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东滩

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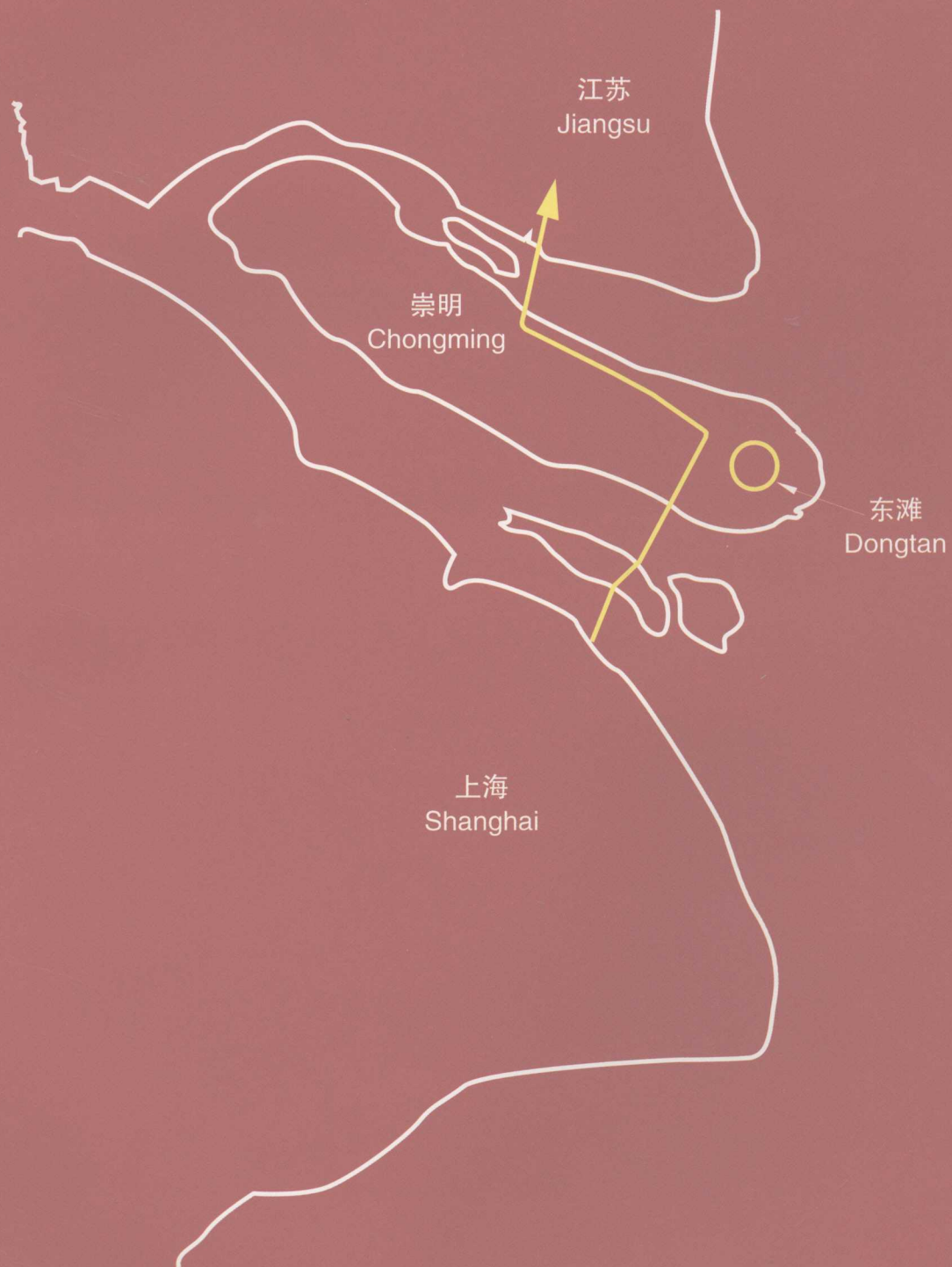


上海三联书店

谨以此书献给每一个为城市可持续发展而探索的人，献给
每一个帮助和关注我们的人。

We dedicate this book to every person who has ever
been trying to explore ways of making modern cities
truly sustainable, and who has ever offered us help
and concern.





2005 年 11 月 9 日，中国国家主席胡锦涛在英国访问期间，中英企业签署了一系列经贸、科技、教育协议。

其中，最为引人注目的是——

在中国国家主席胡锦涛和英国首相布莱尔的见证下，上海实业（集团）有限公司与英国奥雅纳公司签订宏观合作协议，目标是把上海东滩建设成为全球首个生态城市。

On 9 November 2005 during the state visit of Chinese President Hu Jingtao to the United Kingdom, a number of agreements were signed between Chinese and British companies in the areas of trade, science and technology, and education.

Among the most interesting was the wide-reaching agreement signed between Shanghai Industrial Investment (Holdings) Co., Ltd. (SIIC) and Arup, the UK planning, engineering and consultancy firm, which was witnessed by both the Chinese President and British Prime Minister Tony Blair. This agreement confirmed the aim of developing the World's first eco-city at Dongtan, Shanghai.



集世界经验之大成：规划可持续新城市 Sir Peter Hall

东滩项目意义之重大，在整个城市建设史上都绝无仅有。仅仅是项目的定义就让人觉得独一无二。但是，在东滩项目进入规划和建设阶段以前，它首先要做的应该是借鉴历史上一切可以借鉴的经验，这既包括 Ebenezer Howard 于 1898 年在其出版的书籍（Howard 1898, 1902, 2003）中提出的有关在大城市的周围规划建设新城镇的创新思想，也包括在以后整个 20 世纪兴建的所有新型社区。

东滩项目在学习他人经验的时候，必须要做到系统化。我认为，东滩项目作为伟大的尝试，应该考虑以下两个问题：

第一，选址：即如何处理新城和“母城”的距离关系？在此，我们可以区分两种模式——

伦敦模式：新城远离母城，自成一体；

斯德哥尔摩和巴黎模式：靠近母城，成为母城的卫星城。

第二，设计：怎样的设计才能称得上是可持续性设计？这其中关键的因素有哪些？我虽然不会不懂装懂地给大家列出一张完整的清单，但我至少认为有两个至关重要的因素——

绿色空间的分布不应该只限于新城的外延，而是要渗透整个城区；

交通规划不仅要和土地的使用相结合，而且应该减少对私车的依赖。具体的实现方式可以采用最大限度地提高公共交通的可达性，无论是轨道列车，还是巴士，或者二者兼顾，并与土地规划相结合。

选址

Howard 曾经提出小规模的花园城市（人口规模在 32,000 人左右）和母城伦敦之间的距离应该至少超出以母城为工作地点的可能的上下班距离，从而确保这些城市能够独立地为当地居民提供工作和生活的机会，形成自成一体的社区。但是，为了充分利用大城市的经济和社会优势，周边小城市的兴建地点应该设置在通往大城市的轻轨沿线。

Howard 用图表展示了他所设想的布局模式，即一个人口规模在 58,000 左右的中心花园城市的周围，分布着六个人口规模在 32,000 左右的小型城市，从而使整个地区的人口数量保持在 250,000。但实际上，Howard 也曾明确承认，现实中这些城市族群（他称为“社会城市”）的人口规模完全可能会更大一些。

1903 年，伦敦周边第一座花园城市 Letchworth 在位于伦敦以北 60 公里的地方开建。1920 年，第二座花园城市 Welwyn 也在伦敦以北 35 公里的地方动工。二战过后，同样在以伦敦为中心的 35 公里和 60 公里之间的环形地带，第一批由政府出资的新城镇也开始兴建，其中两处城镇——Stevenage 和 Hatfield——与前期兴建的 Letchworth 和 Welwyn 具有同样的位置关系，即都位于以伦敦为中心的半径轴线上。在今天看来，Howard 当年的设想都落到了实处。但具有讽刺意味的是，新城 Welwyn 从一开始就成为了伦敦上班族聚居地，而 Letchworth, Stevenage 和 Hatfield 也都有直达伦敦市中心的电气列车提供上下班交通服务，而且旅途时间均不超过一小时。实际上，这些早期的新城镇很快丧失了自身的独立性，融入了不断向外扩展的伦敦上班族聚居环带。60 年代兴建的第二代新城镇，比如 Milton Keynes, Northampton 和 Peterborough，距离伦敦的位置较远，在 100 公里到 130 公里之间。但即使如此，由于交通技术的发展，第二批新城镇和伦敦之间在今天仍采用时速高达 200 公里的高速列车互通，因此，以上提到的所有地方都很不幸地沦为了伦敦上下班交通的高频使用地区。

因此，在过去的半个世纪，以上所有的地方都融为超大城市地区的一部分。它们以伦敦为中心，最远辐射区域达 130 公里，总共包括 50 多个互不毗连的城市和城镇以及它们自身的就业人员居住区，全部人口总规模近 1,900 万。如今，我们赫

然在长三角地区看到了这样的雏形。另外，我们在最近还意识到英格兰东南部也出现了同样的现象。最近，以此为课题的新研究不久将在书籍中出版（Hall and Pain 2006）。

可以看出，如何在类似情况下建设自成一体、经济自主的新城市代表着我们将要面对的重大挑战。在近期的研究中，我们发现了这样一种设想：该设想认为英格兰东南部地区应该由伦敦上班族聚居地和其他 50 个以上更小规模且自成一体上班族聚居地（“城市功能区”）所组成。由于和伦敦的距离约在 60 公里以上，这些地方都具有较大的独立性，居民就业群体中在当地就业人员的比例应该在 75% 和 80% 之间。这样尽管这些地方具有通往伦敦的便捷轨道交通，可以被当地居民作为去往伦敦的上下班工具，但这仅仅占有所有居民的一小部分。轨道交通的主要用途是为方便当地居民到伦敦提供商务旅行的服务，这些人在本地就业，不属于伦敦上班族。我认为，这种模式的重要意义不可低估。

近来，英国政府已经着手探索实现这一模式的具体办法，并于 2003 年提出了建设可持续性社区的战略方针。该战略方针设想以通往伦敦北部和东部的主干铁路和公路为轴线，在距离伦敦 70 公里至 130 公里的区域内，沿轴线兴建系列开发区，而早期建设的新城镇也包括在上述地区以内。从建设规模和距离伦敦的路程上看，这些开发区一方面具有高度的独立性，但同时和伦敦之间有着便捷的交通联系。如果照此方式，Ebenezer Howard 的“社会城市”模式就会在 21 世纪得到重新演绎。另外，在英格兰中南部，以 Milton Keynes 为代表的亚地区战略就是这一模式的经典体现，该地区由一系列的中小城镇组成（其中的三个是前期的建设的新城镇），均分布在从伦敦发出的两条高速列车通道的沿线，并由开阔的绿色空间分隔。

在 20 世纪 50 年代，当英国政府开发第一批新城镇的时候，瑞典政府也在以完全不同的模式在斯德哥尔摩周边进行城市开发：具体方案是在距离城市 15-20 公里的范围内兴建卫星社区，并以新型的地铁系统（Tunnelbana）连接到市中心及其他就业场所。虽然这一模式在开始阶段运作良好，但随后由于卫星城市之间，以及卫星城市和其他外围地区之间既没有铁路相连，公交巴士又不甚方便，人们对汽车的需求因此远远超出了事先的估计。在后来的 90 年代，瑞典政府实施了新方案，其实质就是对英国的可持续社区战略的翻版：通过对现有线路进行升级和连接，形成新的轨道交通系统，从而连接起距离斯德哥尔摩 60 公里至 120 公里范围内的中小城镇。由于上述区域都或多或少因为早期基础制造业的衰落而面临就业危机（Västerås, Eskilstuna, Örebro），新方案的实行实际上刺激了这些地区向自为一体发展，但同时又利用和斯德哥尔摩之间的便捷交通进一步发挥其经济潜力。不过，后来新出现的轨道线路的利用效率和列车密度又成为了敏感的话题。

和斯德哥尔摩一样，巴黎地区的 1965 计划（现在称为“大巴黎地区 Région Ile-de-France”）也制定了紧挨巴黎兴建卫星城的开发方案，但现在这一地区的规模（多达 50 万的人口及相关就业岗位）远远超出了当年的设计预期。当时，所有认为开发区和巴黎之间应保持一定距离并具有自身独立性的设想都遭到了明确否定。巴黎方案的实施在当时颇为成功，整个地区一直保持着高密度，其中心商业区逐步向西延伸至新的商务中心——拉德芳斯（La Défense）和依斯木里努市（Issy Moulineaux）。但是，整个规划从头到尾都没有计划要形成自成一体的地区。1994 年，由于以上区域在 20 世纪 80 年代遭受工业衰退的严重困扰，原先的方案得到修正，新方案强调了对老中心城区周围的近郊环带进行城区改造。其间有建议把开发目标放在距离巴黎 100 公里左右的多个所谓“教堂城镇”（Rouen 卢昂，兰斯 Reims 和沙特尔 Chartres），但实际上该设想最终还是被人们所放弃。

可持续的设计

当我们开始考虑在新规划的城市内进行土地使用规划和交通网络设计的时候，我们有必要注意到一些完全不同但又相互联系的因素。

首先，我们应该考虑绿色空间的分布。Howard 认为，每个花园城市都应该被绿化带所环绕，并由此和相邻的花园城市或现存的聚居地间隔开：按照该思路设计出的“社会城市”图表体现了“城镇以开阔的乡村为背景”的设计思想。这一规划理念其实是后来由建筑师兼英国著名城市规划奠基人 Raymond Unwin 所实现。但城市应该和乡村一样，其内部也应该是树木葱茏，绿意盎然的地方。由于这些城镇在规划阶段无需考虑土地价值——Howard 理念的实质就是以类似农业用地的超低价格收购开发区土地，并在拥有土地之后采用信托的方式出租出去——因此，每个花园城市的中心区域都设有大型的圆形公园，而周围则分布着市政建筑；Letchworth 的城市规划是对这一设计理念的贯彻。另外，在中心花园和城镇边沿之间的中间地带，还应该兴建内环绿化带——由公园组成的环状区域——为各所学校提供开阔的空间。Howard 曾强调，其书中的参考图示只能作为大致的方案，真正的规划设计必须适应当地的地理条件。在现实中，大面积的绿色园区在 Letchworth 和 Welwyn 都一定程度上得到体现，然而其形状却都没有采用环形。同样，20 世纪 40 年代兴建的新城镇也包含了类似的设计，绿色空间被用来分隔人口容量在 5000 到 8000 人之间的城镇片区，而每个片区都设有商店和学校——其实这种设计是借鉴了美国社区规划师 Clarence Perry 的思路。1912 年，Perry 在为纽约规划花园城郊——森林山花园（Forest Hills Gardens）期间，第一个实地运用了这种规划思路。

在现实中，美国的规划师们后来又在两个不同地方具体实施了 Howard 的规划理念。在现今的新城规划中，这两个地方也许算得上是把绿地融入城区的杰出代表：它们一个是纽约外围的 Radburn（1928），另一个是华盛顿特区郊外的 Greenbelt（1935）。身兼建筑师和规划师的 Perry 在以上两个项目中都发挥了重要作用。其中，Radburn 项目有史以来第一次把汽车和行人—自行车相分流，从而落实了为孩童上下学提供安全路线的设计思想。此后，英国的许多新城镇都借鉴了这种思想，虽然各个地方所使用的名称不尽相同。然而事不凑巧，由于美国大萧条的影响，Radburn 原先的设计只有很少一部分实现并保持了下來。只有 Greenbelt 完整地实现了原规划，协调一致的城市设计才得以保留至今：类似的分流理念在 Greenbelt 也得到运用，不同的是行人—自行车混合道路直通包含多所学校和多种社区设施的圆形中心公园，而居民住宅区组群则呈巨大的马蹄状分布在中心公园的周围。

城市内部规划的另一个关键问题是土地功能、场所活动、以及使各场所相连接的城市交通体系三者之间的关系。对此，我们需要特别关注的是人口密度，尤其住宅开发区和商务开发区的人口密度。其原因在于这些区域的人口密度将决定如何在一个有车族占多数比例的城市，制定出既可行又令人满意的市内公共交通体系；另外，交通体系的本质定位也是一个相关的问题。在这方面，Nick Falk 和 David Rudlin 在全球范围内对住宅区人口密度改变及其与交通系统之间的关系进行过分析（Rudlin and Falk，1999）。

值得注意的是，不同的交通方式——巴士、轻轨、重轨列车——对最低人口密度有着不同的要求。对多数城市开发类型而言，因为重轨列车的建设成本和最低人口密度要求都相对较高，因此往往不作为一种可行的选择。很有意思的是，使用大承载量铰链式客车的可行性最先在巴西的 Curitiba，后来在哥伦比亚首都波哥大（Bogota）都得到了印证，而且后者的使用规模甚至还超过了前者。铰链式客车的成本远低于轻轨，和标准规格的重轨列车成本相比就更显低廉。这种交通体系在 Curitiba 从 20 世纪 70 年代一直发展到现在，形成了天衣无缝的公路连接网络，其中，最高载客量可达

270 人的高承载量客车行驶在高速公路通道,环城巴士行驶在城市环线,而地区巴士则提供通往地区公交中心的支线服务。需要注意的是,这样的安排同时需要在位于高速公路沿线对高密度开发区的仔细设置。

但是,我们必须强调以上的方案并不唯一。欧洲的城市,比如德国的 Freiburg,法国的 Strasbourg,近来都沿着有轨电车的新建延伸段,十分有效地开发出中高密度的城郊区域。丹麦“镇中之镇”——Ørestad 的开发靠近哥本哈根机场附近新建的地铁沿线和通往瑞典的铁路公路交叉口。在此前的 20 世纪 50、60 年代,斯德哥尔摩多处著名的卫星城则位于重轨地铁系统(Tunnelbana)的新建延伸段,并在列车站和车站配置购物中心周围开发了由内向外人口密度层层递减的高密度住宅区。另外,新加坡和香港在最近也实施了同样规划。对于以上的所有项目,以及其他的项目,我们都应该认真系统地加以研究,并从中总结出经验教训,为东滩的设计工作提供借鉴。

结语

最后我再次重申以下两点。首先,东滩的设计应该对前半个世纪以来主要的项目规划和设计实践进行系统总结,并从中总结出经验教训。其次,应该把总结出的正面经验整合成一个复合性的设计载体。我认为,在东滩“动真格”之前,做好以上两点是我们的当务之急。

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Sir Peter Hall

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Planning a sustainable new city: Learning from global experience Sir Peter Hall

Dongtan is a truly momentous project, unique in the entire history of city building; almost by definition it must stand by itself. But, in embarking on its planning and construction, it is first useful to learn whatever one can from the experience of other new communities over the course of the previous century, ever since publication of Ebenezer Howard's path-breaking book of 1898 (Howard 1898, 1902, 2003) which first suggested the idea of planning and building a new town outside a large city. In doing so, it is necessary to be systematic. There are, I would argue, two key questions that need to be asked about such attempts:

First, location: what is the relation to the "parent city"? Here, we can distinguish two models:

- Distant from the parent city and thus self-contained, as in the London new towns
- Close to the parent city and thus a satellite town, as in the Stockholm satellites and the Paris cités nouvelles.

Second, design: how to achieve a sustainable design? What are the key elements? I cannot pretend at a complete list, but there are at least two critical elements:

- Green space which should surround the town and penetrating right into and through it;
- Transport which should be planned to reduce dependence on the private car, through maximising public transport access, either by rail or bus or some combination of the two— and related to land use planning.

Location

Howard argued that quite small garden cities (the planned size would be as low as 32,000) should be built at a minimum distance from London — outside the possible commuter range — to ensure that they would be self-contained communities for living and working. But, in order to obtain the economic and social advantages offered by larger cities, they should be planned and built in clusters linked by light rail transit: Howard's diagram shows a larger central garden city of 58,000 people surrounded by six smaller cities of 32,000 each, totalling 250,000, though Howard makes clear that the cluster (which he called "Social City") could be bigger.

The first garden city was started in 1903 at Letchworth, 60 kilometres north of London, the second at in 1920 at Welwyn, 35 kilometres north of London. The first government-financed new towns were established after World War Two in this same belt, between 35 and 60 kilometres from London, and two – Stevenage and Hatfield – were in exactly the same radial corridor as Letchworth and Welwyn, so that today they constitute Howard's Social City on the ground. But ironically Welwyn had become a commuter settlement from the start, while Letchworth, Stevenage and Hatfield are also served by the same regular electric commuter trains that reach the heart of the City of London in an hour or less. In fact all these early new towns were soon absorbed into London's ever-expanding commuter belt, and a second generation of new cities, established in the 1960s — Milton Keynes, Northampton and Peterborough — were planned much farther out, between 100 and 130 kilometres from London. But ironically, transport technology caught up: today these cities, too, are served by fast trains connecting them at up to 200 km/hr. with London, and have considerable commuter traffic.

Thus, in the last half-century, all these places have become part of an ever-expanding Mega-City-Region, extending up to 130 km

from London and incorporating no less than 50 separate cities and towns and their local surrounding commuter catchments, with a total population of nearly 19 million people. The archetype of such a region is of course the Yangtze delta; we have only recently come to realise that we are witnessing the same phenomenon in South East England, and it is the subject of a new research study soon to be published (Hall and Pain 2006). How to create a largely self-contained, self-sustaining new city in such a complex represents a major challenge. But there is a suggestion, emerging from our new recent research: South East England comprises the London commuter zone and no less than 50 other much smaller separate commuter catchment areas ("Functional Urban Regions"), and beyond about 60 kilometres from London they are largely self-contained, with around 75-85% of employed residents finding local jobs. Thus, though they have excellent rail links and some of their residents use the fast trains to commute to London, these people are a small minority. These links are used mainly for business travel into London. But the people who use them are largely employed locally; they are not London commuters. This is a very important model.

Latterly, the UK government has begun to explore this model. Its 2003 Sustainable Communities strategy proposes a string of developments along the main rail and road corridors leading north and east of London — including the locations of some of these earlier new towns — at distances between 70 and 130 km from London. In their scale and their distance from London, these should maintain a high degree of self-containment, although readily accessible to London for business meetings. The old Ebenezer Howard model of the Social City is being reinterpreted for the 21st century. It is well illustrated by the Milton Keynes-South Midlands sub-regional strategy, which consists of a chain of medium-sized towns (three of them former new towns) along two fast rail corridors from London, separated by intervening open space.

In the 1950s, while the UK government was developing the first new towns, the Swedish government was pursuing a very different model around the city of Stockholm: satellite communities at about 15-20 kilometres distant, linked to the city centre and other employment opportunities by a new metro (Tunnelbana) system. It worked well at first but generated far more car traffic than anticipated because of the demand for access between the satellites and also to other outer areas, which the metro system did not directly serve; bus transit proved to be an unattractive alternative. More recently, in the 1990s, the Swedish government have produced what is in effect an alternative version of the UK's Sustainable Communities strategy: a new rail system, produced by upgrading and linking older lines, has linked the medium-sized towns between 60 and 120 kilometres from Stockholm, which are suffering in various degrees from loss of older basic manufacturing employment (Västerås, Eskilstuna, Örebro), stimulating their development as independent largely self-contained places, but providing the linkages to Stockholm that enhance their economic role. This has generated new rail traffic, which has however proved sensitive to the level of service provided on the new links.

The 1965 plan for the Paris region, now known as the Région Ile-de-France, likewise developed new satellite cities, now however on a much larger scale (up to 500,000 people, with associated jobs), in close proximity to the existing agglomeration. Any attempt at separation or self-containment was categorically rejected. This plan was successfully implemented and the region has remained very compact, with a central business district that has marginally extended westward to the new commercial centres of La Défense and Issy-Moulineaux; however, there is no attempt to generate self-containment. The 1994 revision of the plan

stresses urban regeneration in the inner suburban ring just outside the historic central city, which suffered severely from de-industrialisation in the 1980s. There was an initiative at that time to promote growth in the ring of so-called cathedral towns (Rouen, Chartres, Reims) at about 100 kilometres from Paris, but this seems to have been effectively abandoned.

Sustainable Design: How to achieve it?

When we come to consider the internal planning of land uses and connecting transport systems within such a planned new town, entirely different – but related – considerations apply.

The first is the disposition of green space. Howard's garden cities would each be surrounded by a green belt separating them from the next garden city or existing settlement: the resulting Social Cities diagram shows that they would follow a pattern later described by Raymond Unwin, Howard's architect at Letchworth and one of the key founding figures of UK town planning, as "towns against a background of open country". But equally, they would be totally penetrated by green space inside. Because they could be planned without any concern for land values – the essence of Howard's concept was that the land would be purchased very cheaply at agricultural values and then owned and leased out by a trust – the centre of each garden city would be a huge circular public park surrounded by civic buildings; this was actually achieved at Letchworth. Further, half way between this central park and the edge of the town there would be an internal circular green belt – a park ring – providing open space for schools.

Howard stressed in his book that these maps were purely diagrammatic and that the actual planning must be adapted to the local geography. Both Letchworth and Welwyn do contain large areas of green park space, though it does not take a circular form. So do the new towns planned in the 1940s, where the green space is used to define and separate local neighbourhood units of 5-8000 people, each with their own shops and schools – an idea borrowed from an American community planner, Clarence Perry, who first developed it in a planned garden suburb of New York, Forest Hills Gardens, in 1912.

American planners in fact developed Howard's ideas further in two remarkable schemes which represent perhaps the finest extant examples of interpenetrating green space inside a planned new town: Radburn (1928) outside New York City and Greenbelt (1935) outside Washington DC. In both, the architect-planner Clarence Perry played a key role. The Radburn plan was the first to employ the idea of separating car and pedestrian-cycle traffic to provide safe routes for children to and from school, which was later successfully employed in many of the UK new towns; instead, it gave its name to that layout. Unfortunately the town itself was never completed because the Great Depression intervened, and only a small part of the original design survives. Greenbelt in contrast was completed, and forms a remarkably coherent plan to this day: here the same principle of traffic separation is employed, but the pedestrian-cycle paths lead directly into a vast circular central park containing schools and community facilities, around which the residential areas are grouped in a giant horseshoe.

The other critical question is the relationship of land uses, and the activities they house, with the urban transport system connecting them together. Critical here are the densities, especially of residential development, but also of commercial development, that will underpin a viable and satisfactory public transport system in cities where the majority of households may own cars; and, related to this, the nature of that public transport system. Nick Falk and David Rudlin have analysed variations in residential den-

sity worldwide and their relation to transport (Rudlin and Falk 1999).

Significantly, different minimum densities are needed to support bus, light rail and heavy rail. For many types of urban development, it appears that heavy metro type rail, with relatively high construction costs and high minimum density requirements, may not prove feasible. The interesting point here is that, beginning with the city of Curitiba in Brazil and now on a larger scale with Bogotá in Colombia, it proves possible to develop viable high-capacity bus systems at a cost significantly lower than light rail, and certainly much lower than full-scale heavy-rail metro. Such a system, which has progressively evolved in Curitiba since the 1970s, involves seamless-web interchange between high-capacity articulated buses carrying up to 270 people on express busway corridors, orbital buses running in rings, and local buses providing feeder services into local interchange hubs, with deliberate zoning for high-density development along the express radials.

This, it must be stressed, is not the only possible model. European cities like Freiburg in Germany or Strasbourg in France have recently developed very effective new suburbs at medium-high densities along new tramway extensions, while Denmark is developing a “new town intown”, Ørestad, along a new metro corridor near to the Copenhagen airport and the approach to the new road-rail crossing to Sweden. Earlier, in the 1950s and 1960s, Stockholm developed its famous satellite towns around extensions of a new heavy-rail metro system, the Tunnelbana, using pyramids of high-density residential development around the train stations and the associated shopping centres; more recently, Singapore and Hong Kong have done the same. All these, and others, should be systematically examined so as to extract the lessons – both positive and negative – that they offer for Dongtan.

Conclusion

This last point needs reiteration. A first approach to the design of Dongtan will be to extract systematically the lessons – both positive and negative – of other major planning and design exercises over the last half-century. A second will be to synthesise the positive lessons into a composite design vehicle. This will be a major priority task before “design for real” can begin.

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