit of investments for the private sectors. Meanwhile, for public sectors, they are politically primary cities, which have priority to receive state's investments and even the international loans to develop their infrastructure for achieving global cities.

Secondly, the city marketing mainly targets on the industrial investments from big

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[6] Many researchers also discuss the relationship between image and city marketing/promotion and competitivess. See Ashworth and Voogd, 1990; Bendixson and Platt, 1992; Kearns and Philo eds., 1993; Smyth, 1993; Paddison, 1993; Brownnill, 1994; Gold and Ward eds., 1994; Bramezza, 1996; Eade, 1997; Ward, 1998; Kotler et al. 1999; Wu, 2000; Urban Affairs and Patteeuw eds., 2002.

[7] P. Kotler et al., 1999. *Marketing Places Europe: How to Attract Investments, industries, residents and visitors to cities, communities, regions and nations in Europe*. Harlow, Eng.: Pearson Education Ltd, p.51-55.

[8] T. Hall. *Urban Geography*. London and New York: Routledge, 1998, 110-113.

[9] P. Hall. *The World Cities*. 3rd ed., 1984, p.2.

enterprises, which bring capital, technology, and job opportunities into the city. In Castells' words, these international business giants are the main sources of flows of capital, accompanied by that of information, technology, and even knowledge, which can really help a city to develop its economy and then compete with the other opponents.[10] Then a cycle may happen as the following sequence. A city (in fact most of them has already become metropolises)[11] with a large population, good urban functions, technology capacity of potential, efficient bureaucratic system and geographic location is capable to attract better investments. Such investments push urban economy ahead; hence the city may have opportunities to improve their infrastructures, environment and living conditions. Then a better-improved city can further attract more investments. For marketing, city image is one of the keys to turn such a good cycle.

As Ward claims that this type of competitive ethos of selling place has permeated urban public affair through the world and become the mainstream idea in the urban management. It modifies or even supplants other policy concerns.[12] Many studies focus on the related issues and lots of them do conclude the involvement of the city image. Ashworth and Voogd (1990) regards the city marketing, with the image building and promotion of places, as a planning tool. Smyth (1993) claims that the marketing city plays as the main idea of urban regeneration, by adopting the concept 'flagship' development as the leading project to shape a new city.[13]

In such a process, one of the key factors amalgamated with the flagship development is the city vision, which indeed plays similarly as image of the city. Eade (1997) studies how the image of locality matters in the two of the London's redevelopment cases. Hall (1998) argues that the making or transforming of the city image is the theme of the urban place promotion, which cares not only the business, but also lifestyle.[14] Kotler et al. (1999) investigate the notion and the cases of marketing places in the European cities. In addition to stress the relations between the urban images and place marketing, he clarifies that the urban image can be positive and negative, and hence there is a way to measure the image,

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[10] See M. Castells. *The Rise of the Network Society*, *Information age: Economy, society and culture*. Oxford: Blackwell, 1996, pp.378-9; Borja, J., and M. Castells. *Local and Global: The Management of Cities in the Information Age*. London: Earthscan, 1997, pp.12-3.

[11] The developments of global cities tend to be getting larger in terms of scale, and shaping a local/regional network. A new concept of 'global city-region' has been raised by a group of geographers in UCLA. See A. J. Scott. ed. *Global City-Regions: Trends, Theory, Policy*. New York: Oxford University Press, 2000.

[12] S. Ward. *Selling Places: The Marketing and Promotion of Towns and Cities, 1850-2000*. London: E & FN Spon, 1998, p.1.

[13] H. Smyth. *Marketing the City: The Role of Flagship Developments in Urban Regeneration*: Spon Press, 1993.

[14] P. Hall. 1998, pp.110-132.

and the most important, image can be designed and distributed.[15] Vermeulen (2002) points out the importance of the image of the city in city marketing, and also how important the major architecture is.[16]

Kearns and Philo's collection of essays *Selling Places: The City as Cultural Capital, Past and Present* (1993) presents a multi-dimensional issues on marketing city. Many essays in this book show the interrelationship between the city image and place promotion. Among them, Crilley uses developments of London's Canary Wharf and New York's Battery Park City as cases to discuss how architecture becomes a form of advertising of city; Holcomb studies the de-constructing and re-constructing the image of the industrial city; Lowe explores the image of the entrepreneur in local regeneration; Goodwin examines the images have been adopted and intersected in two British urban regeneration; Kearns, by investigating Mitterand's using architecture -- the large scale urban project -- as the main component of the new Paris, suggests that the urban event as a promotion and the spectacular urban landscape as a image building.

1.3 City Image as the Competitiveness

The hierarchy of the global cities, which refers to the control capability of the global economy, draws the competitions among the global cities. One of the hottest issues then is city's competitiveness, which depends on its capabilities of providing services (from governments, and for business) and attracting investments.[17] Though existing at the levels of firm, city, region and nation, the notion of competitiveness seems emphasised more by the public domains such as nation states and cities, which reveal an issue related to politics, rather than the private firms. As Castells claims, 'competitiveness is an attribute of economic collectives, such as countries or regions, rather than of firms, for which the traditional, and rather complex, notion of "competitive position" seems to be more adequate.'[18] Stephen Cohen et al. defines that 'Competitiveness at the national level is based on superior productivity performance by the economy and the economy's ability to shift output to high productivity activities which in turn can generate high levels of real wages.'[19] As collective bodies, city shares very similar nature with nation.

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[15] Kotler et al. 1999.
[16] M. Vermeulen. "The Netherlands, Holiday Country: Introduction." In *City Branding: Image Building & Building Images*, edited by Urban_Affairs and Veronique Patteeuw, 8-17. Rotterdam: NAI Publishers, 2002.
[17] Borja and Castells. *Local and Global: The Management of Cities in the Information Age*. London: Earthscan, 1997, p. 14.
[18] Castells, 1996, p.86-87.
[19] Castells cites S. Cohen et al. *Global Competition: The New Reality,* vol.III of J. Young (chair), *Competitiveness. The Report of the President's Commission on Industrial Competitiveness*, Washington D.C.: Government Print Office, p.1. See Castells. 1996, p. 87.

The phenomenon of competition in the global economic network evidently expresses as all kinds of rankings. Many organizations, institute and media bodies carry such ranking investigations with great interests.[20] As those for firms[21] and nations[22], the ranking for cities rose as a new trend and becomes notable. For example there is *Asiaweek* magazine's *Best Cities in Asia*, in which the major Asian cities are ranked. The ranking bases on a series of indicators, which carry different scores according to the weighting in the various categories: economic conditions, quality of education, law and order, housing costs, healthcare and sanitation, the environment, transport and communication, and leisure.[23] The others are those within a single country, such as 'the Chinese cities of competitiveness' by *Economy Monthly*[24], as well as the 'Best Cities' in the United States by *Forbes*.[25]

Most of the books about globalisation or global cities would mention the issue of competitiveness, since it is one of the key characteristics in such a global economic network system. Among these, Castells' work *The Rise of the Network Society* (1996) describes in details about the nature of competition and competitiveness in the global network. He clearly addresses that 'the structure of the global economy is produced by the dynamics of competition between economic agents and between locales (countries, regions, economic areas) where they are situated.'[26] Syrett and Baldock's edited book *Governing London* (2001) makes diagnosis and prescriptions for London's regeneration and

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[20] At the national level, two ranking about nations' economic competitiveness have been often mentioned and used as references. One is *Global Competitiveness Report* (GCR) by World Economic Forum (WEF) in Geneva, another is *The World Competitiveness Yearbook* (WCY) by International Institute for Management Development (IMD) in Lausanne. Besides these two famous annual assessments, Japan Center for Economic Research (JCER) has *Potential Economic Competitiveness Ranking* for 31 nations and regions of Asia and Organization for Economic Co-operation and Development (OECD).

[21] For the famous ranking of enterprises, there are *Fortune* magazine's 'Fortune 500' and 'Global 500' –500 largest corporations in the US and the world; also *Forbes* magazine's 'Forbes 500'. See the websites of *Fortune* magazine (http://www.fortune.com/fortune access 05/07/2003) and *Forbes* http://www.forbes.com/lists/ (05/07/2003).

[22] Two ranking about nations' economic competitiveness have been often mentioned and used as references. One is *Global Competitiveness Report* (GCR) by World Economic Forum (WEF) in Geneva, another is *The World Competitiveness Yearbook* (WCY) by International Institute for Management Development (IMD) in Lausanne. See the webpage 'Goal Competitiveness Programme' in the Word Economic Forum http://www.weforum.org/site/homepublic.nsf/Content/Global+Competitiveness+Programme (access 05/07/2003) and *The World Competitiveness Yearbook 2000* (http://www01.imd.ch/wcy, access 05/07/2003) of IMD (http://www01.imd.ch, access 05/07/2003). Besides these two famous annual assessments, Japan Center for Economic Research (JCER) has *Potential Economic Competitiveness Ranking* for 31 nations and regions of Asia and Organization for Economic Co-operation and Development (OECD). See JCER website (http://www.jcer.or.jp/eng/, access 05/07/2003).

[23] See 'Best Cities in Asia' in the *Asiaweek* magazine website (http://www.asiaweek.com/asiaweek/features/asiacities2000/, access 05/07/2003)

[24] See *Sina finance* website http://china.sina.com.tw/finance/nz/2003city/index.shtml (access 05/07/2003)

[25] See *Forbes* website http://www.forbes.com/lists/ (05/07/2003)

[26] Castells. 1996, p.103.

reinforcing its competitiveness in the global competition. The major concern is how the competitiveness can be achieved by the institutional and policy reform in London. Among essays, Gordon's re-examining the meaning of the city's competitiveness is truly a notable one.[27] Kearns and Philo's *Selling Places* (1993), as mentioned, is about image, marketing/promoting places and regeneration. However, all the essays in this collection are placed in the same discourse: the places do indeed become 'commoditised', regarded as commodities to be consumed, which indeed derived from the idea that cities should be regarded in the sense of competing against one another for the social and economic opportunities rather than just places.[28] Bramezza (1996) focuses her study on how city's competitiveness associates with the urban functions, and how these two factors can be achieved by the urban management.

Similar as the image for industry's competitiveness[29], competitiveness is at least a major component of, if not equal to, the image of the city, especially the city in the global economy and its culture. The city ranking is actually about the city marketing operations, in which the image of the city expresses the attractiveness of the city in the sense of its growth and relates to the level of the quality of life.[30] In other words, city image is one of the key conditions of city's competitiveness, while a certificated competitiveness is an award medal for city's image. Competitiveness is treated as kind of the synthesised performance of the city, whereas not many people can really investigate all the categories of performance by items. Hence, competitiveness, though described and ranked according to series of indicators, is very much to do with the image of both the city and state, which the impression does matter rather than what the reality is. It becomes another type of urban discourse, and one of the abstract representations of the city.

1.4 City Image and Competitiveness: Discourse of the Global City

The city marketing and its competitiveness are articulated each other in the context of the global economic network. The marketing and promotion of the city aim at increasing the competitiveness of the city, for its position in the hierarchy and the controlling capability. Likewise, the competitiveness does help the marketing and promotion of the city. In such a basis, image or image making indeed interacts with this mechanism. A good image can facilitate the marketing, while the city marketing do utilise the image to create an attractive

[27] I. Gordon. "Unpacking 'Competitiveness' as a Governance Issue for London?" In *Governing London: Competitiveness and Regeneration for a Global City*, edited by S. Syrett and R. Baldock, 23-34. London: Middlesex University, 2001.
[28] G. Kearns and C. Philo. eds. *Selling Places: The City as Cultural Capital, Past and Present*. Oxford and New York: Pergamon Press, 1993, p.18.
[29] M. E. Porter. *Competitive Advantage: Creating and Sustaining Superior Performance*. New York: The Free Press, 1985, p. 210, 508.
[30] Borja and Castells. 1997, pp.209-211.

vision. In the same logic, a positive image may actually enhance the competitiveness of the city, while at the same time competitiveness itself can really form a very important part of the image.

The significance of this three-dimension interplay leads to the social production of the space. It is called 'social' because the production bases on the economic, politic and cultural factors. Economically, in this age of the global economy, good cities with better lifestyles for 'citizens' need to secure their economic capacity, which means almost no exceptionally cities need to link themselves into the global economic network. Following the idea, the city's competitiveness is truly essential, with certain means of promotion the city should be able to attract investments, human resources, technology and international visibility (in media). To achieve the promotion, and then for the competitiveness, the urban development policy and city planning should aim at such an idea in a large degree. This is actually the direct outcome of the production of the space, in the functional and explicit level.

Nevertheless, another significant mode of the production of the space, which works at the level of culture and specifically on architecture and aesthetics, is about the aesthetic values of the spatial form. This is an undermining process, progress with gentle and implicit ways, however, deeper and more influential. For example, some formal value that associates with nature of globalisation, such as 'innovative', 'high-tech' and 'fluid', is forming the mainstream idea of architectural aesthetics. Both of these two dimensions refer, explicitly or implicitly, to the urban politics, in which the norms, principles, distribution of the resources, and the power are generated.

In this sense, image is not just about the production of space, but the formation of the discourse, an even more critical and significant societal factor. The demand of the competitiveness leads a city to achieve itself as 'a good city', and certainly a good city should equip with 'good spaces'. Then, the classic problematic queries arise once more. 'What type of good space?' 'What type of good city?' and 'Whose city it is?' Through these questions, such 'goodness' is no more universal if examined by the viewpoints from various classes and groups in the city. It is exactly a discourse, in which the values and interests are packed together with particular formal elements and communicating from some groups (usually relatively small portion of people) to the others.

Being an urban discourse, the marketing-competitiveness *duad* is where the urban development orients and the issue that urban development concerns. It is important but not many people care why, how and for what it is important. It becomes a belief needless to explain, a doctrine that the urban management must achieve, and the topic that the

politician notably concerns. Its contents, significance and implication can only be examined by researchers, or those who feel dissatisfied with the ranking results.

2. Urban Infrastructure for Global City and City Image

2.1 Urban Infrastructure and the Global City

Global cities are emerged by the global economic system and characterised as the positions of control, and also on the top of the urban hierarchies of their own nation-states.[31] Global cities then are shaped by a combination of trends of spatial dispersion and global integration, function in four ways in the world economy: first, as concentrated command points; second, as key locations for services, which have replaced manufacturing as the leading economic sector; third, as sites of production, including the production of innovations, in these leading sectors; fourth, as markets for the products and innovations produced.[32]

Castells' theory, which also shows such a nature in the global network society/economy, focuses not only on the world economy, but also explores most spatial aspects from a sociological perspective. He suggests a concept of the new spatial forms and processes named 'the space of flows', emerging under a structural social transformation towards the informational society. The flows to which he refers can be those of capital, information, technology, organizational interaction, image, sound and symbols. They are "the expression of processes dominating our economic, political, and symbolic life."[33]

In this theory, the global economy is conceptualised as network while the global cities as nodes and hubs, which are hierarchically organized according to their relative weight in the network.[34] But as Sassen does in global city theory, Castells reminds us that, "such hierarchy may change depending upon the evolution of activities processed through the network."[35]

If global economic system is actually the dominant force to the network society as Castells suggested, and the global cities do play as hubs and nodes of exchanges and production of services in this network, the urban infrastructure then is the essential instrument that supports all the flows in the network. All the flows either rely on the telecommunication system or the transportation. The former is the travel of electronic impulses, while the later

[31] Sassen, *The Global City*, 1991, pp.4-10.
[32] Ibid, pp.3-4.
[33] Castells, 1996, pp.411-2.
[34] Ibid, p.413.
[35] Ibid.

is that of the others, such as agents, human resources and goods. Without urban infrastructure all these travel of flows cannot be properly achieved.

However, the hierarchy of global cities as the positions of hubs and nodes in the network may change, as Sassen and Castells suggest. "Such hierarchy may change depending upon the evolution of activities processed through the network."[36] The possibility of the change of the hierarchy causes the competition among cities. In order to reach the position that can control rather than be controlled, cities need to develop and increase their competitiveness so that they may keep the economic advantages in the world economic network. Then the competition of the global cities can be the competition of the better supply of urban infrastructure system, since many other key conditions, like geographic location, natural resources, qualities of human resources and political stability, are impossible or very difficult to change. That is because when considering about the competition, the more accessible for the flows to/through the city, the more competitive the city can be. Therefore, building a good urban infrastructure system becomes a primary issue if a city really wants to compete with the other opponents.

The idea of the flows for infrastructure is, in a substantial sense, actually the transports to the economic activities. The better transports, including the electronic mode, may enhance a city's capabilities as a hub and node, for the exchange and management of the flows.

2.2 Urban Infrastructure and City Image

Symbolically, the relation between the global cities and their urban infrastructure reveals in the form of the architecture, which shapes the visual and spatial elements of the city image. For the reason of supporting the urban functions and economic activities, urban infrastructure is indeed the *raison d'etre* of the grand architecture of the city.

For making the image of global cities, there are several types of development and construction which can be regarded as formulas that shape the urban landscape as the formal factor. The first type is the new urban centre, normally the financial and business one, with a cluster of high-rise towers and at least one landmark structure or skyscraper. This is probably the most wanted if the city has the economic condition, business space demand and ideal land for development. The second type is the other mega-projects, which usually consist of multiple uses (commercial, residential…) and can make dramatic changes to the city. The chief developer of these projects may be the government but mainly the private sector or the public-private-partnership. The third type is the urban cultural facilities, including museum, gallery, theatre, stadium and the other civil and educational buildings of large scale. The fourth type is the urban infrastructure, which

[36] Ibid.

covers widely from airport, main railway station, seaport, urban metro to bridge.

Having some types of urban infrastructure is absolutely important to a global city, because that is the fundamental requirement for the economic flows. However, it is more important to make these projects visible if considering the city image. What is more, in order to communicate some idea, the urban infrastructure constructions should be not only visible, but need to be eye-catching and expressive. Take urban metro system for example, it should be an underground system due to the maximum efficiency and the minimum occupation of the above ground space and disturbance of the other urban activities. Hence its stations, the only objects that need to be above ground, become the principle structures going to be seriously expressed. In some cities, the metro systems are even built high elevated in the city centre. The original idea was just making the projects visible.

The urban infrastructure has its long history as urban symbols. In the eighteenth century, the urban primary transports architecture, such as the main railway stations and general post offices, has been monumentally designed. Some giant bridges even date to eighteenth century. In the early industrial societies, their status as urban architecture were not less than the cathedrals in the medieval time, and even more significant than the churches built in the same period of time.

Now we know how important the urban infrastructure is as it works for the city image and urban landscape. The questions we should ask further then are: what do they express as urban symbolism, and how? What is the symbolism and image relate to a global city and the sense of the globalisation? In the next chapter, the case of new London Underground (metro) line project, the Jubilee Line extension, is going to answer the questions.

Part II. Urban Infrastructure Project for Making New City Image and Re-vitalising a Global City: JLE London

In May 1999, The Jubilee Line Extension (hereafter, JLE), the first major addition to the London Underground since the Victoria Line was built in the late 1960s, was finally completed and officially started to operate. The planning process, together with a great deal of arguments and debate, lasted nearly 50 years. The project takes 7 years (18 months late), costs £3.5 billion[37] – nearly double of its 1992's £1.9 billion budget[38] – and a long list of other troubles.[39] The new line extends 16km from the Green Park Station on the existing Jubilee Line, and proceeds eastbound through Southbank, North Southwark, Docklands and east London Newham. Among the eleven stations, six of which are completely new and five have been substantially enlarged or rebuilt.

Being an extension of the existing line and one in the old system, JLE was made different by the architecture of its stations, which provide a brand new vision for the old system to Londoners. The design schemes with drawings and models caught a lot of medias' eyes when they were shown to the public first time in 1992 (in the Architecture Foundation). The innovative designs did attract the public support the project. More attentions, however, were paid even when the construction of the stations completed. The JLE project appeared in almost all domestic media and many international ones. Then the station buildings became the frequent winners of many architectural and civil engineering awards. The success of the line establishes reputations for those young and creative architects who participated in the project, and made the established participants even more famous. The chief architect, Roland Paoletti, then became a legendary figure in British transport and architecture.

1. JLE and the New London

1.1 Docklands and Canary Wharf Developments

The 1980s was the age of Thatcherism, which represented a retreat from the welfare state and managed capitalism toward the laissez-faire economy.[40] It was Thatcherism that,

[37] *The Guardian*, Jun 2000.
[38] There are many versions about the cost and budget. However, according to the official data, the sum of the original budget included £1.5 billion from Government and £400 million contributed by developer of Canary Wharf Olympic & York. See The Department of Transport News Release, *"Jubilee Line Extension Gets Go-Ahead/ Work Will Create 22,000 Jobs Nationwide/Big Boost for Docklands"*, press notice no. 427, 29 Oct 1993.
[39] "Tracking the troubles on the Jubilee Line Extension", *Evening Standard*, 4 Nov 1999
[40] The name came from the UK's prime minister then Margaret Thatcher. Another twin in the

accompanied by the development of technology, initiated Britain's entry into the new era of globalisation, while the Docklands development is a concrete product of this political and economic strategy in the UK.

London reached its status of the world's economic centre since the mid-eighteenth century.[41] The City was where the capitalist actors and institution in this world economy, such as exchanges, banks, merchants and insurance companies, located. They made and handled goods and all kinds of financial services.[42]

The rise of Docklands was due to City's inability to satisfy the demand for space. The docks were opened one by one from 1800 to 1855. However, the London docks experienced a crisis and had to close due to the total change of the shipping mode and its infrastructure and caused the decline of the old style shipping. As the Britain's economy was declining slowly, London lost its business, though its leading position in the world's economy was still kept until the mid-1980s.[43]

At that time, the problems were to save the declining economy of London and retain it status of a premier global city, and to reusing the abandoned properties of docks. Redeveloping the Docklands seemed the answer to both. The idea of possible redevelopment started as early as the 1950s. In 1973, five alternative futures were raised for the abandoned Docklands.[44] Yet, it was withdrawn in 1974 for two main reasons: one was the strong resistance from the dockers' communities; the other, probably more important, was that the Government had no money to carry out these plans. There was not any change until a new concept of urban regeneration "public-private partnership" was introduced from the United States in the 1980s. The London Docklands Development Corporation (LDDC) was established then, with the core project of Enterprise Zone on the Isle of Dogs, under the legislation to buy and develop lands as one of a series of steps to insure the private sectors' participation. Its other task was to encourage the local authorities to make deals with the private sectors.[45]

United States called Reaganism, named after the president at that time, the key figure who conducted such policies and strategies, Ronald Reagan.

[41] A. D. King, 1990. *Global Cities: Post-Imperialism and the Internationalization of London*. London: Routledge.

[42] P. Hall, 1998, p. 889.

[43] Ibid.

[44] They were: 1) Waterside: using river and dockland as a major water park; 2) Thames Park: new investment in low-density offices and industries; 3) East End Consolidated: a comprehensive industrial redevelopment with medium-density public housing; 4) Europa: an intensive redevelopment of housing and commercial offices; 5) City New Town: a 1960s new town concept with high densities, large new local centres, and the major increase in local industry. See P. Hall, 1998, p.893.

[45] P. Hall, 1998, p.911.

In 1982, the Docklands were gradually taking shape: the Isle of Dogs and the Enterprise Zone were designed, and the Docklands Light Railway (DLR) was lodged.[46] In 1987, Thatcher opened her election campaign at Canary Wharf. Then the Canadian developer Olympia & York officially took over the Canary Wharf scheme from the original developer later in the same year. A North American mode of development and planning-design style was adopted in the scheme.[47]

In 1989, JLE was proposed to support the transport to Docklands under the £400 million contribution promised by O&Y. Considering that the project would not be successful without a good transport, "the agreement was reach on a solution: the existing Jubilee Line must be extend into Docklands".[48] JLE was indeed regarded as "an underground lifeline for the economy".[49] The whole process went reasonably well, except for the financial crisis of O&Y in 1992.[50]

Canary Wharf was truly the flagship of Thatcherism; moreover, established for the epoch of globalisation. It aimed to re-building London as the world's economic centre, or at least to keep its position as one of the three world's financial centres, for which it was in competition with several European cities.[51] From that moment onwards, London would be transferred from a centre of goods making and goods handling to a centre of the new information and services economy.

1.2 Planning JLE

The JLE project has described as "50 years of planning". The initial idea of building a "new" NW/SE underground line arose in the years after the Second World War. 20 years later, the idea had taken shape as the Fleet Line scheme, presented in 1960s and usually regarded as the origin of the Jubilee Line and its extension. At the same time, its branch River Line was also proposed as part of a master plan.[52] According to the London Rail Study 1974, the Fleet Line was planned as four stages.[53] The significance of the plan was that the River Line was issued as a substitute of the Fleet line stage 3, and it is the first time

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[46] Ibid, pp.916-917.
[47] Ibid, p.921.
[48] Ibid, p.919.
[49] R. Tieman, "Building an underground lifeline for the economy', *The Times*, 29 Oct 1993.
[50] The crisis was due to the challenge from City's new regeneration action, also managed by LDDC and supervised under the same Government. Peter Hall gives a critical overview of the episode, see P. Hall, 1998, p.923-31.
[51] The strongest contender in the Europe is Frankfurt, the others are Paris, Munich, Brussels, Milan as well as Berlin. See Andy Thornley ed., *The Crisis of London*, Routledge, London and New York, 1992, pp.2-3.
[52] J. Willis, *Extending the Jubilee Line*, London: London Transport, 1997, p.7
[53] The first stage was from Stanmore to Charing Cross and was then under constructed; the second from Charing Cross to Fenchurch Street; the third from Fenchurch Street to Lewisham and New Cross Gate; and the forth from Lewisham to Addiscombe and Hayes. See J. Willis, 1997.

that London Underground ran eastward along the river to the Docklands and passed through Isle of Dogs and North Greenwich. Before then, the original Fleet Line never had such an extension. A fact may be notable: 1974 is the next year that the Docklands regeneration plan was first emerged. (Fig. 1)

As Jon Willis concludes, "Other than to take over part of the East London line through the Surrey Docks, serving Docklands was not seen as a major function of the Fleet line."[54] On the contrary, the River Line was focused on the regeneration of Docklands, to where its route stretched.[55]

In 1977, the first stage of the Fleet Line was completed and renamed the Jubilee line to mark 25 years of the reign of HM Queen Elizabeth II, while the River Line was still being discussed because the Docklands project had not been finally decided. As the redevelopment concept began to take shape, the realisation of the River Line became more important than the other stages of its source Fleet Line. When the decision of developing Docklands was made in 1989, none of the other three stages survived except for the branch River Line, which then became the JLE.[56]

A report to the Parliamentary Committee in 1993 could reveal the strong connection between JLE and Docklands redevelopment. It concluded that there were 11 key transport and planning benefits to the JLE. In these points, there were three about road transport problem solving, one about tourism, one about the improvement of the Underground system, and six about the district development. Five of the six district-benefit points focused on the Docklands.[57] We can then conclude that the JLE was an integral part of the plans for the development of the Docklands. This could explain why the Government gave permit for JLE to go-ahead and built it with a high standard of engineering and architecture, even though the financial condition was not good.

1.3 Roland Paoletti

Roland Paoletti, the 'Medici of the Underground'[58], is the key figure when mentioning about project. For JLE, he was the architect, for his job title the architect-in-chief, as well as the client, for his award of the RIBA client of the Year.[59] Being trained as an architect,

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[54] J. Willis, 1997, p.15.
[55] Ibid, p.18
[56] Ibid.
[57] JLE Project PR Department, *Benefits of the Jubilee Line Extension: A Summary*, Oct 1993, (Xerox copy of London Transport Museum)
[58] C. Slessor, 'Underground jubilation - design of the train stations of the Jubilee Line Extension in London, United Kingdom', in *The Architectural Review*, May 1999.
[59] See *London Underground* website, http://tube.tfl.gov.uk/content/pressreleases/0404/19.asp (access 7 July 2004)

Paoletti worked with Pier Luigi Nervi in Italy in his early professional period. Later he went to Hong Kong and work for the Mass Transit Programme there. Thanks to the success of the project, he was then invited by the president of London Underground for the JLE position.

Just like architects Frank Pick and Charles Holden to London Underground in 1930s, the credit of the late 1990s' LU should go to Roland Paoletti. He did not design any station by himself but conducted all the commissioned architects to achieve the project. He somewhat has the biggest credit. Different from the LU used to do, Roland Paoletti intended to put architects in a very important position of the project, doing "what they should do", which Paoletti thought was the key point to improve the qualities of the London Underground.[60]

However, a concise design philosophy with three key principles was also given by Paoletti to all the architects involved: first, to bring a perceptible sensitivity and designed ambiance to the public, through the use of natural light and clear spatial experiences; secondly, to manipulate these elements so they respond positively to the demands of security, durability and safety, bringing about the integration of structure, servicing, architectural layout and design; thirdly, to expose the civil engineering structure of the station box and platform tunnels in order to express the primary elements of construction and to provide clarity of material expression of all the other components of the station.[61]

The stations on this "lifeline" of the Docklands redevelopment are not really uniform. According to the location and the tasks they serve, these eleven stations can be divided into three categories: the stations in the central urban district, the stations in the residential communities, and the stations in the new urban centre.

2. The Stations in the Central Urban District

The stations of Green Park, Westminster, Waterloo and London Bridge are located in the central urban district. These stations sit at the centre of London as the most significant nodules of the transport network. They therefore reinforce the urban function, administration, business, entertainment, consumption and even education, by improving the connections between districts, which are like the different components of the city apparatus.

In addition, most of these stations occupy strategic locations; they then become the key

[60] 'The Role of the Client', in *Architects' Journal*, 3 Feb 2000, pp.34-37.
[61] K. Powell, *The Jubilee Line Extension*, Laurence King, London, 2000, p.73

points for city's extension. Apart from linking to one more line of Underground,[62] some of the stations even play as the city's connections to the world beyond the national boundaries. Waterloo Station is the one that link JLE and Channel Tunnel Railway and really one of the few main British gateways to mainland Europe. Green Park Station links Piccadilly Line westbound to Heathrow Airport; and links Victoria Line in the next station Victoria for Gatwick Express.[63]

2.1 The Juxtaposition of Old and New

These stations have been existed in the city centre for decades. It is almost impossible to build a brand new station. How to create the kind of space that is wanted within these limitations is the key issue for architects. One of the typical scenes in the stations of this type then is the juxtaposition of old and new. Waterloo and London Bridge, which use the existing structure, are the typical two cases. At Waterloo, the ticket hall locates in a Victorian brickwork 'colonnade', serving as the street gateway, connected to the mainline railway station and was previously the site of the bus stand.[64] A bank of escalators threading through the piers and foundations of the brick arches, leads passengers to the highly modern concourse and the platform. At London Bridge, the existing station was a huge site and already as complicated as a maze. The new JLE space then inserted into this huge site, and could not help separating it into two ticket halls. Just like Waterloo Station, here the escalators are also slotted into the existing brick arches and threaded between great Victorian buttresses. If using the main entrance, passengers will go into the ticket hall via a vaulted brick corridor. If from Joiner Street, they will pass a series of cross vaults like church's crypt, which lead them to main ticket hall with a line of utilitarian metal framework where all electrical services are contained. (Fig.2)

This is the standard architectural rhetoric for the stations in the central urban district: the juxtaposition of the old and new. The old brick structures function as an unmoving background for the moving modern element, which consists of well finished, metal glossed escalators, staircases and the utilitarian metal framework mentioned above. Most of these modern elements are designed like freestanding objects, and appear not to be attached to the old structures. The design gives them a more dynamic posture.

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[62] In Green Park there are Piccadilly Line and Victoria Line; District & Circle Line in Westminster; Northern Line (Charing Cross branch), Bakerloo Lines and Mianline service in Waterloo; also, another Northern Line (Bank branch) in London Bridge. However, the characteristic is not unique to the JLE but shared by many stations in the central urban district.

[63] Another station which plays as Britain's gateway but not in the city centre is Canning Town station. It links by shuttle bus to London City Airport, which is planned specifically for efficient business travel among European cities. People work in Canary Wharf may reach London City Airport in a short time, finish check-in procedure in 15 minutes, and arrive any cities in Europe within 3 hours.

[64] Powell, *The Jubilee Line Extension*, p.31

A similar scene also appears in Westminster Station, though a totally rebuilt one, which also forms the foundation of the new Portcullis House at the same time.[65] The huge structural columns and beams play the fundamental setting, while the eye-catching, self-supported escalators and staircases move within the giant concrete box are the main objects. The things different are the materials of the main structures, one is brick of hundred years; another is reflective and sand-blasted concrete.[66] (Fig.3)

2.2 Visibility

Another is the visibility, which is not merely about what can be seen, but also to create a "visible" station. It is more significant for the stations in the central urban district because here the station had to be buried deep underground and merged in the urban context. The significance is that the architects made the station as visible as possible even in such a condition. As pointed out, the decision of the site and design for ticket hall were taken with the intention of "giving both the Underground and Waterloo Station generally a street presence."[67] Especially when the night falls the lightened interior shows as a signboard of moving images on the street, a signboard framed by the old structure.

Such a visibility exists not only from the outside, but also from the inside, in order to make the street scene part of its space. The London Underground shaped its intention of seeing the world as well as being seen from then on, and started to get rid of its reputation for gloom.

2.3 Remodelling, Renewal, Rebirth

The juxtaposition of old and new, together with the visibility, reflects the sense of the "remodelling" of the system. The stations in the central urban district are all busy in everyday commuting and familiar to citizens. The change will easily be noticed, especially in some of stations before JLE came were disliked corners in the city, for example, the entrance of London Bridge Station in Joiner Street.[68] The passage can be used by people, however, is definitely not the same as that of 160 years ago. It has been renewed, with futuristic devices and a brand new image and meaning. It stands out as a symbol of rebirth.

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[65] *Building*, Fri 14 Feb 1997.
[66] "Going Underground", in *Architects' Journal (AJ)*, 3 Feb 2000, p.27
[67] Powell, 2000, p.31
[68] As Powell describes, 'Today, it is hard to believe that Joiner Street ever carried traffic. It has been redeemed from years of grime, cleaned, lit and animated, a triumph of beneficial reuse. From the underground ticket hall, passengers can pass across the recast, newly paved street and up escalators to the Kent Line. Via a long-abandoned, but now reopened, route through the vault to the east, they can access escalators or a lift up to the terminal platforms, using, ironically, a route used by passengers 160 years ago.' Powell, 2000, p.59

2.4 Believing the System

The Westminster Station was designed as a giant machine, in which people may feel the London Underground keeps moving and works very well. The aesthetic expression of the architecture gives the 'machine' a sense of high quality,[69] and an impression of 'a system does work well'.

What do the designs and experiences reveal? In brief, it is to rebuilding the confidence to the system, where 'the system' can be defined narrowly as the London Underground, or in a much wider definition, as capitalism. A well-operating transport system is essential for the economic activities. The old and shabby transports cannot satisfy the image of high efficient economy, not to mention to offer the physical functional support. Londoners often complain their Underground system, which once helped the city becoming the centre of the world economy and brought pride to the citizens. But now its need to be improved is also a reality. The JLE stations in the central urban districts are tasked to rebuild the image of the LU system and to re-establish people's confidence to city.

3. The Stations in the Residential Communities

The second type of station is that in the residential communities, which includes, Southwark, Bermondsey, Canada Water, Canning Town, West Ham and Stratford. All these stations are newly built, because the LU has never reached some of these communities.

Among these stations, Bermondsey is probably the most proper case for discussion. The architect Ian Ritchie was the one that Paoletti first thought about, and the station is also his favourite.[70] The Station was designed on two main objectives under Paoletti's principles: the maximum utilization of natural light, and the creation of a clear, immediately comprehensible space.[71] The structure above ground is a glass shell with a curved shape gently opened to Jamaica Road at street level, "making a visible link to the invisible structure below."[72]

Located in the residential districts, Bermondsey has its structures above ground like most of the stations in this category, and that made its architectural forms able to be seen as part of the landscape so as to mark JLE's appearance in the urban context. However, it is not merely this presence that makes the Station as "visible" as a significant object, but also,

[69] Just as I remember that a certain auto magazine describes about good car: you can tell a good car from the engine room, which must be compact, well designed and all the components must be laid out excellently.
[70] Powell, 2000, p.72
[71] A. Rocca, *Ian Ritchie: Technoecology*, Whitney Library of Design, New York, 1998, p.11
[72] "Going Underground", *Architects' Journal (AJ)*, 3 Feb 2000, p.31.

and perhaps more essentially, its form and the transparency of its construction.

A curved high-rise commercial building and two similarly shaped ventilation shafts constitute its aboveground form, which makes the Station looks 'distinguished' among the brick-housing neighbourhood, and the glass roof "sweeps up toward Jamaica Road to become a highlight on this drab thoroughfare."[73] The quality of transparency is based on the Station's glass shell, which takes up four fifths of the building site above ground. A translucent glass roof is the most important element of the building form, which not only makes the building visible, but also creates its characteristic interior. It takes in daylight, directed by vertical metal bladed panels under the roof, filling the ticket hall and even six stories down to the track level as well.[74] At night, the lighting of the Station makes the glass box improve the immediate urban environment.[75] Inside the station, giant sets of the concrete beams are certainly the structural necessity, but it is the major aesthetic object of the Station as well. Together with the glass box above ground and the natural light, they form the theme of the architecture.

3.1 A Promise to the Local Community

"It goes far beyond Canary Wharf," [76] then what is its further purpose? When JLE was decided to pass through these communities and extend westerly to Stratford, the intention was the regeneration of these districts as the by-product of the JLE project. This is particularly so for the Southwark and Bermondsey Stations, since they are close to the city centre but were not served by Underground; and also to them the regeneration was the big issue.

A promise of regeneration was likely brought by JLE project and encouraging. However, it was even stressed by the architecture. In the case of Bermondsey, for example, making a statement of regeneration was an intention from the architectural design stage:

> It has been built primarily as a local amenity, a neighbourhood station. Yet it is a decisive architectural statement – a statement about the power of the Underground to regenerate and redefine entire areas of the capital, and a reassertion of Bermondsey's place in the life and culture of London.[77]

And certainly, the intention has been carried out through the making of the architectural form,

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[73] Powell, 2000, p.73
[74] "Bermondsey, Jubilee Line Extension, London", *Architectural Record*, vol.188, no.3, Mar 2000, p.134
[75] A. Rocca, *Ian Ritchie: Technoecology*, Whitney Library of Design, New York, 1998, p.11
[76] J. Glancey, The *Independent* Wed 21 Oct 1992, p.17 [architecture]
[77] Powell, 2000, p.72

> The idea of transparency was to be pursued in the design of the surface building, which London Underground wanted to be highly durable, and equally, a visible contribution to the regeneration of the area. These ideas had to be integrated with, and balanced against, basic engineering priorities.[78]

As promises, it is important to make sure that the stations can be seen, and look distinct and advanced within the communities. As Roland Paoletti commented, "We made Bermondsey a special station precisely because the environs were not."[79]

However, all these promises are ultimately connected to the Docklands development, for both functional and symbolic reasons. This is why the London Underground Limited insisted the station should locate on Jamaica Road. Functionally, "Jamaica Road is now a teeming traffic artery which frames a distant view of the Canary Wharf tower."[80] Symbolically and probably more significant, the Canada Square Tower of the Enterprise Zone is standing at the east end of Jamaica Road. Coincident or not, the new Station and landscape have linked the community firmly to the Docklands in their everyday life. (Fig.4)

4. The Stations in the New Urban Centre

The size and the capacity of Canary Wharf and North Greenwich Stations are due to the roles they play, the Canary Wharf is economic and financial while North Greenwich is recreational and ceremonial in the Docklands redevelopment.[81] Hence these two stations are expected the huge numbers of visiting. If for economic development, the Canary Wharf Station even stands out from all the stations. The JLE official journal defines its position, 'Canary Wharf is only the second largest station on the Jubilee Line Extension – North Greenwich is dimensionally bigger but Canary Wharf is more spacious. It is probably the most prestigious, and certainly the most important. Without it, the Extension itself would not have been conceived.'[82]

To serve the most successful and rapidly expanding business districts in Europe, [83] Canary Wharf Station has to be built in a considerable scale, and indeed it is.[84] The Station used

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[78] Ibid, p.73
[79] "Bermondsey, Jubilee Line Extension, London", *Architectural Record*, vol.188, no.3, Mar 2000, p.134
[80] Powell, 2000, p.72
[81] The Millennium Dome above the North Greenwich Station was designed and built for the ceremony of the new year of Y2K.
[82] *Jubilee Express*, issue 8 (Dec 1997).
[83] The station was designed with the capacity to handle a predicted 16,000 passengers per peak hour in early years. Then in year 2001 there will be 40,000 passengers an hour, making it one of the busiest on the Underground. See Willis, *Extending The Jubilee Line*, p.62.
[84] It is about 35 metres wide 27 metres deep and 313 metres long, as long as Britain's tallest tower next to it. See *Foster and Partners* website, http://www.fosterandpartners.com/news/20-09-99.html,

the former West India Dock, for that the water in the dock, totally 600,000 tonnes, had to be drained completely to make room for the passenger concourse and other spaces.[85]

In the Station, twenty banks of escalators to carry passengers to the ticket hall and then down to platform level. The architect aimed to create a single, clearly defined route for passengers, which minimises the need for directional signage. Ticket machines, administrative offices and shops are housed along the sides, leaving the central space clear for passenger movement.[86]

The main architectural objects in the ticket hall are the reinforced-concrete elliptical columns and the streamlined shaped ceiling, which are cast on site and have a natural finish. Both of them recall the Foster's favourite theme: flying. The columns, which stand from platform level to the roof, been kept slender and were designed for high performance, including being capped by bearings to allow for a degree of movement.[87] The ceiling/roof was designed as wings with lined ribs, and recalls the rib-vaults in Gothic cathedrals. All other surfaces interiorly are stainless steel, aluminium or glass.

On the roof, a park was designed as landscape link between three entrance canopies. The canopies, made of steel and shaping dramatic curves, are the only visual objects above ground. The repeating ribs and glass form each one a transparent vault. In the daytime, generous amounts of natural light can penetrate into the ticket hall and the concourse, while the artificial lighting is glows at night and turns the canopies into shining crystals.[88] Even the JLE project team indicated that the skylight canopies function as icons of JLE.[89]

4.1 As Monumental as a Basilica?

Size does matter. It is the scale that makes Canary Wharf Station look monumental. Although the out looking is not as gigantic as the surrounding high-rise towers, the space inside the Station's is truly huge and impressive, and made almost all the journal articles using terms of religious architecture to report. The canopies look like "domes"; 'cathedral'

(accessed 3 Jul 2001). Another data is 240 metres long by 39 metres wide, see James S. Russell, "Canary Wharf, Jubilee Line Extension, London", in *Architectural Record*, Mar 2000, p.138-141.

[85] *Jubilee Express*, issue 8 (Dec 1997).

[86] *Foster and Partners* website, http://www.fosterandpartners.com/news/20-09-99.html, (accessed 3 Jul 2001).

[87] Powell, 2000, p.99.

[88] What the judges of World Architecture Awards says can well-describe the canopies, 'Something every member of the jury agreed upon throughout the judging process was that architecture should be uplifting; the buildings should make people who use them feel better. This is certainly so with the new cavernous underground station in London's Canary Wharf by Foster & Partners. Tourists make special trips to stand at the bottom of the escalators, gazing up to the glass domes of the canopies over the three entrances, and signs have gone up entreating them not to take photographs at platform level.' *Foster and Partners* website, http://www.fosterandpartners.com/newsmenu.html, (accessed 4 Jul 2001).

[89] *Jubilee Express* (the project team magazine), Issue 8 (Dec 1997).

becomes conventional for describing big space,[90] but adjective "Basilican" is even been adopted for this station.[91] These terms are not just neutral for scales, if we examine what the baroque churches function in the 17th & 18th centuries. The spectacular and glorious style was employed by the Roman Catholic Church to strengthen its status in the society and to re-establish the great power it had before the Reformation. As an analogy, religious architecture may manipulate people's ideas (or ideology) through their reference to greatness.

What is more, with hierarchy, Basilica is the highest class of Catholic churches. The application of these terms is not only to portrait the monumentality but also hierarchy, which implies there is hierarchy of significance among the JLE stations as well as the tradition of the Roman Catholic Church in medieval Europe; and the Canary Wharf Station is doubtless the highest.

4.2 As Speedy as Capital Flow?

The interior of the Station, as mentioned, simulates a flying device; therefore the space evokes a sense of speed, which mainly comes from the columns and the ceiling. The slim elliptic columns, with function caps on top and fine finished concrete as surface, do not look like the elements of a building but limbs of an aircraft. The roof/ceiling, supported by columns, spreads from the central spine/beam towards two sides with gentle curves. The rib pattern of the roof acts as the structural and formal elements. They are truly like wings. At each side of the "wings" there are a number of silvery metallic "tubes" that run perpendicularly through the ribs. (Fig.5)

In Canary Wharf Station the architect tried to achieve the sense of speed by something more than what the other architects did in the other stations: the airiness and lightness, which are also the principles that Paoletti demanded for station design. Norman Forster and his team tried to eliminate all sense of heaviness. No "heavy" materials like stones and brick can appear in the space. However, it is difficult to build a huge underground structure without using reinforced concrete. His strategy then was to cast the concrete surface in a way to make it seem as smooth as possible. The fineness of the surface made the concrete, which is really a great portion of this building, almost transformed into 'light metal'. The concrete here, as that of columns, is far from the "Brutalistic" roughness but an imitation of light metal, which aims to give the sense of lightness and speed. The sense of speed recalls the mobility and fluid of the flows, can be that of people but more all economic factors, which form the core of this globalisational epoch. (Fig.6)

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[90] Powell, 2000, p.98.
[91] J. S. Russell, "Canary Wharf, Jubilee Line Extension, London", in *Architectural Record*, Mar 2000, p.129.

4.3 Named Brand Architecture

The goods pursued by people of wealth and taste have certain qualities in common: rarity, luxury, high performance and craftsmanship. These characteristics contribute to the image of "named brand" commodities. Canary Wharf Station has all these qualities, most significantly craftsmanship in architectural design and construction. Take the glass canopies above ground,

> "The canopies are a technical challenge," says senior Supervising Engineer Dennis Drake, "as every one of the 400 hundred curved panels of glass is unique in shape and contour. They have been individually cut and moulded to fit within the structure in a specially developed computer controlled furnace in Italy by the firm which also produces windscreens for Ferraris!"[92]

Well, Ferrari! No car can be more name-branded than it. Canary Wharf Station is the structure with Ferrari components. And it was made intentionally so by the JLE Project team. As Paoletti says, 'we spent much more on some stations than others. We spent a great deal on Canary Wharf to indicate that its special nature within this high-rise skyscraper district was to do for Canary Wharf what the Opera House did for Sydney.' [93] The impressiveness of the station was not an accident but the vision in Paoletti's mind. The image that the station was designed for the Enterprise Zone, like the Opera House did for Sydney, is truly a premier urban scene of the city. In this sense, the selection of Foster and Partners was no accident either, because they are famous for use of craftsmanship in construction, one of the most famous cases being his Hong Kong and Shanghai Bank.[94]

Nowadays, a building designed by architects like Foster and Partners is undeniably "named brand" architecture; well suited to any city that wants to create an identity for itself.[95] These name-branded architects now become as notable as their name-branded designs in the global cities community, and become an essential accessory to those cities that try to increase their image and competitiveness.

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[92] *Jubilee Express*, Issue 8 (Dec 1997)

[93] Russell, "Canary Wharf, Jubilee Line Extension, London", in *Architectural Record*, Mar 2000, pp.138-141.

[94] The site for building was so limited for the conventional construction. Therefore, a high building technology was developed, with prefabricated components made all over the world and assembled at the building site. It thus should be put in a very strict quality control, both out of and on the site. And according to the Foster and Partners, the client's brief quite categorical: nothing less than the best bank building in the world. See Foster and Partners website, http://www.fosterandpartners.com/projectsmenu.html, accessed 28 Aug 2001.

[95] Another famous example is in the Bilbao Spain. Norman Foster's Metro stations are also the architecture that made the city getting its world wide fame, like Frank O. Gehry's Guggenheim Museum. The Metro's glass canopies are called as 'Fosteritos' by locals. See Powell, 2000, p.99.

5. The Significance of Architectural Rhetoric

5.1 The Space and Image the Global Cities Want

The main idea of this paper is that the stations of the JLE are a kind of symbols of globalisation. I argue this not just because the JLE project was driven by the development of Docklands, but also because a certain symbolic operation can be found in its form, material and the components.

What kind of space does a global city need? For office, it needs spatial flexibility; room for utilities, especially those for information processing and telecommunication. To meet the people's lifestyle, the whole district should be planned with retail businesses needed and necessary facilities, and with decent open space and green. The latter, together with indoors glass atrium with natural light, are also quite important for the area's image. Buildings should have a pretty lobby and be tall enough to have nice view. All these qualities should be maintained by an invisible system.[96]

Canary Wharf is this kind of venue. The park above the roof of the station, for example, meets these requirements. If the entire Enterprise Zone is regarded as a big office block, then the park is the green atrium. This is the London version of the Winter Garden, the glass atrium full of natural light and lined palms, of World Financial Centre in Battery Park City New York, also developed by the same Canadian developer Olympia & York and designed by same architect of Canada Tower Cesar Pelli.

However, the station itself cannot be merely a surface and core building with a faceless appearance. As a gateway, it must stand out from these high-rise towers. In fact, this was a goal at the planning and design stages for all the JLE stations. The Canary Wharf Station is just the most explicit one. Image making is one of the key goals of the JLE's construction in an era of globalisation.

5.2 High-tech aesthetics as an architectural language of global significance

From most of the JLE stations, a common style as the formal expression of architecture may be easily concluded, the beauty of high technology, which can be a synthesis of the demanded spatial qualities like airiness, lightness, transparency. One of the functions of high-tech style is to express the beauty of the construction and components. The standard utilitarian boom used in all stations is one of the elements that show this attempt to represent technology beautifully. Compare with the old one, which was designed as a frieze attached on or hidden behind the tunnel wall, the new one is suspended under the

[96] The Broadgate in the City, which has been built and is operational, is a good reference.

ceiling. The design let the mechanical parts exist autonomously in the space, and show all the neatly shaped joints and details. What is significant here is not only that the mechanical elements are expressed, but also the "expression" itself. The change enables people to *see* the *technology*.

What, then, does the high-tech language say here? Ian Ritchie's portfolio answers this question as follows:

> …there appear to be only two visible positions: on the one hand, the High-Tech school advocates technical innovation and the use of new materials and methods that may involve risk and can be seen as progressive. Architecture should be something up-to-date, state-of-the-art, equal to the modern world of lasers and computers. This approach is well-received in Britain, and the High-Tech school is replete with knights and beloved of the Establishment.97

The High-Tech school could be regarded as innovative. It therefore can well express, with the built form, the technological achievement, which goes beyond the local and towards the global. This may be supported by the fact that MacCormac, one of the architects of Southwark Station, described the West Ham station "quite domestic".[98]

It is "domestic" because the construction of bricks and textured concrete is not as global as the shiny smooth streamline "high-tech" ones. And as the brick and masonry vaults in London Bridge and Waterloo stations, they just play the role as background for high-tech elements. Thanks to the architects van Heyningen & Haward, we have the "domestic" West Ham Station for us as a mirror to reflect the global nature of the other high-tech stations. (Fig.7)

5.3 Monuments of Everyday Life

Nearly all the terms people use to describe the JLE stations, like 'basilican' and 'Piranesian', and even 'a touch of Nerviesque poetry', are splendid and grand. Indeed, Paoletti had a great ambition, 'While improving access will no doubt benefit these communities, Paoletti sees the architecture itself as a kind of beacon of urban renewal – both because it establishes a new higher standard of construction in struggling neighbourhoods and as a point of pride for residents.'[99] The ambition has been achieved in a large degree since the stations have earned themselves so many grand descriptions. Will they then become monuments? Perhaps they will, helped on their way by the honorific

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[97] Rocca quotes from R. Maxwell, see Rocca, *Ian Ritchie: Technoecology*, Whitney Library of Design, New York, 1998, p.11

[98] "MacCormac: JLE couldn't happen again", in *Building Design*, Fri Jul 28 2000, p.22

[99] Russell, "Canary Wharf, Jubilee Line Extension, London", in *Architectural Record*, Mar 2000, pp.138-141.

descriptions conferred upon them.

Rob Shields claims that works of monumental architecture signify or embody the cultural *Weltanschauung* of their epoch. "Buildings such as train stations or palaces, urban projects such as defensive city walls or pedestrian boulevards have direct impacts on behaviour and, indirectly have a discursive impact on thought and cultural practices," he suggests, and "architecture has a legitimating function as it attempts to express the essence of social needs resolved in a project and in so far as it influences norms of conduct (…) being both structures and discursive statements. They can be studied for the cultural presuppositions and power relations which they impose by presupposition."[100]

With a big difference from the traditional great architecture, even the great train stations, the Underground stations seldom strike a grand posture in the urban landscape. Since they are indeed "underground", most of the system and stations cannot be seen aboveground, especially when located in the central urban districts. They seem can never compete with cathedrals, city halls and great squares.

This characteristic, however, does not necessarily stop Underground stations from being symbols in discourses, or the crystallization of ideologies and carriers of particular values. As a daily tool of commuting, the process of signification[101] also works behind its functional nature. With intensive architectural rhetoric, it can be as powerful as its celebrated relatives. For Londoners, Underground systems are already the most important mode of transport. In this sense, the JLE stations can be the monuments of people everyday life. What is more, they have perhaps more intensity than most aboveground monuments. In these stations, people experience their spaces and perceive their rhetoric in a pure environment, isolated from the surrounding urban context.

Lefebvre also gives his remarkable point. 'Monumental space offered each member of a society an image of that membership, an image of his or her social visage. It thus constituted a collective mirror more faithful than any personal one. Such a "recognition effect" has far greater import than the "mirror effect" of the psychoanalyst…The monument thus affected a "consensus," and this in the strongest sense of the term, rendering it practical and concrete.'[102]

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[100] R. Shields, "Spaces for the Subject of Consumption", in Rob Shields ed., *Lifestyle Shopping: The Subject of Consumption*, Routledge, London & New York 1992, pp.1-20

[101] The concept adopts from Roland Barthes'. See Barthes, *Myth Today*,

[102] H. Lefebvre, *The Production of Space*, trans. Donald Nicholson-Smith (Oxford: Blackwell, 1991), p.220.

5.4 From a Node of Transport to a Place

Underground, or Metro architecture is getting increasing attention in professional journals and in the news media. Of course, there are legendary historical examples of subway architecture, such as Guimard's Metro work in Paris and Charles Holden's in London. But today's developments are more significant than these. As a node for transport, the Underground station is more than a gateway and has become a place. As a building, it is more than a functional facility and becomes a significant medium of communication. Luca Paschini's point can really give an explanation.

> The design of underground networks and their stations is no longer seen as a problem of mere rationalization of access way and tunnels; the stations are no longer viewed as mere places of transit, but as places where you can do something, experience something. The design of metro lines is no longer seen as a problem of flow, as in a hydraulic system; the underground city has lost its immaterial, suspended image, as in the city of tubes of Armilla, and it has become, as in the second film by Luc Besson, *Subway*, a place where people are beginning to spend time, to dine, to shop, but also to organize concerts or fashion shows (as has happened at North Greenwich). Man spends more time beneath surface level, and these new everyday rituals are also modifying our perception of space.[103]

[103] L. Paschini, "The Jubilee Line Extension Project, London", in *Casabella*, vol. 64, no.678, May 2000, p.95.

Conclusion

In the age of globalisation, city image and its competitiveness are interweaving together and both orient towards the marketing. Cities need to compete with each other for a higher status in the global economic network and hierarchy of city. Apart from the basic economic condition, marketing is necessary for cities in order to increase their competitiveness. In this process, a positive city image can help city's marketing and increase the competitiveness, while the competitiveness can actually help to build a better image.

Urban infrastructure plays an essential role for supporting the urban economic activities. At the same time, it is also an excellent factor for building the splendid architecture for the urban landscape, which can be transferred into the formal elements of city image making. By discussing London new Underground project, the Jubilee Line Extension, we examined the relations between the architecture of urban infrastructure and the remaking, functionally and symbolically, of a global city.

The redevelopments of the Docklands were the response to the onset of globalisation in the 1980s, and reinforced London's position as a leading global city with two dimensions, economic and symbolic. The project began with the economic concern, and the symbolic one followed. The JLE project was exactly like that. It was planned initially as a 'lifeline' for the Docklands. Then the architectural designs carried out the symbolic function for the re-making the global city.

With three types of the stations, the JLE project making image for and communicates a sense of a global city. The stations in the central urban district were mostly a remodelling with juxtaposition of old and new features, in which the passengers can experience the contradistinctions and transitions. By expressing the machine-like spaces and high-tech components, the new designs articulate the message that "the system does work". And by adopting the old structures as contradistinction and background, the new spaces bring a sense of renewal and rebirth to the old system. Another concern is the 'visibility' of the stations, though very difficult but "struggling up" to achieve, so that the architectural signification can reveal in the urban landscape, and all these messages can reinforce people's confidence and belief to the 'system'.

The stations locate in residential districts, where they could have aboveground structures and follow Paoletti's principle of maximum daylight in a largest degree, were to be made as the 'beacons of the communities', with futuristic shapes and high-tech components. These stations express a promise: the regeneration of the community is bringing by the new urban developments of a global city.

The stations in the new urban centres are the principal ones of the line for their special brief and strategic locations. Being the icon of the JLE, Canary Wharf Station represents the monument of British new deal of globalisation with two main features: the "Basilican" ticket hall and the delicate glass entrance canopies. The architectural design also reveals the other symbolic messages. The aircraft-like interior space creates a sense of speed, which endows the Station a spatial experience of speed and flows; while the architectural craftsmanship provides a name brand image, from which the milieu for global elites and the identity of a global city may be associated.

Finally, the urban and spatial rhetoric formed by JLE architecture implies a series of significances. Firstly, for achieving the status of a global city, some particular type of spaces and city images are needed. Secondly, the style architecture may affect the spatial sense of globalisation, then the city image. Thirdly, the urban infrastructure such as underground stations may play as an urban monument of everyday life. And lastly, the character of urban metro stations is shifting from simply the nodes of transports to significant urban places.

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