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Vertical Public Realms: Creating Urban Spaces in the Sky

垂直公共空间: 营造空中的城市空间



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Abstract

The resurgence of the 'Streets in the Sky' concept is driving the recent transformation of social and public spaces in vertical cities, with Asia leading the way. The Pinnacle@Duxton in Singapore claims to succeed in this latest development through creating social and public spaces at height above the city. These spaces are considered a collection of 'mini-parks' interconnected by a continuous pathway across seven 50 story towers. This paper focuses on how these spaces work, and how successfully they foster social interaction using observational and post occupancy analysis, including interviews with the occupants. The results suggest the spaces most appreciated by residents are those with a dedicated function, and that stringent rules related to the use of social and communal spaces at height could provide a threat to their future success.

Keywords: Singapore; Streets in the Sky; Skygarden; Skypark; Social Sustainability

摘要

以亚洲为首的许多国家正在积极推动社会公共空间在垂直城市空间中的转变，“空中街道”这个理念得以再次被关注。新加坡达士岭组屋是现阶段通过在城市上空营造社会公共空间而取得成功的案例。这些社会公共空间是由穿过七栋五十层高楼的路径交错衔接而成的许多“迷你公园”的集合。本文通过观察、使用后分析和对使用者进行采访等研究方法，对社会空间的使用以及它们是如何成功的促进社会互动作用进行研究。研究结果表明那些最受居民喜爱的空间往往具有一个专用的功能，而那些关于在高层中如何使用社会和公众空间的严格规则可能对未来高层空间成功设计造成威胁。

关键词: 新加坡; 空中街道; 空中花园; 空中公园; 社会可持续性

Introduction

'Streets in the Sky' refers to the concept of elevating communal areas typically found on the ground into higher planes within tall buildings. This idea was first brought to prominent attention in Le Corbusier's vision for high-rise communal living, with suggestions of up to 1,600 people residing in a single-slab 'vertical village', complete with an internal shopping street halfway up, a recreation center and children's nursery on the roof and a generous surrounding of parkland made possible by the density of the accommodation in the slab itself. The legacy from this concept gave us Unite D'Habitation in Marseille and Nantes, with many other variations across Europe. Since then, 'Streets in Sky' has been copied with little regard for its careful considerations of communal areas, the garden space created above, beneath and around, as well as the social infrastructure within. The banality of many post-war imitations created more social malaise than stewarding the wellbeing of high-rise occupants. The legacy of this was to a large degree hundreds of poorly designed, post-war high-rise blocks that dominated the

引言

“空中街道”是指将原本建造在地面上的公共区域抬升至高层建筑更高楼层中的空间。这个想法最早出现在勒·柯布西耶对高楼公共居住的关注中，多达1600人居住在一个单板式楼的“垂直村落”之中，高层中部配有内部商业街，屋顶布置了娱乐中心和幼儿园，这种板式楼的高居住密度使其周围空出大片公用场地成为了可能。基于这个概念，设计师设计出了坐落在马赛和南斯的集合住宅，同时使欧洲发生了许多其他的变化。从那时起，“空中街道”已经被用来解决集合住宅公共区域缺失的问题，并在“空中街道”的上、下及周围创建附带提供社会基础设施的花园空间。但是，许多战后模仿类似建筑类型的居住区并没有给高层居住者带来幸福生活，反而制造了更多的社会弊病。结果，这种在二战后设计建造的高层建筑群很大程度上主导了城市景观，他们当中绝大部分因为彻头彻尾的失败而被拆除。尽管现在很多国家(人)尝试推进发展更新版本的高层类型，但是由于资源匮乏、犯罪率高、基础设施不完善等负面因素，这种尝试往往被规划法令和公众舆论所扼杀。

urban landscape and in most cases have now been demolished as outright failures. Stigmatized by poverty, crime and poor construction, attempts to build more recent versions of this typology have been thwarted by planning laws and public opinion.

The Emergence of the 'Skypark' in Singapore's High-Rise Housing

The past couple of decades have witnessed many global changes covering economic, political, social and cultural practices with a significant shift towards Asia. As a result, high-rises have experienced an unprecedented resurgence becoming one of the most noticeable symbols of these changes. One major and previously unexpected impact has been the revival of the 'Streets in the Sky' concept driving the recent transformation of public spaces in vertical Asian cities. Singapore is exploring this concept through the creation of social and public spaces in the sky within its recently built high-rise social housing projects. Singapore's approach to the 'Streets in the Sky' concept comes in the form of a skypark. Skyparks are spaces built in high-rise buildings on upper floors as open green places. Historically, the skypark evolved from green roofs being placed on car park podiums, typical of Singapore's 1980-2000 high-rise stock (Yuen & Hien, 2004). At the time though, there was little sense of awareness that these spaces could provide social places with most of Singapore's high-rise public housing using its open ground floor area as the predominant public and social realm (Goh, 2001). Earlier designs for skyparks were limited as spaces for contemplation and visual delight, rather than active neighborhood spaces. However, the Housing Development Board (HDB), Singapore's leading supplier of high-rise housing stock is now promoting the skypark as the new catalyst for making successful places for social and public use in high-density developments. The Pinnacle@Duxton was planned and designed as the testing ground for this new concept, with the completed building consisting of seven towers linked together by significant skyparks at the 26th and 50th stories, with the former accommodating communal spaces for the residents only, and the uppermost floor as an extension of the public realm (see Figure 1).

The design of these skyparks can be considered similar in terms of urban design theory to how 'mini-parks' (Marcus & Francis, 1998) work in high-density neighborhoods. The reason for this is most social-public spaces built at height do not have the surface area to accommodate

在新加坡高层住宅中“空中公园”的出现

在过去的几十年中，人们目睹了亚洲许多涉及经济，政治，社会和文化实践等方面的全球化显著变化。高层建筑在亚洲的崛起是这一系列变化中最显著的标志之一。“空中街道”概念的如文艺复兴般推动了公共空间向垂直城市发展的转变。新加坡通过最近建成的高层保障性住房项目探索尝试营造空中的社会公共空间。新加坡项目通过“空中公园”的形式扩展“空中街道”理论。“空中公园”是指建在高层建筑上层(非地面层)的开放式绿色空间。从历史进程看，“空中公园”是由1980~2000年间新加坡高楼之中被放置在停车场平台上的屋顶绿化演变而来(Yuen & Hien, 2004年)。然而在当时，人们并没有意识到这些空间可以作为社会交往空间，大部分新加坡社会保障房仅仅使用开敞的地面空间作为主要的公共社交场所(Goh, 2001年)。早期的空中公园设计仅仅局限于作为思考和视觉享受的空间，并没有意在营造积极的邻里空间。不过，由新加坡建屋发展局(HDB)投资兴建的高层住宅高层住宅——新加坡达士岭组屋，引入“空中公园”概念，并且将其作为营造高密度发展过程中成功的社会公共使用空间的新型催化剂。新加坡达士岭组屋的建筑群包含了7座塔楼，在七座塔楼的第26层和第50层分别建造空中公园，将它们“编织”成一个整体。其中26层除了居住空间外，还包含了仅供居民服务的公共交往空间，而屋顶层50层则作为公共空间的延伸。无论在规划还是设计方面，这一项目都可以视作建筑设计对这一概念的全新尝试(见图1)。

“空中公园”这一概念与Marcus & Francis (1998年)提出的城市理论术语“迷你公园”很相像，这一概念是在阐述迷你公园对于高密度居民区的作用时提出来的。“迷你”的提出是因为在高空中没有足够的使用面积来对更大尺度的公共空间进行布置。“迷你公园”占用非常小范围的城市空间，通常只有几间房屋的地段大小，这些公园被塞进并分散在整个城市结构，供附近的居住区居民服务(Jasprizza, 1999年)。“迷你公园”往往充当缩小版的邻里公园，主要功能包括小的活动空间，儿童游乐区，与朋友休闲或小聚等。迷你公园也可以理解为供现代人逃避喧嚣烦躁城市而休憩的绿洲。对于这个特殊的原因，大多数迷你公园往往建在商业区或高密度的居住区(Carmona等, 2003年)。

自从新加坡达士岭组屋的建成到现在已经四年多了，目前为止有大约3000多个家庭入住，其人员规模组成相当于一个小型的城镇或者村落。空中花园能否成功地成为高层建筑中有效的城市空间?新加坡达士岭组屋作为一个解释性案例，在高层建筑中特意建造交往空间，为我们提供了一个运用实证理论去阐述这一问题的难得机会。

使用后评价

本文对新加坡达士岭组屋的空中花园的评价主要分为三个方面：首先是检查建筑空间品质；其次是对其使用情况进行观察；最后通过对空间的使用者进行采访。其中，对居住在楼内的共计十五人进行采访，采访对象分别代表居住在居住区内的老人，家人和青少年。

第26层和第50层的迷你公园的尺寸是由建筑物的结构边界决定的。每个迷你公园的宽度相同，均为25米，长度的设置随着住宅楼体的安排而变化(见图2和图3)。所有七个公园共同构成一个大的统一的空间，虽然每一个空中公园都被赋予特定的位置和空间大小，但是当人们身在第26层之中时，很难将它们作为一个整体来欣赏。尽管他们设置在同一楼层，给人们的感受却像是一个个单独的个体。

Marcus & Francis (1998年)指出一个完善的公共场空间都应该具有



Figure 1. The Pinnacle@Duxton, Singapore. Skyparks connecting seven towers creating social/communal spaces at height above the city (Source: Author)
图1. 新加坡达士岭组屋：在城市上空创造空中公园连接七座塔楼营造社会公共交往空间。(来源：作者)

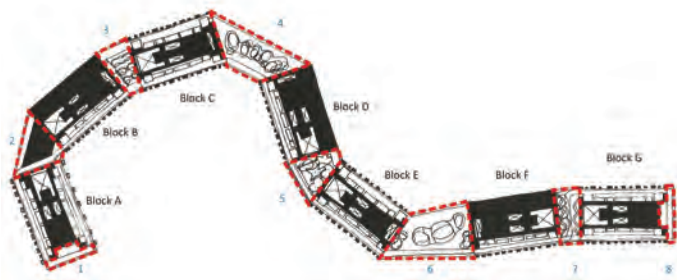


Figure 2. Plan illustrating the overall layout of the 26th floor social spaces. A jogging path connects all the spaces together as one skypark (Source: Author)
图2. 第26层中的交往空间的整体规划布局: 一条慢跑路径将所有空间连接在一起作为一个空中公园 (来源: 作者)

the size of a larger public space. Mini-parks are urban spaces on a very small scale usually only a few housing lots in size tucked into and scattered throughout the urban fabric to serve an immediate settlement (Jasprizza, 1999). Mini-parks tend to act as scaled-down neighborhood parks, with functions including small event spaces, play areas for children, and spaces for relaxing or meeting friends. Mini-parks can be a form of refuge against the hustle and bustle of urban life, often defining their character as an oasis for rest and relaxation. For this particular reason most mini-parks tend to be in the business districts or high-density areas (Carmona et al., 2003).

It has been four years since the Pinnacle@Duxton was built and it is now inhabited by approximately 3,000 families making it comparable in population to a small town or village. With the existence of these purposely built social spaces at height, the Pinnacle@Duxton presents a unique opportunity as an explanatory case study for deriving an empirical response to the question of 'do skygardens work successfully as urban spaces in high-rise buildings?'

Post Occupancy Evaluation

The evaluation of the skygardens at the Pinnacle@Duxton is focused on three strategies; first examining the architectural qualities of the space; second, an observation of use; and finally interviews with people using the space. In total 15 people were interviewed representing three groups living in the settlement: the elderly, families and teenagers.

The sizes of the mini-parks on both the 26th and 50th floor are defined by the structural boundary of the building. Each space has the same width of 25 meters with various lengths set by the arrangement of residential blocks (see Figures 2 and 3). All seven mini-parks are designed to act as one large unified space, though given the location and dimensions of each, it is difficult to appreciate the skypark as a whole when on the 26th floor. The mini-parks are more likely to exist as individual entities despite their location at the same level.

Marcus and Francis stated that good public spaces all have well designed entrances and boundaries (1998). Of all the seven mini-parks the Senior Citizen Fitness Corner (3) and Children's Playground (5) can be considered the best designed in this respect. Although located in between two pathways and thus acting as 'through-the-lot' type parks, neither space is used as a thoroughfare. Both pocket spaces are elevated on a raised platform. The platform gives a good sense of boundary for each park. The raised platform also functions as benches, marking the entrance while allowing its users to watch pedestrians walking adjacently (see Figures 4 & 5). A small entrance highlighted by a ramp and low wall faces the walkway. This small entrance announces

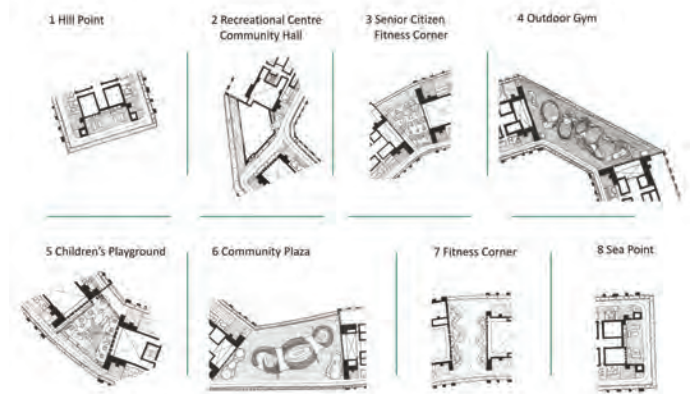


Figure 3. Plans of the seven mini-parks on the 26th floor, along with the Recreational Center Community Hall (2) (Source: Author)
图3. 布置在26层的带休闲中心社区会堂(2)的七个迷你公园的平面图。(来源: 作者)



Figure 4. The Children's Playground. Young families make up many of the inhabitants of the Pinnacle@Duxton. This pocket park clearly addresses the need of that user group (Source: Author)

图4. 儿童游戏区: 新加坡达士岭组屋的居住成员由许多年轻的家庭组成, 这个袖珍公园无疑强化了使用者的需求。(来源: 作者)

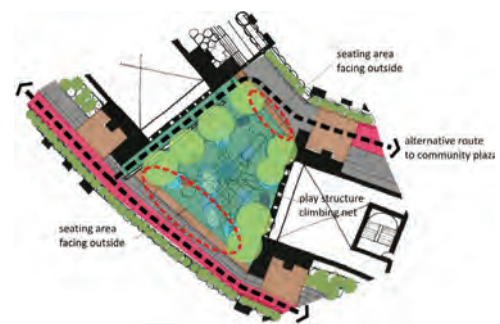


Figure 5. Plan of the Children's Playground. Seating areas face outwards providing a sense of boundary and protection (Source: Author)

图5. 儿童游戏区平面图: 朝外的休息区提供边界的围合感和保护感。(来源: 作者)

精心设计的入口和边界。在所有七个迷你公园中, 老年健身区(3)和儿童游戏区(5)可以被认为是这方面最好的设计。虽然它们处于两条通道之间, 属于“高流量人流通过”类型的公园, 但是他们的空间作用并没有仅仅作为一条通道。两个与通道连接的入口空间被提升到抬起的平台上。该平台为每个公园提供了良好的边界感。升起的平台既是起到了入口标识的作用, 又可以作为长椅供人们休憩, 同时并不妨碍临近行走的人之间的视线交流(见图4和5)。坡道和面朝过道的矮墙使小的入口空间得到强化。这个小型入口强调了袖珍公园的位置, 打断了原本平行的通往两个方向的路径之间的循环。这种布置很好的防止人流直接进入, 特别是那些在慢跑道上慢跑的人们。这种空间的布置既起到了边界的效果, 同时也限制了人们通过此处狭小空间, 营造了空间的私密性

the location of the pocket park interrupting the circulation in between two pathways that runs parallel to both sides. This prevents direct access for circulation, especially by joggers on the adjacent jogging path. This feature doubles as a boundary and controls access into the pocket spaces, creating a sense of privacy and protection. The other mini-parks are perhaps less successful in this sense, as their boundaries are less clearly defined and have no significant architectural elements to indicate ingress. Although the Outdoor Gym, Community Plaza, Sea Point and Hill Point do have different floor surfaces indicating their boundaries from the pathway, the effects are weak.

The sky-parks in the Pinnacle@Duxton are focused primarily towards two programs; rest and recreation. It is common for social spaces in high-rise settlements around Singapore to be inclined towards rest and recreation rather than socializing (Appold, 2011; Yuen & Hien, 2004). This justifies why most mini-parks in the Pinnacle@Duxton are pleasure gardens. Though these themed gardens do imply some suggestive functional use, the architectural designs do not encourage social interaction (see Figures 6 & 7). Nonetheless, two of the pocket spaces do successfully reflect their function from design. The Senior Citizen Fitness Corner (3) and Children's Playground (5) reflect the desires of families and the elderly living in the settlement without over-abstracting the design. The function clearly informs its users as to how the space should be used. This functional dimension is important as social spaces need to be responsive to their target population (Marcus & Francis, 1998).

In general, the mini-parks are well-received by the elderly as pleasure parks. These themed gardens are in fact good for quiet use and contemplation and are able to provide enjoyment for the elderly as their intermediate sensory level appeals to them. These themed mini-parks enable them to become autonomous within a secure environment without the need to intermingle with larger crowds on the ground level neighborhood park. As the proportion of older persons in the Singaporean population began to increase, aging issues began to grow especially in the design of high-rise housing. Planners assert the need for social interaction, privacy, personal space, safety, security and mobility in old and new housing estates. Most of the elderly living in high-rise settlements around Singapore are in the retirement age of approximately 55 to 70. They have the ability to be independent and mobile. The types of social activities they usually engaged in are self-initiated hobbies, leisure, recreation and health and fitness (Marcus & Francis, 1998; Yuen & Hien, 2004). The Senior Citizen Fitness Corner caters for these needs as a 'prosthetic environment'. A prosthetic environment is one that permits the older person to function, in spite of disabilities, by offering support when needed but allowing for independence and learning (Marcus & Francis, 1998). Prosthetic elements such as an abundance of handrails are available on the 26th floor skydeck. The elderly user group interview revealed the desire to make more mini-parks on the 26th story sky-park that adhere to their needs. Some of the more undefined social spaces may benefit better as places for the elderly to use. An elderly resident expressed her disapproval of these mini-parks by stating:

"I think these spaces are a waste of public money. They offer little value to how I could use it. I would like the management to think about changing these obsolete pretty landscapes into vegetable plots or personal gardens. I would love to have a personal garden. I love gardening. I would not mind paying monthly to the management in having a small lot for gardening."
(Interview by author, 14 April 2011)

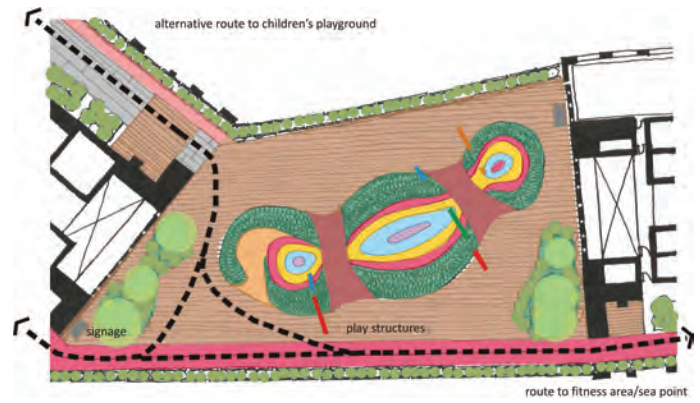


Figure 6. Plan of the Community Plaza. Note that the space carries little significance as a place for gathering. Moreover, as a pleasure garden it fails in making any impression of a lush green meadow. Observation reveals this mini-park is often missed as occupants walked past it to go to the children's playground (Source: Author)
图6. 社区广场平面图: 从图中可以看出, 空间作为聚会的地方承载意义不大。此外, 作为一种娱乐性质的花园未能提供一个郁郁葱葱的绿色草地的意象。观察发现, 这个迷你公园常常被居住者忽略掉并且步行穿过它到达儿童游戏区。(来源: 作者)



Figure 7. Picture of the Community Plaza. This image of the mini-park shows the confusing state of its function (Source: Author)
图7. 社区广场照片: 这张迷你公园的照片显示了其功能的混乱状态。(来源: 作者)

和保护感。在这方面, 其他小型公园也许并没有很成功, 因为他们的边界并没有明确界定, 也没有运用明显的建筑手法以暗示入口位置。虽然室外健身房, 社区广场, 观海点和望山点确实运用不同的地板表面以暗示其与道路的界限, 但是其影响是微弱的。

新加坡达士岭组屋的空中公园主要解决使用者的两个问题: 休息与娱乐。倾向于休息与娱乐功能而不是社会交往功能, 这对于新加坡附近的高层居住区中的公共空间功能设置是很常见的 (Appold, 2011年; Yuen&Hien, 2004年)。这解释了为什么大多数达士岭组屋的小型公园, 都是娱乐性质的花园。虽然这些主题花园确实暗示了某种使用功能, 但是建筑设计本身没有鼓励社会交往 (见图6和7)。然而, 老年健身区 (3) 和儿童游戏区 (5) 都成功地从设计之中反馈了它们的功能。他们反映了家庭和老人对于居住区的设计不要过于抽象的愿望。空间中清晰的功能使得用户懂得如何使用这些空间。这种清晰明确的功能指向很重要, 因为社交空间需要服务于它的目标人群 (Marcus&Francis, 1998年)。

一般情况下, 迷你公园作为娱乐性质的公园被老年人广泛接受。这些主题花园其实是很好的静心和冥想的场所, 同时也能够供老人娱乐使用, 因为在一个感官层面上, 这些花园能很好的吸引他们。这些主题的小型公园提供了一个相对独立、安全的环境, 而避免与水平地面上邻里公园内更大的人流接触。在新加坡, 由于老年人人口比例的增加, 老龄化问题尤其是在高层住宅的设计

Parents responded to the use of the mini-parks with good remarks, though some wished they could accommodate smaller and younger children as users. While the secured environment on the 26th story skydeck is ideal for parents taking their children outdoors, the needs for play areas for young children conflicted with the building management as they expressed unhappiness over children removing sand at the base of the play area planter box. They view this as an act of vandalism, being afraid of them throwing it off the platform; though, according to Greene (1998), young children love sand pits in play areas. A good sand pit with a tree providing shade from the sun is a perfect spot for them to play. It is not anti-social behavior or an act of vandalism, but a sign that some user groups feel neglected. Continued visits to the park revealed the sand was eventually removed by the building management.

Management And Maintenance

The skygardens in the Pinnacle@Duxton are owned and managed by the Tanjong Pagar Municipal Area, with maintenance generally excellent and undertaken to high standards. Research reveals the 26th floor mini-parks are clean and tidy at all times, with plants watered by an automatic system that sprinkles water three times a day. The skydeck is fully equipped with surveillance cameras monitoring all angles. Each mini-park is equipped with at least one camera monitored by the security office located at the ground floor of the settlement. The Tanjong Pagar Municipal Council oversees all aspects of the skydeck management, charging a small fee monthly from the residence for this upkeep.

The mini-parks are designed to be vandal proof throughout, though this research suggests that the vandal-proof design may pose a

之中得到体现。设计师认为无论是老旧还是新建住宅区都需要关注社会交往、私密性、个人空间、安全性和流动性等问题。大多数生活在新加坡附近的高层住宅区里的老年人都是55至70岁的退休人员，他们具有自主独立和移动的能力。自我发起的爱好、休闲、娱乐、健康及健身是他们主要的社会活动类型 (Marcus & Francis, 1998年; Yuen & Hien, 2004年)。老年健身区作为一个人工的环境主要满足并迎合这些使用需求。这种人工环境无论老人是否残疾都在他们有所需要时，通过允许他们独立自主学习提供必要的支持 (Marcus & Francis, 1998年)。在第26层的观景台提供设置数量充足的扶手等人工元素。在对老年用户组采访时发现，他们希望更多例如第26层中的空中公园那种可以满足他们需求的空间。更多不确定的社会空间可以更好地为老年人造福。然而，一位年长的居民表达她对迷你公园的不同看法：

“我认为这些空间是在浪费公共资源。这些空间对我的使用提供了很少的利用价值。我想管理层应该考虑将这些过时的景观变成菜地或私家花园。我很想有个人花园。我喜欢园艺。我不会介意每月支付给管理层一笔费用去拥有一小块可以种植的土地。”(采访者: 作者, 2011年4月14日)

虽然有些人希望这些空间能适应更小、更年幼的孩子，但是父母还是对迷你公园的使用给出了良好的评价。尽管第26层空中公园的安全环境是非常适合家长带着孩子进行户外活动，但是供孩子们玩耍的场地的使用需求跟楼宇管理的想法相冲突。孩子们总是拿走在游乐区种植箱底座里的沙子，楼宇管理员表达了他们对孩子这种行为的不满。他们担心孩子们把沙子从平台偷走，并认为这是一种恶意破坏的行为；不过，Green (1998年) 认为幼儿喜欢有沙坑的游乐区。一个质量优良、同时由大树提供阴影的沙坑，绝对是他们玩耍的理想天堂。这不是反社会行为或故意破坏的行为，而是一种迹象，表明一些用户群体感到被忽视。在对公园的持续探访后作者发现沙子最终被楼宇管理员移走。

管理与维护

新加坡达士岭组屋的空中花园是由丹戎巴葛市政区采用一套完善的高标准的维护体系来进行管理和维护的。研究显示第26层的迷你公园总是干净整洁的，植物由自动灌溉系统灌溉，一天浇水三次。观景台在各个角落都配备了监控摄像头。每个小公园至少配备一个摄像头并由位于一层的保安室监控。丹戎巴葛市议会将对空中公园管理的各个方面进行监督，管理费用每月从当地居民那里收取少量费用。

虽然研究表明防止破坏公共财物的设计可能会对空间使用的目的以及用途造成影响，迷你公园的设计还是具有防止破坏公共财物的功能的。建造小型公园设施时运用沉重的和不可改变的材料可能会让用户觉得公园环境设施是不友好的；管理人员将使用者视为敌对者看待，这可能会让用户感到被冒犯 (Greene, 1998年)。为了避免不恰当或者不正当使用的，官僚机构的管理者设想出更多法规来规范使用者使用空间 (见图8)。区域管理层认为必要的规章制度有助于居民的幸福和安全。下面的采访中所提及的安全性正是作为这些规则的主要驱动力。

“总是有些东西是我们没有按照刚开始的总体计划实施的。我们决定设置障碍门阻止那些不受欢迎的人进入居住区，进而减少复杂人员进入第26层公共区域，也避免在其中发生不正当的行为。我们留意那些带食品和饮料的人，因为一些居民可能喝酒，如果他们喝醉了，这些人在空中观景台之上可能会危及自己 and 他人；此外，食物也有可能使空间变脏；饮料塑料瓶子可能会被风吹到下面的社区公园。没有家长监管的孩子是危险的，他们可能爬过园区围墙和围栏。我们不能保证人们在空间里的安全。”(采访建

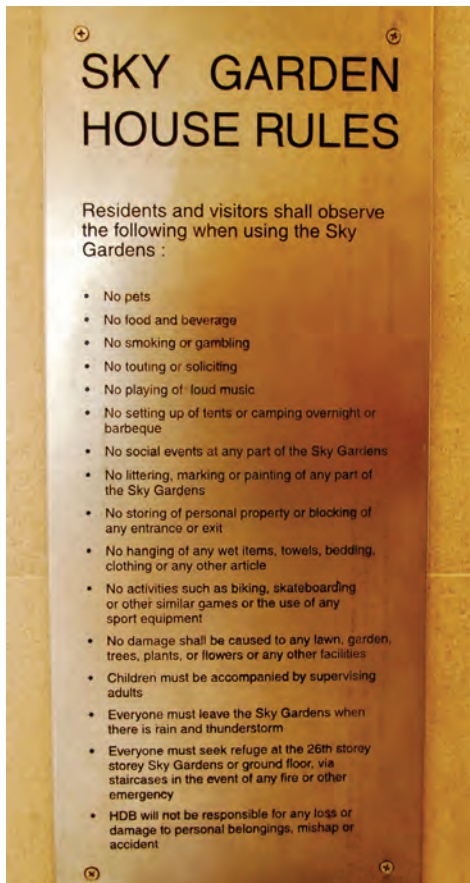


Figure 8. Skygarden House Rules (Source: Author)
图8. 带空中花园的住宅守则 (来源: 作者)

threat to the aims and intentions of the spaces. Mini-park facilities that are constructed with heavy and immutable materials may make users feel the park is unfriendly; users may feel offended because the management views users as opponents (Greene, 1998). More over the laws setting up 'how to use the space' were conceived because of the bureaucracy related to avoiding inappropriate or dysfunctional usage (see Figure 8). Block management considers the rules and regulations necessary to the well-being and safety of the inhabitants. The interview below mentioned safety as the main driver for these rules.

"There are things that we have implemented not according to the first general plan. We decided to put barrier doors to stop undesirables coming into the settlement to conduct deviant activities on the 26th floor. We viewed by bringing food and beverages, some residents might drink alcohol. When they are drunk, these people might endanger themselves and others on the skydeck. Furthermore, food would make the spaces dirty. Styrofoam containers might get blown by the wind onto the neighborhood park below. Children without supervision are dangerous and they might climb over the park walls and fence. We cannot guarantee the safety of people on it" (Interview with HDB, 11th August 2010).

The usage of public and social spaces is subjected to a lot of bureaucratic 'do's and don'ts' set up by the management of the Pinnacle@Duxton. The rules set up on 'how to use the space' were conceived to avoid inappropriate situations towards the usage of the mini-parks that may cause injury or libel acts from other users. This is considered an unnecessary bureaucratization. The subjected bureaucracy towards social spaces on the 26th story skydeck may result in the space becoming dreary for use - rules like 'no social events' will obviously provide a barrier to social interaction. In order for the people of any settlement to feel a sense of ownership towards the park they need to have freedom in using it. People are more likely to take care of their park and see it respected if they have a sense of ownership in it (Carmona et al., 2003; Carr, Francis, Rivlin, & Stone, 1992; Gottlieb & Glaeser, 2006). That sense of ownership comes when they have the say and right on how to use the space. Observation reveals all user groups want participation in how they could use the mini-parks on the 26th floor sky deck, and many feel they are entitled to rights as they pay monthly maintenance fees for their upkeep. When the management was asked about these concerns, they felt residents wanted too much out of a small fee paid to a public housing development compared to facilities in a private gated condominium. Interviews with 15 residents reveal that 10 out of 15 feel the security and control measures are unnecessary. A 34-year-old respondent expressed her disapproval to the rules by saying: "I feel very secure socializing up here but I am not allowed to bring visitors in. I have a lot of friends from neighboring settlements who want to spend their evenings here on the skydeck."

Some residents do bring visitors into the park but they need to be accompanied at all times. The controlling mechanism at the turning gate only allows one user with one access card through (see Figure 9). Residents resort to passing the card to another user in order to enter the park. This act is considered illegal by the management. Subsequent notices were put up at bulletin boards with security pictures revealing offenders caught undertaking this activity. Management stated the rules are to protect the residents from undesirables using the park for anti-social behavior. However, interviews pertaining to anti-social behavior on the 26th floor reveal a security concern in controlling access within the settlement. A 37-year-old Chinese man with two children said: "If the management wants to protect us from undesirables in the development they should stop them from getting into the corridors of our apartment

屋发展局, 2010年8月11日)

达士岭组屋管理层对于公共社会空间的使用提出了很多规章制度,告诉居住者该做什么和不该做什么。规则设立一系列“如何使用空间”的导则,以避免居住者对小型公园使用不当,以及可能造成人身伤害或来自其他使用者的控诉的情况,这被认为是不必要的官僚化。对第26层的观景台社会空间的主观官僚主义可能会导致空间的使用变得沉闷,像“禁止任何社会活动”的规矩,显然会障碍社交互动。为了让每一个居住者对公园都有主人翁意识,他们需要自由使用公园的权利。如果人们有主人翁意识,人们就更容易爱护他们的公园并且尝试着去尊重这个公园 (Carmona等, 2003年; Carr, Francis, Rivlin & Stone, 1992年; Gottlieb & Glaeser, 2006年)。当他们有发言权并且有权利决定如何使用空间,就产生了主人翁意识。通过观察发现,所有的用户群体都希望参与到如何使用坐落在26层观景台的小型公园的设计,并且因为他们对迷你公园按月支付了维修费用,很多人都认为他们应该拥有这种权利。当对管理层提出这些居住者关注的议题时,他们认为同样是投入一笔数额不大的资金,和私人公寓相比,如果将这笔资金投入公共社会房屋的发展上,居民会期望从中获得更多的利益。采访了15名居民发现,其中十个人认为安全和监控措施是没有必要的。一个34岁的受访者表达了她对规则的不同观点:“我在这里觉得很安全,但是不让我带访客进来。我在临近居住区有很多朋友,他们都想在空中观景台上度过美好的夜晚”。

有些居民被允许带游客进入公园,但他们必须全程陪同。旋转门的控制机制一次只允许“一人一卡”通过(见图9)。为了进入公园,那些没有门禁卡的人通过居住者传递门禁卡给他们的的方式进入公园,这种行为被管理者认为是违规的,随后张贴布告栏与安全教育性质的图片来警示大家可能给罪犯可乘之机,并提醒人们引起注意。管理层规定的规则是为了保护居民免受不良分子使用该园区发生反社会行为。然而,有关发生在26层的反社会行为的采访



Figure 9. The revolving steel door entrance secures the whole 26th floor against intruders. Its design, however, restricts users in the space (Source: Author)
图9. 旋转铁门入口防止干扰者进入整个26层。然而,它的设计限制了空间中的使用者。(来源:作者)

units, not the park.” The respondent argued that their flats are not protected from anti-social behavior occurring in the corridors. He believes security should be controlled from the lobby at ground level, not at the 26th story sky park. Moreover, he expressed more freedom is needed in using the mini-parks on the 26th floor skydeck. The respondent appreciates the level of security provided in the settlement, though he feels it is restricting use in the park.

Conclusion

Tall buildings can never fulfil their potential until we make living at height appealing to families with children, and this means designing gardens, terraces and streets in the sky (Oldfield, 2013). The Pinnacle@Duxton is a radical piece of high-rise social housing, and perhaps the most exciting example of the integration of social and communal spaces at height built to date. The mini-parks on the 26th story include both successful and less successful examples of social and public spaces. Good examples of mini-parks, like the Senior Citizen Fitness Corner and Children’s Playground, correlate directly to user needs with observations and interviews revealing inhabitants requesting more of such functional areas.

Social spaces that are subjected to stringent rules of use will not become successful (Carr et al., 1992). Whitzman (2001) describes how high-rises in Vancouver sunk into social disorder when their inhabitants did not have the freedom to practice their social rights even though social infrastructure was provided. Though Singaporeans tend to be subservient to rules pertaining to social expression in public spaces, the rules are unfavorable if the HDB wants to nurture neighborhood cohesion and sense of place in new housing settlements like the Pinnacle@Duxton. The aim is to build new high-rise high-density housing that builds, grows and sustains community life. These rules do not benefit any social interaction in these new high-rise settlements. Though the concerns are valid, management should opt for more controlled freedom in these public spaces. It is unlikely that these spaces would be fully free but the inhabitants should be allowed to practice their social rights. It is important that the Pinnacle@Duxton should steward more freedom in use on the 26th story skydeck as it asserts the validity in the creation of other social spaces in the sky in future Singaporean developments.

揭示了控制居住区通过的安全性问题。一名带着两个孩子37岁的中国男子说：“如果管理层想要保护我们免受不良分子的干扰，管理人员应该阻止他们进入我们的公寓单元的走廊，而不是公园。”受访者认为他们的公寓走廊并没有受到应有的保护，他们认为安全监控应该注重在一层入口大厅而不是在第26层的空中花园。此外，他表示对于26层观景台上的迷你公园，更多的自由是必要的。虽然他觉得在公园里使用受限，但是受访者对居住区提供的安全程度表达出了满意。

结论

只有在高层建筑中创建空中花园、空中露台或者空中街道，营造良好的生活环境去吸引有孩子的家庭，高楼大厦才能发挥它应有的潜力 (Oldfield, 2013年)。新加坡达士岭组屋推动了高楼社会保障房的发展，也许是也是迄今为止在对整合高楼中社会和交往空间的众多尝试中最振奋人心的案例。布置在第26层的迷你公园既包括社会交往空间的成功方面，也有不太成功的方面。好的方面，例如迷你公园中的老年健身区和儿童游戏区，通过观察和访谈我们发现，这些空间直接关联到使用者的需求，并且居住在这里的人希望得到更多类似这种功能的区域。

受到严格的使用限制的社会空间将不会成为理想的社会交往空间 (Carr等, 1992年)。Whitzman (2001年) 介绍了温哥华高层居住区如何陷入社会混乱的状态，他指出，由于没有足够的自由去行使他们的社会权利，即使提供了完善的社会基础设施，在其中的社会秩序依然是混乱的。虽然新加坡人往往遵守在公共场所中有关社会颁布的法规，但是即使像达士岭组屋这样的新建居住区中，新加坡建屋发展局要培育邻里凝聚力和场所感，这些规则也是令人不愉快的。建造新的高层高密度住宅区的目的就是去构建，发展和维持社区生活。在这些新建的高层居住区中的规则对社会交往无益。虽然关注的是有效的，在公共场所中的管理应该选择更可控的自由。这些空间应该是完全自由的，它看起来不可能，但是居民应该被允许履行他们的社会交往权利。达士岭组屋的第26层观景台在使用管理上应该更加自由，这一点很重要，因为它证明了在新加坡未来发展中，营造空中社会空间的必要性。

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