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# Integrated Transport Networks, Communities and the Design of Mixed-Use Developments | 综合体发展之综合交通网络、社区及设计



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David has extensive architectural design experience with, mixed-use development projects throughout South East Asia and the Middle East region. Zaballero has serviced renowned international Client's, including SM Holdings, Swire and Far East Organization. David oversees Arquitectonica's architectural design portfolio for Asia and Middle East projects and in addition, assists with research and application of regional design, planning and construction trends. Graduating the University of Manchester, with a Bachelor (Hons) in Architecture, and as a member of RIBA and the Architectural Registration Council, David's impressive design portfolio includes: Mall of Asia, Manila; Cyberport, Hong Kong; Taikoo

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Hui, Guangzhou; Alba Residential, Singapore.

# Abstract | 摘要

The paper examines the importance of integrated public and private transportation in mixed-use developments within the city and how this affects and improves our lives. The proximity and accessibility to major transport nodes has a critical impact on how we resolve and create a sustainable future. The paper will show how the incorporation of PTI's (Public Transportation Interchanges) helps resolve these issues and underlines the importance of integrating these connections with the horizontal and vertical transportation of our buildings at the earliest stages of design. Other topics will include: vertical transportation connecting with the ground plane; horizontal transportation connection points and planes; and pedestrian tunnels, bridges and walkways connecting the city. In summary, the paper aims to highlight the importance of integrating public transportation within our buildings and cities in making our lives healthier and more convenient. Case studies will be used to support and explain the paper.

# Keywords: Commercial, Community, Infrastructure, Master Planning, Sustainability, Urban Planning

本文探讨综合公共及私人交通系统于城市综合体的重要性及对我们生活的影响及改善之处。在处理及建立可持续发展的未来时,主要交通节点的距离及便捷度非常重要。本文将阐述如何通过纳入公共交通交汇处(PTI)解决此问题,及在早期设计阶段通过此连接整合建筑横向和竖向运输系统之重要性。其他专题包括:连接地面层的竖向运输系统;连接点和面的横向运输系统;以及与城市连接的行人隧道、桥梁和人行道。总括而言,本文旨在强调整合建筑及城市公共交通的重要性,使我们的生活更健康、更方便。本文会以案例作支持并加以解释。

关键词:商业的、社区、基础设施、总体规划、可持续性、城市规划

#### Introduction

Most of us are familiar with the efficient public transport systems of cities like Shenzhen, Guangzhou or Hong Kong (HK). They are a necessary part of the infrastructure and sustainable functioning of these cities; dense urban growth would be simply impossible without them. In HK in particular, such networks are highly interconnected, allowing one to switch from plane to train to subways to buses, with ease; even older, still functional tramways and cross-harbor ferries are retained (less out of nostalgia, one suspects, than simply because they still play a working role in the system).

The impact of such networks reach beyond their immediate transport functions. They drive pedestrian connectivity, creating a network of bridges, tunnels and arcades in their wake; this, in turn, interconnects individual developments, creating a walkable city and improved commercial benefits. They establish integrated payment systems, such as the Octopus card, which can now be used for a variety of payments beyond mere ticket fees. And, of course, they drive the development of

#### 简介

大众都熟悉拥有高效公共交通系统的城市,例如深圳、广州或是香港。公共交通系统不但是这些城市的重要基建,并维持其可持续性。如果没有这公共交通系统,人口密集的城市发展可谓不可能。尤其在香港,交通网络互相连接,让人们轻易由飞机转乘地铁、公交车。历史较久的电车和渡海小轮都保留着,不单因为怀旧,也因为它们在公交系统中仍然扮演重要角色。

这公交网络的影响远超越其即时交通功能。它带动了行人连接,创造其身后的桥梁、隧道和拱廊网络。连接城市里的每一栋建筑物,创造一个适合步行的城市,改善商业利益。同时建立了综合支付系统,例如八达通卡,除了支付车资,现在还能用于各种各样的付款。当然,也带动了其上盖的大型综合体发展。

这些项目的设计从其于交通系统怎样连结 开始(容易到达既意味着较多租金)它们 的成功也取决于怎样设计及利用这联系。 交通动线要伸延到大厦内,从车站乘自动 扶梯和升降机到大堂的经验在设计上也很 重要。多样化到达、水平通道和垂直核心 large, mixed-use developments above their stations and interchanges.

The designs of such projects are driven by their connectivity to the transport systems – easier access simply means higher rents – but their success is also contingent on how such connections are designed and taken advantage of. Transportation needs to extend into the buildings; the ease and experience of the transition from station to lobby to escalators and lifts often plays a critical part in their design. This is even more important in complex mixed-use projects, where multiple arrivals, horizontal paths and vertical cores need to be smoothly integrated.

But context varies enormously across projects; even in the relative confines of SE Asia, one goes from highly developed mass-transport systems, such as those found in HK and Singapore, to situations where public transport is less developed or even non-existent. This paper aims to examine different design responses to such situations, drawing on mixed-use projects from HK, Manila and Cebu.

## Case Study - Festival Walk, Hong Kong

Festival Walk (Figure 1) is a large mixed-use development, built in the 90's, consisting of a 100,000 sqm mid-market mall, and 20,000 sqm of grade-A office. Located in Yau Yat Chuen, on the Kowloon side of HK, its site was specifically chosen because of its location above Kowloon Tong, the Mass Transit Railway (MTR) station which connects the Kwun Tong and East Rail lines (and which also connects, via Futian, directly to Mainland China). Clearly, the developer saw the potential in the massive commuter volume going through this hub, and did not let minor problems (such as the sloping ground or MTR tunnels running the length of the site), stand in their way.

In addition to the MTR, and in conjunction with the transport authorities, the developer also built an integrated public bus terminal and an extensive taxi stand for the mall (Figure 2). This not only gave locals a more convenient access to Kowloon Tong, but also, not coincidentally, an equally convenient access to the mall. Finally, the more immediate pedestrian environs were also taken into account by including an underpass to the City University to the southwest, whose students and faculty have since become regular patrons of Festival Walk.

These transport connections also drove, to a large part, the interior planning and design

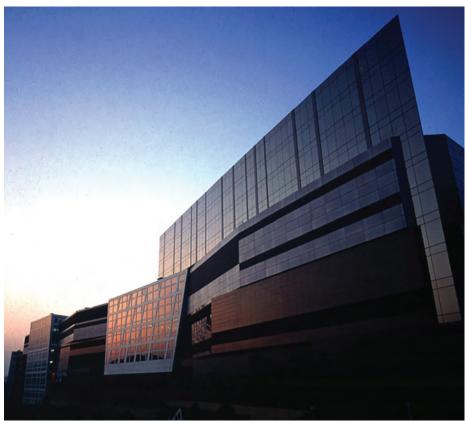


Figure 1. Festival Walk (Source: Arquitectonica) 图1. 又一城(来源: Arquitectonica)

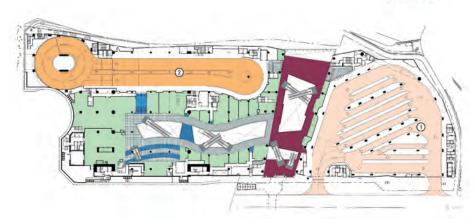


Figure 2. Festival Walk, ground floor (Source: Arquitectonica) 图2. 又一城首层平面图(来源: Arquitectonica)

流畅整体更是大型综合体不可缺少的硬件 要求。

但是不同项目的背景差异甚大,就算只看东南亚,由拥有成熟的公共交通系统的城市(如香港、新加坡)到公共交通不够发达,甚至不存在的情况都有。本文以香港、马尼拉及宿雾的综合体项目,探讨应对这种情况的不同设计。

# 案例 - 香港又一城

又一城(图1)于90年代建成,是一个大型综合体,包括100,000平方米的中档购物中心及20,000平方米甲级办公楼。项目位于香港九龙又一村,位置经过特别选择,

因为它于九龙塘港铁站上盖,连接观塘线及接通内地的东铁线。明显地,业主看到此枢纽大规模使用量的潜力,不让小问题(如:倾斜地面或地铁行车管道于地块长边并行)妨碍发展。

PTI TAXI STAND

除了地铁,业主也与政府有关交通部门沟通,建造了综合公交车总站及大型出租车站(图2)。不但让当地人更方便到达九龙塘,同时让他们更容易前往商场。最后,行人路周围直接连接香港城市大学的西南边,让学生、教职员成为又一城的常客。

这交通网络也为商场的室内规划及设计定下重要方向。地铁连接着狭长用地的东南边,因此大型主力店放在西北边,吸引人们跨过商场的直线布置。此主力店包括戏院、美食广场、溜冰场及最重要的20,000

#### LEGEND:

- 1. OFFICE
- 2. ICE RINK
- . CINEMAS
- 4. PII 5. MTR

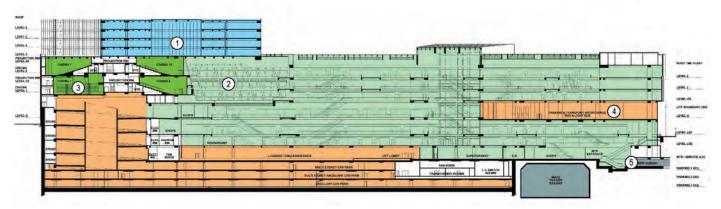


Figure 3. Festival Walk, section (Source: Arquitectonica) 图3. 又一城剖面图(来源: Arquitectonica)

of the mall. Given the MTR connection to the southeast of the long, narrow site, most of the anchors had to be placed to the northwest to draw people across the linear arrangement of the mall. Such anchors included the cineplex, food-court and ice-rink, and – most significantly – the 20,000 sqm office block. Their placement, not just horizontally but also vertically, would ensure that visitors would be drawn up as well as across, which was very critical in this tall, 7-storey mall (Figure 3).

A further consideration in the mall design was the placement and configuration of the escalators. They had to be clearly visible to orient the shoppers, but also had to strike a balance between their convenience and increasing the tenants' footfall. This subtle manipulation of circulation routes, combined with the undulation of the arcades, the column-free spaces, the natural daylighting, and the introduction of exterior views, aimed to create a relaxed and natural environment for both the mall and office spaces.

Festival Walk is a one example of how mixeduse developments can be integrated into developed urban settings with a high level of public transportation. But what of situations where such provisions are minimal, or have to be created from scratch?

#### Case Study - North Edsa, Manila

North Edsa (Figure 4) is one of the oldest malls in Metro Manila. Starting originally with a single block of 120,000 sqm, it has added several annexes and car-park buildings over the years, and has now grown to a total GFA of about 260,000 sqm. It is located on the Epifanio de los Santos (Edsa), the main

平方米办公楼。它们水平而且垂直地布置,确保访客会到达四面八方,这是对一个7层高的商场很重要(图3)。

在设计商场时,另一考虑是自动扶梯的组织和布局。自动扶梯必需显而易见,引导购物者动线,并在便利与提高租户客流量之间取得平衡。细致处理的动线,结合了弧型的商业走道、无柱空间、自然采光,并引进室外景观,为商场及办公楼创造一个轻松、自然的环境。

又一城是其中一个示范例子解释综合体如何融合城市环境与高水平的公共交通。但如果这些条件是有限或完全没有的情况又会是怎样?

# 案例 - 马尼拉北EDSA购物中心

北EDSA购物中心(图4)是马尼拉其中一个历史悠久的商场。由原来的120,000平方米单栋建筑开始,此项目近年增加了多个扩建部份及停车场,总建筑面积已增加至260,000平方米。此项目位于通过马尼拉的主干道Epifanio de los Santos (Edsa)大道。大道上主要公共交通工具包括公交车、小巴及高架轻轨系统(但不停在商场前)。

原来的商场已有数个公交车站及停车处位于Edsa大道旁,但随着交通量的增长,这些停车空间已不足够。需要设一个更大规模的公共运输交汇处(PTI)于商场前,包括多个公交停车处、小巴、计程车站,并



Figure 4. North Edsa (Source: SM Prime Holdings Inc.) 图4. 北EDSA购物中心(来源: SM控股)

thoroughfare through Metro Manila, where public transport consists predominantly of buses, mini-buses, and an elevated light railway system (which does not, however, stop in front of the mall).

The original mall had several bus-stops and lay-bys located on Edsa, which were proving to be increasingly inadequate given the traffic growth. A more extensive Public Transport Interchange (PTI) was envisaged on the strip of site in front of the mall, which would contain multiple bus bays, mini-bus lanes and taxi-stands, and would cater to routes along Edsa and to the peripheral townships north of Metro Manila (Figure 5).

There were other considerations. North Edsa was facing stiff competition from adjacent retail centers which had added outdoor roof gardens to their mix, and the client wanted a similar component for to their development. There was also some concern that the mall, with its various annexes, had become too disjointed and dispersed over the years, and that some unifying element was needed to tie it all together.

The solution was to incorporate the PTI at the ground floor level, but to cover it with an elevated garden deck. This would not only provide cover for the PTI, but would also give the development a half kilometer long linear park, which could be used for al fresco dining, concerts and other social events. This park, would, in turn, tie the main mall and its annexes together, in effect creating a

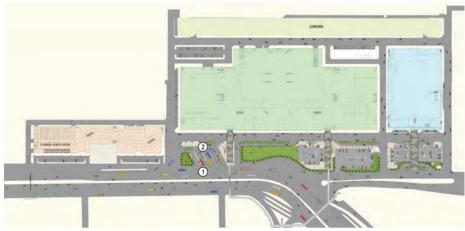


Figure 5. North Edsa, ground floor (Source: Arquitectonica) 图5. 北EDSA购物中心首层平面图(来源: Arquitectonica)

continuous circulation loop across all these components (Figure 6).

The design was implemented and remarkably successful; the new PTI decongested the roads, allowed for more efficient embarkation, and provided better waiting facilities for the commuters; while the roof garden gave the mall an added draw, and has since become a favorite F&B and entertainment destination along Edsa.

#### Case Study - Cebu Seaside City & SRP-1

Built on 30 hectares of reclaimed land along Cebu's South Coastal Road, Seaside City is 能容纳沿Edsa大道的路线到马尼拉北部的 外围城镇(图5)。

还有其他方面需要考虑。邻近的购物中心都增加了天台花园,使北EDSA购物中心面临激烈的竞争。业主因而希望有一个类似的部分在其项目中。同时,顾虑到商场因这些年新建的多个扩建变得不连贯且分散,需要统一的元素把所有这些结合在一起。

解决方案是把PTI放在地面层并以高架花园平台覆盖。这不但提供上盖给PTI,也为项目带来半公里长的带状公园,让人们户外用餐、举行音乐会及其他社区活动。此公园更将主商场及其附属建筑结合在一起,以循环动线横过所有部分(图6)。

- 1. EDSA
- 2. SKYGARDEN
- 3. PTI BELOW



Figure 6. North Edsa, second floor (Source: Arquitectonica) 图6. 北EDSA购物中心二层平面图(来源: Arquitectonica)

- SRP-1 2.
  - SRP-2
- SEASIDE CITY 3.
- MAMBALING ROAD
- SOUTH COASTAL ROAD

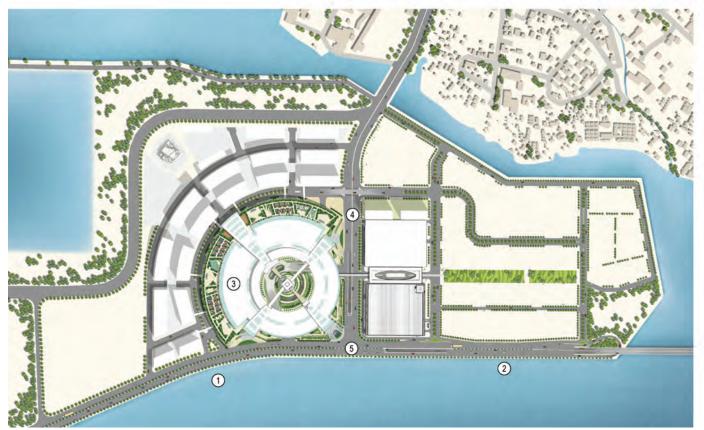


Figure 7. SRP Masterplan (Source: Arquitectonica) 南填海工程1总体规划 (来源: SM控股)



Figure 8. Seaside City (Source: SM Prime Holdings Inc.) 图8 滨海城购物商场 (来源: SM控股)

the first phase of a much larger masterplan, South Reclamation Project 1 (SRP-1) (Figure 7), which will eventually encompass over 850,000 sqm of mixed-use development, both medium and high-rise. The mall is the central driver around which this larger community will be built, acting both as an initial attractor for future developments, and the social hub for future populations. But like Manila, transportation in Cebu is still predominantly car and bus driven, and this is clearly reflected in the mall's design.

此设计相当成功。新的PTI疏通了道路, 让上下车更方便, 同时为乘客提供等候设 施。而天台花园为商场带来另外的优势, 成为Edsa大道最喜爱的餐饮及娱乐的好 去处。

# 案例 - 宿雾滨海城购物商场及南填海工 程1

宿雾滨海城购物商场位于宿雾南滨海路30 公顷的填海地段, 是南填海工程1 (SRP-

1) 更大型总体规划的首阶段(图7)。此 填海工程将涵盖超过850,000平方米的中 高层综合体发展。宿雾滨海城购物商场位 于这大型社区的中央, 既作为未来发展的 初期地标项目,也作为未来人口的社交中 心。跟马尼拉一样,宿雾的交通运输主要 是汽车和公交车,这一点在项目的设计上 明显反应出来。

291,000平方米的滨海城购物商场(图8) 的布局以圆环形式跨越5层。这布局部分 是因为地块形状,部分是因为这大型商场 的简单动线需要及9,200平方米地下PTI

The 291,000 sgm Seaside City (Figure 8) is laid out in a circular loop across 5 levels. This is partially driven by the shape of the site, partially by the need for a simple route by which to navigate this extensive mall; and partially by the need to accommodate the large, 9,200 sqm PTI at the lower ground level (Figure 9). This hub accommodates both city-wide and provincial buses, mini-buses and taxis, as well as a hybrid-bus shuttle system which connects the mall to other projects by the same developer within Cebu. The PTI can accommodate over 12 buses, and has the ancillary spaces to go with them: waiting areas, fast-food outlets, service and maintenance areas, and management offices.

It is not by accident that the PTI is placed at the center of the mall; nor the fact that the car-parking is wrapped around its north-western half (Figure 10). The idea is to disperse as many of the arriving and departing shoppers across as many quadrants and levels as possible, thereby spreading the footfall and rental value more evenly. This is also reflected in the spread of the drop-offs around the mall, at the east, south and north-western entry nodes, as well as the ceremonial drop-off at the center. And not coincidentally, the one place where a drop-off could not be placed, at the prominent south-western node, became the location for a pedestrian plaza and the monumental Cube installation (See Figure 8), which now regularly draws crowds for dramatic selfie-shots.

So whereas at Festival Walk the main commuter arrival was fixed by the MTR location at its eastern end, here it was possible to spread arrivals around the development for a more even footfall. The placement of anchors such as department stores, supermarkets, food-courts, ice-rinks and cineplexes was still important, but this was aided and supplemented by the integration of the parking and public transport terminals into the design.

Moving onto the wider context, one of the aims of SRP-1 is to create an integrated community in which people can both work and live in close proximity. This was endorsed by the Cebu government, who saw in such self-contained developments one way to decongest the roads of their rapidly growing city. Such communities, however, require more than the mere provision of functional infrastructure and facilities; they also need meaningful urban spaces and civic areas where the local population can meet for festivals, public celebrations and other social gatherings, though these, in turn, needed to be balanced against the developer's

(图9)的需要而组成。此交通枢纽能容纳全市和全省公交车、小巴、计程车及连接此商场和业主其他宿雾项目的混合动力穿梭巴士系统。此PTI可以容纳超过12辆公交车,并设配套空间,如:等候区、快餐店、维修和保养区和管理处。

把PIT放在商场中间不是因为停车场包围了西北边的一半,是经过精心策划的。此布置使到达及离开的访客尽量分散在不同的区域和楼层,从而更均匀地把客流量及租值分散。这也在分布于商场不同位置(东、南及西北入口节点)的上落客点和中央礼宾上落客点反应出来。突出的西南节点不能放置上落客点,经过谨慎策划后,用以布置步行广场及巨型立方体艺术装置(图10)。这装置现在已成为引人注目的自拍点。

又一城的主要往来受限于东面的港铁站,而此项目可以把到达访客的流量更平均分布。主要部分的布置(如: 百货公司、超级市场、美食广场、溜冰场及多屏电影院),都很重要,以辅助及补充去整合停车场和公共交通站。

宏观来看,SRP-1的其中一个目标是建立一个综合社区,让人们的工作及娱乐都近在咫尺。宿雾政府也认为如此。在迅速发展的城市里,自给自足的发展是疏通道路拥挤的方法之一。但这种社区不仅需要提供基础的功能设施和设备,更需要有意思的城市空间和公民区域,让当地人参与节日聚会、公众庆祝活动及其他社交活动。因此,设计要与业主的商业利益主导的覆盖率及容积率目标之间取得平衡。

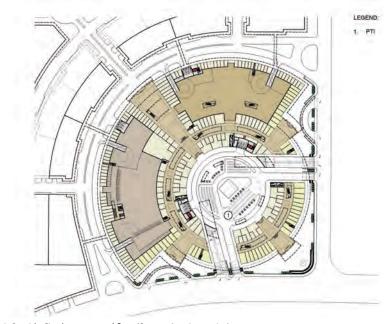


Figure 9. Seaside City, lower ground floor (Source: Arquitectonica) 图9. 滨海城购物商场地下一层平面图(来源: Arquitectonica)

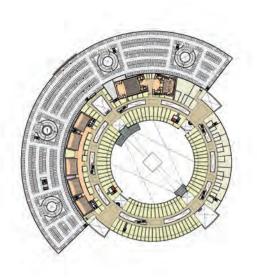


Figure 10. Seaside City, second floor (Source: Arquitectonica) 图10. 滨海城购物商场二层平面图(来源: Arquitectonica)

LEGEND:



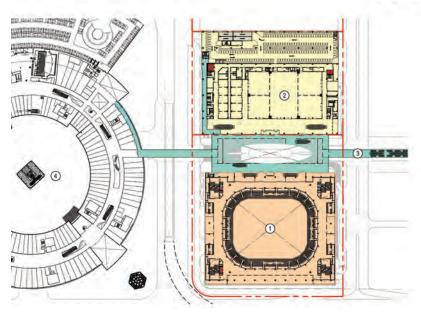


Figure 11. Arena & Convention Centre, fourth floor (Source: Arquitectonica) 图11. 会议展览中心及体育馆四层平面图(来源: Arquitectonica)

commercially driven site-coverage & Floor Area Ratio (FAR) targets.

The logical solution was to provide an open courtyard at the center of the loop, which acts like a town-square for the larger community (and to which was added a symbolic campanile in the form of an observation tower). In addition, the car-park to the northwest half of the mall holds a 600m-long roof-garden which can be accessed via pedestrian bridges from the future offices, hotels and serviced apartments which will surround it. This central park holds jogging paths, playgrounds, amphitheaters and al fresco dining spaces, and will act as the green lungs for the larger community. This strategy of elevating green spaces also carries over to the arc of towers to the north-west of the mall, where a landscaped pedestrian path is envisaged to run at the podium level to connect the various developments; and to the SRP-2, an additional masterplan component to the east of Seaside City.

# Case Study – Cebu Arena, Convention Centre and SRP-2

South Reclamation Project 2 (SRP-2) is a further 26-hectare mixed-use masterplan site acquired by the developer of SRP-1 under a joint-venture agreement. While still under development, its first phase – a three-level, 67,000 sqm exhibition and convention center, and a 15,000-seat multi-purpose arena – have already been designed. These require their own carefully considered drop-offs, traffic

circulation and parking buildings, but they are also connected via a central landscaped deck and pedestrian bridges to the Seaside City, its parking building, and the PTI at the lowerground level (Figure 11).

Earlier designs for the arena and convention center had located them to a remoter site to the west of Seaside City. However, when the opportunity to acquire SRP2 arose, it was quickly realized that the corner site on Mambaling and South Coastal Road had several advantages: it was closer to the PTI and the parking facilities of the mall; it allowed more immediate entries & exits to the perimeter roads, (thereby freeing internal roadways from congestion during major events); and it offered a more prominent site for these major civic facilities.

In addition, the elevated bridges continue eastwards from the central landscaped deck to come down in a linear park, which will become the center-piece of the future SRP-2 masterplan. From this park, arcades and other elevated walkways will radiate to form a pedestrian loop which ties back to the mall and SRP-1. Bicycle lanes will also be provided, as will a shuttle bus service which will run from the mall's PTI to selected stops on both masterplans. Finally, a vehicular bridge running across the intervening Mambaling Road will allow cars to cross from one masterplan to the other without congesting either Mambaling or the South Coastal Road systems.

In addition to fire and life safety, both the convention center and the arena needed

在环形的中心设置开放式庭院是合理的解决方案,就像这大型社区中的小镇广场(和象征性的钟楼形了望塔)。占了半个商场西北方的停车场中,包括了600米长的天台花园,能透过人行天桥接通将来位附近的办公楼、酒店及服务式公寓。此中央公园拥有跑步径、运动场、露天剧场和户外用餐空间,会是此大型社区的绿地中心。提升绿色空间的策略同时把塔楼的弧度延伸到商场的西北部,于平台层设有园林人行路,接通不同发展项目及位于滨海城购物商场东部的另外总体规划部分—SRP-2。

### 案例 - 宿雾体育馆、会议展览中心及南 填海工程2

南填海工程2(SRP-2)是SRP-1业主的合资项目,占地26公顷的综合体总体规划用地。虽然此项目仍处于开发阶段,但第一阶段(67,000平方米的3层会议展览中心及15,000座位的多用途体育馆)已经设计好。其上落客点、交通动线和停车场经仔细考虑,连接中央园林公园及人行天桥到滨海城购物商场、其停车场及地下PTI(图11)。

会议展览中心及体育馆的早期设计置于滨海城购物商场西面的远处。但随着发展SRP2的机会出现,我们发现地块角落的Mambaling及南滨海路位置有几个优势:邻近商场PTI及停车设备、为周边道路提供更直接的出入口(在大型活动时疏通内部道路的拥塞)、为大型文娱设施提供更优越地点。

此外,由中央园林公园一直向东伸延至带状公园的高架桥将会成为未来SRP-2总体规划的核心。以公园为中心,商业走廊和其他高架人行道将辐射成行人环路,紧连着商场及SRP-1。项目设有自行车道,并提供穿梭巴士行驶商场PTI与两个总体规划之间。其后更将会设行车天桥横跨Mambaling路中间,让车辆由一个总体规划跨越到另一个,避过Mambaling路及南滨海路系统的拥挤。

除了消防和生命安全设施,会议中心及体育馆都要符合一些行人和车辆的要求。主会场楼层需要让车辆直接抵达(多层会展中心曾透过相邻的停车建筑达到此效果)。贵宾上落客点、供观众的大型户外排队区域、便携式发电机及转播车都要提供。此外,体育馆要够灵活,根据球队、活动类型及票价划分观众。为了达到此目的,其设计让最大机会使用公共交通的上层观众直接由连接着滨海城购物商场及其PTI的中央园景平台进入会场,减少下面车辆到达的拥挤。最后,会议中心、体育馆(及滨海城购物商场)都比Mambaling路及南

to meet several pedestrian and vehicular requirements. The main venue floors of both had to be directly accessible to vehicles (which, in the multi-level convention center, was achieved through the adjacent car-park building). VIP drop-offs and large outdoor queueing areas for spectators had to be provided, while service bays for portable generators and broadcast vans had to be found. In addition, the arena circulation had to be flexible enough to allow for spectator divisions according to teams, event-types and ticket prices. To achieve this, its design allowed upper tier spectators, who are more likely to arrive by public transport, to enter directly from the central landscaped deck (which is in turn connected to the Seaside mall and its PTI) thereby decongesting the vehicular arrival areas below. Finally, both the arena and the convention center (as well as Seaside City) are elevated by about 4m from the surrounding Mambaling and South Coastal Road systems, allowing them to function as places of refuge during coastal floods and storm surges.

The further integration of both SRP-1 and 2 into the expanding urban context of Cebu is currently being explored with the local government. A future ferry terminal at SRP2, possibly connecting to Mactan Island and its airport, is under consideration. Additional bridges across the river to the north and east of SRP-2 are being discussed, as is a new bridge to another, much larger masterplan, the Cordova Reclamation, to the south-east. The current plans for SRP-1 and 2 allow for the integration of these elements, if and when they are implemented, but in meantime are designed to work with, and alleviate the impact on, the existing roadway systems.

#### Conclusion

Designs are driven, and their viability largely determined, by how well they connect into, utilize, and build on existing transport systems. As we have seen, successful projects depend on how people arrive and leave, and how they are guided around the development between those two points.

However, as illustrated, context can vary enormously, from highly developed urban settings, to growing cities where public transport systems and their existing facilities may be insufficient for the large-scale developments planned.

Where such connections or transport facilities are limited, or even non-existent, insightful developers are often willing to invest considerable resources in providing these at their own cost. Less altruism than simple commercial sense is involved, for it is clear that for any large-scale, mixed-use development to succeed, workers, residents and visitors need a convenient way to access it.

Such investments will sometime equate to greater control for the developer, allowing them more leeway in shaping these connections and facilities for the benefit of the project; and, ideally, for the benefit of the public too. In the end, the most successful projects are those which manage to balance public needs with the development's commercial goals. The former can frequently be sacrificed for the latter, but more insightful developers will understand that the two are not mutually exclusive, and that considerable value can be added through the thoughtful integration of transport networks and their facilities into their projects.

滨海路设施周围提高4米,在海滨水灾和 暴风雨时作为避难场地。

为了扩大宿务的城市环境,正于当地政府探讨SRP-1及2的进一步整合,考虑于SRP-2设渡轮码头联接麦克坦岛及机场。此外也商议增加过河天桥横越SRP-2东部和北部,及另外一条天桥,连接更大的总体规划-科尔多瓦填海工程的东南部。如果确定实行,现行SRP-1及2的规划也可融合以上元素,并同时能配合现有道路系统及缓和其影响。

#### 总结

项目的设计及可行性很大程度决定于其连结、应用及已有的运输系统。我们可以见到,成功的项目在决于人们如何往来,还有怎样引导他们围绕着项目往来。

但是由以上例子可见,由高度发达城市环境,到公共交通系统和现有的设施可能不足供给大规模发展的发展中城市,背景可以千变万化。

在交通连接或设施有限的地方,有见地的 发展商都愿意以自己的成本投入相当资源 提供这些设施。方便员工、住客及访客到 达明显是大规模综合体的成功之道。

这些投资有时侯相当于给发展商更大的控制权,让他们有更多余地塑造这些连接和设施,为项目,甚至公众带来效益。说到底,最成功的项目就是能在公众需要及业主商业目标之间取得平衡。为达到商业目标,公众利益需要很多时候都会被放弃。但有见地的业主会明白两者并非相互排斥。把交通网络及设施整合在其项目内,能够带来可观的增值。