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The Psychological Relationship Between a Tall Building and a City | 高楼和城市之间心理上的关系



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Claes Caroli was born in 1948 and received a masters degree in law. In 1971 he joined the Swedish Police Academy to work on economic crimes in the fraud squad. Following that, he joined Trygg Hansa – an insurance company – in 1986 as a liability claims specialist, liability underwriter, and claims manager. His specialty was heavy damages in constructions. He became vice president of the special investigation unit in 1995 and was the company's representative for the Swedish Insurance Federation. In 2008, Caroli became Chairman of the Board for HSB Malmö, a cooperative association for condominium owners.

克劳斯·卡罗利出生于1948年，是法律硕士。他在1971年毕业于瑞典警察学院，作为经济犯罪方面的专家在诈骗罪部门工作。1986年，他在Trygg Hansa保险公司工作，责任索赔方面专家，责任保险人及索赔部门经理。专业为建造物的重大损伤。1995年起为特别调查小组副主席，成为该公司在瑞典保险业联盟的代表。2008年，他成为 HSB Malmö公司理事会主席。HSB Malmö公司是公寓房主集体协会，该协会是马尔默地区HSB的公寓所有者成立的协会。

Abstract | 摘要

Building a tall building in 2002 in a city that has its roots in the 11th century was a challenge. At the time this project started, the city of Malmö was in bad shape. For years, it had leaned upon its famous shipyard, heavy industries, car manufacturers, and related activities. When the shipyard closed in 1987 the deterioration began. Luckily the city had some far-sighted and visionary politicians in city hall. They realized that the city must evolve from an industrial-based city to a knowledge-based city. At the same time, HSB Malmö was expanding and looking for new land areas to explore. The city got a new university and a new industry developing smart phones and computer games. This new platform, however, had to be accepted by the citizens. The Turning Torso was the answer for that – a new icon.

Keywords: Social Interaction, Sustainability, Urban Planning, Urbanization

在2002年时在起源于11世纪的城市建造一座高楼大厦是个挑战。当这个项目启动时，马尔默市的情况很糟糕。多年来我们一直依赖我们著名的造船业、重工业、汽车制造业和其它重型行业。在1987年，当造船业倒闭时，城市的恶化开始了。幸运的是，在我们的市政府工作的是一些远见卓识的政客。他们意识到整个城市必须从工业型城市向知识型城市转变。同时HSB Malmö公司正在扩张，并在寻求开发新的土地。马尔默市成立了一个新大学、一个新工业，并开发智能手机、计算机游戏。但是，这个新平台必须被市民们接受。Turning Torso大楼就是问题的答案 – 一个全新的标志。

关键词：社交联系、可持续性、城市规划、都市化

Our first impression of a tall building often consists of its architecture, technical features, and strength. Urban planning and the role of the building in the cityscape are important as well. One frequently overlooked variable is difficult to measure or quantify. This paper will identify several indicators of the psychological impact a tall building has on inhabitants of the city. This study focuses on human values and is by no means exact science.

Our examination of the way people express and affirm life through time will be based on the history of the Turning Torso in Malmö. First a brief retrospective of the city:

Background

The city of Malmö has been 800 years in the making, but people lived here long before that; the oldest settlement goes back 12,000 years. The name first appears in the historical records around 1170 CE. The Malmö of the time was an agricultural community on the banks of the Öresund, the channel between Sweden and Denmark. In those days, water served as a bridge between countries, not a boundary. Whether ruled by Sweden or

一座高楼给我们的第一印象一般是它的建筑风格、技术特色和力量。城市规划以及高楼在城市面貌中的角色也很重要。这个我们经常错过的变量很难测量和量化。本文讲解的是一座高楼给城市居民带来的心理影响的几个迹象。这项研究着重的是人的价值而不是准确的科学。

我们对人们表达和确认生活的方式的研究将基于马尔默市的Turning Torso大楼的历史。首先我们先对这个城市做一个简单回顾。

背景

马尔默市的形成经历了800年，但是在此之前很久人们就已经在这里居住了。最早的人类居住可追溯到12 000年前。这个名称最早的历史记录是公元1170年。马尔默一开始是位于瑞典和丹麦之间的Öresund海峡岸上的一个农业社区。当时这个水域不被作为两个国家之间的界限而是桥梁。无论当时是属于丹麦或瑞典，马尔默市都代表了紧张关系（图1）。

从13世纪开始，汉莎商业船队对这个城市的影响巨大。从1870年起，仅仅斯德哥尔摩市和哥德堡市在人口数量上超过了马尔



Figure 1. Old Malmö (Source: HSB Malmö)
图1. 老马尔默 (来源: HSB Malmö)

Denmark, Malmö has always exemplified that tension (Figure 1).

Starting in the thirteenth century, the Hanseatic merchant fleet had an enormous influence over the city. Since 1870, only Stockholm and Gothenburg have surpassed Malmö in terms of population. The shipbuilding and cement industries can be traced back to that period. Women began to work in the factories, mostly textile, in the late nineteenth century. Malmö experienced an industrial boom after the Second World War. Half of the working population was employed by the manufacturing sector (Figure 2).

At the peak of the upsurge, Kockum was the biggest shipyard in the world and the city's leading employer. Japanese, Chinese and other Asian shipbuilders paid frequent visits. Malmö was the hub of Swedish industrial

growth in the 1960s (Figure 3). The oil crises of 1973-1974 dealt major blows to heavy industry. Many people left the city in the wake of subsequent closures. The national government, which collaborated closely with Malmö back then, subsidized construction of a leading-edge Saab auto plant on the site of the old shipyard. The city sold the land for a symbolic sum of SEK 1. The project started in 1986, and the plant opened in 1990. When it closed on 30 June 1991, a total of 19,559 cars had been manufactured. Open unemployment was 10% at the time.

Öresund Region

Ferries shuttled between Copenhagen and two Malmö harbors after the Second World War. People frequently shopped in both

默市。造船业和水泥业可以追溯到这段时期。在19世纪下半页，女人们开始在工厂上班，主要是纺织业。二次大战后马尔默经历了经济腾飞。工作人口中的一半就职于制造业（图2）。

在经济腾飞的最顶端，Kockum是世界上最大的轮船制造商和这个城市的最大雇主。来自日本、中国和其它亚洲国家的轮船制造商经常来访。马尔默是1960年代瑞典工业发展的中心（图3）。1973-1974年的石油危机给重工业带来了巨大打击。在之后的倒闭潮中，很多人离开了这个城市。当时瑞典国家政府和马尔默市紧密合作，对在原造船厂的地方建造先进的萨博轿车生产线进行了资助。马尔默市将这块地以象征性的1个瑞典克朗出售。这个项目于1986年启动，1990年开工。当它于1991年6月30日关闭时，总共生产了19559辆车。当时的公开失业率是10%。

Oresund地区

二战后班船在哥本哈根和马尔默的两个港口之间穿梭。人们在这两个地方购物。有时去海峡对面购买廉价物品更为实惠。尽管班船几乎一个小时一班，但是这还是很费时间。很少有人因为工作而在这两个城市之间穿梭。

建造一座可以用于私人车、货车和铁路运输的桥梁将旅行时间缩短了50%以上。从一个市中心乘火车去另一个只需半个小时。

丹麦政府和瑞典政府同意将这个地区作为大哥哥本哈根地区来振兴。这个地区的79个城镇有三百九十万居民，它代表的是斯堪迪纳维亚地区最大的高技能工作者的招工基地。世界水平的科研机构、充满创造力的商业环境以及两个可及的市场都在向远近左右的企业者们招手。



Figure 2. Old shipyard (Source: HSB Malmö)
图2. 老造船厂 (来源: HSB Malmö)



Figure 3. Malmö in the Sixties (Source: HSB Malmö)
图3. 60年代的马尔默 (来源: HSB Malmö)



Figure 4. Dismantling of the famous gantry crane (Source: HSB Malmö)
图4. 著名的龙门吊被拆除 (来源: HSB Malmö)



Figure 5. The crane of tears – an era ends (Source: HSB Malmö)
图5. 泪水中的起重机——一个时代的结束 (来源: HSB Malmö)

places. Sometimes it was more economical to hunt down bargains on the other side of the border. Although ferries departed almost once an hour, the trip was time-consuming. Few people commuted between the two cities for work purposes.

Construction of a bridge that could accommodate cars, trucks, and rail service reduced travel time by more than 50 percent. The train ride from one downtown to the other took only half an hour.

The two governments agreed to promote the area as the Greater Copenhagen Region. The 79 municipalities of the region house 3.9 million inhabitants and represent the largest recruitment base in Scandinavia for highly-skilled workers. World-class research facilities, a creative business environment, and access to two markets beckon to entrepreneurs from far and near.

Symbols

During the golden years of 1972–1973, Kockum Shipyard built a new gantry crane (Figure 4). The biggest such piece of equipment in the world, it was a landmark and source of tremendous pride. At 142 meters in height, it could be seen for a 100 kilometers in each direction. The crane was the quintessential symbol of Malmö, as well as the shipyard and its skilled workers. The shipyard closed in 1979 and Hyundai Heavy Industries in Ulsan, South Korea bought the crane (still unparalleled in size) in 2002 for a symbolic sum of \$1. Koreans call it “the tears of Malmö” because urban legend has it that the inhabitants of the city wept as it left their shores (Figure 5).

标志

在1972年到1973年，Kockum造船厂建造了一个新的龙门吊（图4）。它是世界上最大的。它是标志性建筑，也是无限自豪的源泉。它的高度是142米，在方圆100公里内都看得见。它既是马尔默市的典型标志，也是这个造船厂和高技能的工人人们的典型标志。这个造船厂于1979年关闭。位于韩国蔚山的现代重工在2002年（当时仍是最大的龙门吊）用标志性的1美元买下了它。韩国人把它叫做马尔默的眼泪，因为在传说中马尔默市民挥泪看着它被运走（图5）。

住房

HSB Malmö是一个集体住房协会，自1925年来是建筑业的领头羊。目前它有46 000会员。在1970年，马尔默市的人口是262 000。HSB Malmö拥有几乎整个城市三分之一的公寓房。人们靠这个协会扫清一切住房方面的问题。所以，我们决定建造瑞典唯一的摩天大楼：Turning Torso大楼一点也不奇怪。

城市规划

在从一开始的灰暗、枯燥、黯淡和文化贫瘠的氛围进化到现在的这个过程中，马尔默和其它城市很类似。

在1960年到1975年，城市规划者们深受Le Corbusier的影响。一些位于中心地带的建筑被推倒，取而代之的是高层建筑。人们的感受很复杂。尽管他们现在有了最先进的公寓房住，但是他们仍旧觉得旧建筑更漂亮、有魅力。

这个城市终于成为了文明人的自然居住区 (Robert Park 1967/1925:2)

芝加哥学派的鼎盛时期是1915年到1935年。它从整体上考虑城市规划、将城市看成一个有机的过程，让每一个人都深深地参与其中。

城市环境才使得 – 在人类自己创造的世界里 – 人们第一次有了智慧的生活并获得了和其它低等动物和原始人区分开的特性 (Park 1968/1929:1)。Park受到了Georg Simmel的启发，后者写道：人们的城市生活受城市的“金钱经济”的主导。Simmel也注意到数量变得比质量更重要，而且只有可估算的成果才算数。人们变得更理性、更会精打细算。

但是，我们还是可以假设Turning Torso大楼给予了马尔默居民们一种参与了城市转变的感觉。

我们必须让大家知道马尔默市（马尔默市议会1996）

一个成功的城市吸引投资和新的商业机会。它也吸引人们搬过去住（马尔默市议会，1995/1996）

它的首要目的是从整体上提升这个城市的形象。商标化和营销是基础。但是这个城市希望吸引的是什么样的人？城市规划者受到了Richard Florida和他的“创新型阶层”这个概念的启发。

在其它文化地区的、有创新力的人也对一个城市能使人提升人生经历感兴趣。通过和新的媒体公司合作，他们能达到一个临界数量，从而保证他们在数字市场上的成功（马尔默市议会，1995/1996）。

Housing

HSB Malmö, a cooperative housing association, has been a leader in the construction market since 1925. It currently has 46,000 members. The population of Malmö was 262,000 in 1970. HSB Malmö owned almost one-third of the city's apartments. People relied on the association to blaze the trail for them on any and all housing issues. Not so surprising then that the company made a decision to build the Turning Torso, the first Swedish skyscraper ever.

Urban planning

Malmö is similar to many other cities when it comes to its evolution from an original sense of being grey, unattractive, dull, and lacking in culture.

Urban planners were heavily influenced by Le Corbusier from 1960 to 1975. A number of centrally located buildings were torn down and replaced by taller ones. People had mixed feelings. Though they now had access to top-notch apartments, they still saw the older buildings as more beautiful and charming.

"The city is, finally, the natural habitat of civilized man" (Robert Park 1967/1925:2).

The heyday of the Chicago School was 1915–1935; it took a holistic approach to urban planning, viewing the city as an organic process in which the individual is deeply involved.

"It is the urban environment – in a world that man himself has made – that mankind first achieved an intellectual life and acquired those characteristics which most distinguish him from the lower animals and from primitive man" (Park 1968/1929:1). Park was inspired by Georg Simmel, who wrote that urban life is dominated by the "money economy" of the industrial city. Simmel also observed that quantity had become more important than quality and that only measurable accomplishments counted anymore. People had become more rational and calculating.

Nevertheless, it is still possible to hypothesise that the Turning Torso offers the inhabitants of Malmö a feeling of partnership in its transformation:

"We have to put the city of Malmö on the map" (Council of Malmö 1996);

"A successful city invites investment and new business. It attracts people to move there" (Council of Malmö 1995/1996).

The primary objective is to promote overall improvement of the city's image. Branding and marketing is essential. But what kind of people did the city want to attract? Urban planners were inspired by Richard Florida and his concept of the creative class:

"Creative people in other cultural areas are also interested in refining the experiences that a city has to offer. Working with new media companies, they can achieve a critical mass that ensures success in the digital market" (Council of Malmö 1995/1996).

Planners put together a team that included representatives of both the city and county government. Founded in 1998, Malmö University was a product of their effort to attract young people. The institution is progressive and internationally oriented. It currently has 24,400 undergraduate and graduate students. Approximately one-third of freshmen come from abroad. Malmö University is accredited by the Swedish Higher Education Authority. The campus is located at the old shipyard near downtown.

HSB Malmö and City Hall collaborated closely during those years. Though nonpartisan, the company's long history had won it a great deal of influence on public policy.

In the early 1990s, the team came up with the idea of converting the shipyard to a small industrial park (Figure 6). They anticipated that the only heavy industry to remain would be the submarine shipyard and a manufacturer of railway cars. They arranged a competition of landscape artists to make the surroundings more attractive.

The team also carried out an old plan to build a bridge from Copenhagen to Malmö. After extensive debate and discussion, the government gave the green light for construction to start in 1995. The King of Sweden and Queen of Denmark officially opened it in 2000 (Figure 7).

The City of Malmö continued to rebrand itself. Typically, it wanted to describe the process of reinvention while it was happening. The image of the city was a central metaphor for development, growth, progress, and other concepts that informed the transformation. Such storytelling was linked to civic boosterism, an attempt to lift the spirits of local inhabitants. With that in mind, an innovative city profile was launched in 2001.

规划者们组成了一个包括市政府和当地政府代表的小组。建于1998年的马尔默大学就是他们力图吸引年轻人的一个结果。该校向前看，并以国际为指导方针。目前有24,000大学生和研究生就读该校。大约三分之一的新生来自国外。马尔默大学得到了瑞典高等院校管理部门的认证。校园位于靠近市中心的旧造船厂址内。

在那些年里，HSB Malmö和市政府紧密合作。尽管本公司无党派归属，但是公司悠久的历史还是使得它在公共政策上拥有巨大的影响力。

在1990年代初期，这个小组有了将旧造船厂改成一个小型的工业园区的想法（图6）。他们预计在重工业方面仅有潜艇建造厂和一个铁路车厢制造商会留下。他们安排了一次园林规划艺术家比赛，目的是使得周围环境更加有吸引力。

该小组也决定实施原来的计划，即在哥本哈根和马尔默之间造一座桥梁。在大量的辩论和讨论后，政府批准于1995年开建该桥。瑞典国王和丹麦女王于2000年正式宣布它投入使用（图7）。

马尔默市继续给它自己重塑形象。典型的是它希望在事件发生的时候描述再造的过程。城市形象是发展、成长、进步和其它表述这个变化的主要描述形式。谈这个故事被和振奋公民联系起来，这是提升当地居民精神面貌的一个尝试。以此为目的，我们在2001年推出了一个有创意的城市形象。那一年瑞典是欧盟的主席国。当



Figure 6. Western harbor with the shipyard (Source: HSB Malmö)

图6. 造船厂的西部港（来源：HSB Malmö）



Figure 7. The bridge to Europe (Source: HSB Malmö)

图7. 通向欧洲的大桥（来源：HSB Malmö）

Sweden held the presidency of the EU that year. A new flag was raised during a meeting of the various ministers of finance. The mayor declared: "This logo lends Malmö a strong, comprehensive identity." The challenge had previously been formulated as a "lack of identity."

The city also built a permanent concrete skateboard arena only 500 meters from the Turning Torso. International World Cup championships have been held right in front of the building (Figure 8).

BO 01

The City of Malmö had a dream and agenda for the future. HSB Malmö participated in this phase of urban planning. The board visualized changes to the city. BO 01, a huge housing exhibition arranged by the municipal authorities in 2001, offered an unprecedented opportunity. The association was assigned a site smack dab in the middle of the old shipyard near what had once been the auto

plant (partly demolished and resurrected as an office building).

The Turning Torso

HSB Malmö initially planned to build a 25-story structure. Its CEO first met with architect Santiago Calatrava in 1999. The association was clearly influenced by the city's vision of transformation. The first drawings showed seven cubes. To ensure 90-degree angles, nine cubes and a height of 190 meters were chosen instead.

It was Wednesday, February 14, 2001 and the weather was rainy. The Year of the Snake had begun on January 24, 2001 and would end on February 11, 2002. Later in the year an earthquake would kill thousands of people in El Salvador and a pair of Swedish sisters would die in a Canadian avalanche. But on this particular day, architect Santiago Calatrava and the Chairman of the City Executive Board joined the CEO and Chairman of HSB Malmö to break ground for the Turning Torso (Figure 9). Architects can pursue their wildest fantasies at the drawing board and computer,

各个金融部长们在开会时一个新的旗帜被竖起。市长宣布说：“这个标识给予了马尔默市一个强大的、全面的个性”。在此之前这个城市面对的挑战被描述为“缺乏个性”。

马尔默市也建造了一座永久性的水泥滑板运动场，离Turning Torso大楼仅500米。世界杯锦标赛就在这座大楼面前举行（图8）。

BO 01

马尔默市对未来有一个梦想和一个目标。HSB Malmö参与了城市规划的这个阶段。理事会想象了这个城市的变化。BO 01，一个在2001年举行、由市城府组织的巨大的住房展览会提供了绝无仅有的机会。本协会被安排在旧造船厂中心、所有人都必须光顾的地方，而且就在原汽车制造厂边上（该厂被部分拆解，后来重建成了一座办公楼）。

Turning Torso大楼

一开始HSB Malmö打算建造一座25层的建筑。公司总经理首次和建筑师Santiago Calatrava见面是1999年。本协会明显受到了马尔默市转型预想的影响。第一次设计图显示的是七个正方形。为了保证90度的角度，最后选择的是九个正方形，高度为190米。

当时是2001年2月14日，星期三，天天下着雨。中国的蛇年在2001年1月24日开始了，它将在2002年2月11日结束。在同一年的后来，萨尔瓦多的地震将导致数千人的死亡，一对瑞典姐妹将在加拿大的雪崩中遇难。但是就是在这一天，建筑师Santiago Calatrava和马尔默市执行理事会主席与HSB Malmö的执行总裁和主席在一起为Turning Torso做了开工典礼（图9）。建筑师们可以在画板和电脑上展示他们最奇异的幻想，有时到达创造力的顶峰并呼吸到其它世界的稀薄的空气。这就是艺术天才展示自己的时刻。Calatrava感受到并设计了一个人的形状，它隐藏在一个铁饼抛掷者里。这个工作在一开始就是独一无二的。在瑞典，所有40米或更高的建筑物都必须被当成对飞行员的危害而在民用航空局和空军做登记。尽管Turning Torso大楼不是世界上最高的建筑，它却是马尔默市不可磨灭的标志性建筑。

Turning Torso（瑞典语：Vridande Bålen）是瑞典的一个新未来风格的住房摩天大楼，它也是斯堪迪纳维亚最高的建筑物。它位于Oresund海峡瑞典这边的马尔默市内，它由瑞典的HSB公司建造并拥



Figure 8. Transformation to a young knowledge city (Source: HSB Malmö)
图8. 向年轻知识型城市的转化（来源：HSB Malmö）



Figure 9. Foundation of the Turning Torso (Source: HSB Malmö)
图9. Turning Torso大楼的地基（来源：HSB Malmö）

sometimes scaling the mountaintops of creativity and breathing the rarefied air of other worlds. Such is the art of genius in action. Calatrava conceived and designed a human form in the guise of a discus thrower, a work that was unique from its very inception. All Swedish buildings 40 meters or higher must be registered with the Civil Aviation Authority and Armed Forces as a potential peril to pilots. Though not the tallest apartment building in the world, the Turning Torso is one of a kind and an indelible Malmö landmark.

The Turning Torso (Swedish: Vridande Bålen) is a Neo-futurist residential skyscraper in Sweden and the tallest building in Scandinavia. Located in Malmö on the Swedish side of the Öresund strait, it was built and is owned by HSB Sweden (Figure 10).

The project was designed by Spanish architect, structural engineer, sculptor, and painter Santiago Calatrava and officially opened on August 27, 2005. The tower reaches a height of 190 meters (623 feet) with 57 stories and 147 apartments.

In August 2015, it was announced that the building was the winner of the 10 Year Award from the Council on Tall Buildings and Urban Habitat.

| | |
|------------------------------|--|
| Type 种类 | Commercial office, Rental apartments 商业办公, 出租房 |
| Architectural Style 建筑风格 | Neo-Futurism 新未来风格 |
| Location 地点 | Lilla Varvsgatan 14, 211 15, Malmö, Sweden |
| Coordinates 经纬度 | 55°36'48"N/12°58'35"E |
| Construction Started 地点 | 14 February 2001 2001年2月14日 |
| Completed 何时完工 | 14 February 2001 2005年8月27日 |
| Opened 何时开放 | 1 November 2005 2005年11月1日 |
| Inaugurated 何时揭幕 | 27 August 2005 2005年8月27日 |
| Height 高度 | 190 m 190米 |
| Roof 顶 | 190 m (623 ft) 90米 (623) |
| Top Floor 最高层 | 178.79 m (586.58 ft) 178.79米 (586.58英尺) |
| Floor Count 层数 | 57 |
| Tower Gross Floor Area 层面积 | 31,840 m² (342,723 ft²) 27,500平方米 |
| Lifts/Elevators 电梯数 | 5 |
| Architect 建筑师 | Santiago Calatrava |
| Main Contractor 主要施工者 | NCC |

Figure 10. Turning Torso General Information (Source: www.skyscrapercenter.com)
图10. Turning Torso 一般信息 (来源: www.skyscrapercenter.com)

100% local renewable energy

The new BO 01 district would rely entirely on renewable sources of energy. Energy for the West Harbour would be generated in or near the area. A large percentage of heating sources would be extracted from sea water and groundwater, supplemented by solar collectors. The heat pump would be powerful enough for the entire area. A large wind power station (2MW) at the North Harbour and 120 square meters of solar cells produce electricity for apartments and fans, as well as heat and other pumps. Low energy use in the buildings was integral to the concept. Including electricity, each housing unit could consume as little as 105 kWh per square meter each year, with a meter that displays electricity and heat consumption. Most units fell short, however, primarily because the theoretical calculations turned out to be unfounded and unrealistic.

Biogas is generated from the area's waste and used to heat both homes and vehicles. The Turning Torso apartments have disposers that contribute to the production of biogas.

Effects

Johan Nylander, a Swedish correspondent based in Hong Kong, recently wrote, "It is remarkable to witness the booming activity just across the border on mainland China. The entrepreneurial spirit is thriving in Shenzhen. During my many travels around the city, I have noticed an astounding transformation. A few months ago, I wrote an in-depth story for Dagens Industri, a Swedish business daily, about Shenzhen's evolution from a dirty factory town to China's leading hub of innovation."

The comparison between the processes that Malmö and Shenzhen have undergone is telling. The tall buildings of Shenzhen illustrate its new image, while the Turning Torso is a monument to transformation. Inhabitants of Malmö feel a natural connection to other cities that have evolved to centers of knowledge and progress.

Malmö is fourth on the Forbes list of cities with the most patent applications per capita. Almost half of the Malmö population is below the age of 35. It also boasts of the highest percentage of foreign-born inhabitants of any Swedish city.

The Greater Copenhagen Region attracts young people for whom the idea of living in a multicultural center near the European

有。它赢得了2005年Emporis摩天大楼金奖 (图10)。

该项目由西班牙建筑师、结构工程师和画家Santiago Calatrava设计，于2005年8月27日正式开放。该大楼达190米（623英尺）高，有54层，147套公寓。

2015年8月，该大楼被宣布赢得了高楼和城市居住委员会的10年奖。

100%当地的可再生能源

新市区将百分之百使用可再生能源。西部港口的能源将在本地或附近生产。一大部分热能将取自大海或地下水，并用太阳能做补充。热交换机的功率将达到足够整个地区使用。北部的大型风力发电站（2MW）和120平方米的太阳能发电站为公寓房、通风扇、热交换机和其它泵提供电力。该建筑的低能耗是一个完整的概念。每套住房可以每年每平方米只使用105千瓦能量（包括用电），而且都有显示用电量和热能使用量的仪表。但是大多数住房离达到这个标准还差一点，因为这个理论计算结果没有依据而且不现实。

用来加热家庭和驱动汽车的沼气将用当地的垃圾来生产。Turning Torso大楼有用来为沼气生产服务的垃圾处理装置。

效果

Johan Nylander是驻香港的一个瑞典通讯员，他最近写道：“亲眼目睹边界对面中国大陆的经济腾飞是值得注意的。深圳的创业精神十分兴旺。当我多次在这个城市旅行时，我总是注意到令人震惊的变化。几个月前我为瑞典的一家商业报纸 - 《今日工业》写了一篇介绍深圳从一个肮脏的工厂小镇变为领导中国的创新中心的深度文章。”

比较马尔默和深圳所经历的过程是有说服力的。深圳的高楼大厦显示的是它的新面貌，而Turning Torso大楼是变化的纪念碑。马尔默市民们对其它进化成知识和进步中心的城市有自然而然的归属感。

《福布斯》将马尔默列为人均专利数第四位的城市。马尔默市几乎一半的人口小于35岁。它也是瑞典城市中出生于国外的居民比例最高的。

大哥本哈根地区吸引那些特别喜欢生活在靠近欧洲大陆的多元文化中心的年轻人。尽管一座高楼如Turning Torso带来的影响不能量化，但是它的图片常被用来代表一个正在成长的城市，这说明了它的力量（图11）。



Figure 11. Moonraker (Source: HSB Malmö)
图11. 空中之城 (来源: HSB Malmö)

continent is particularly appealing. While the impact of a tall building like the Turning Torso can never be quantified, the frequent use of its image as a symbol of a growing city testifies to its power (Figure 11).

A Google search on "Turning Torso" obtains 419,000 hits. A search on "Turning Torso" and "Malmö" comes up with 365,000 hits. A couple of dozen tourists show up every day even though they can't go inside. Because the image is not copyrighted, many companies use it in their advertising and logos. It is a recurrent symbol of Malmö and Sweden at the Eurovision Contest and other televised events. A page of Swedish passports features the picture.

The number of workplaces in the city grew by 57% from 1999 to 2014. Total employment increased by 27%. Malmö had 155,564 employees at 33,896 workplaces in 2014. A total of 32,739 people (30% of the gainfully employed population) were working at 1,629 foreign-owned businesses. The number of foreign-owned businesses rose by 37% in ten years. The number of employees at such businesses shot up by 33%.

All in all, 15,100 workers, 8,100 of whom are on their way to jobs in Copenhagen, commute across the Öresund Bridge every day. People spent 1,238,829 nights at Malmö hotels in 2013, as opposed to 680,000 in 1997. The total number of apartments completed each year increased from 380 in 1997 to 1,062 in 2013.

Epilogue

While trying to measure the impact of a tall building is a fruitless venture, urban growth and development must be assessed in the light of the attempt by planners to create symbols of that process. The ultimate goal of urban planning is a happy, content population. Progress, as revealed in the figures above, represents one way of quantifying attainment of that objective.

Almost one-third of Malmö inhabitants are living in an HSB building. Only a few years after adoption of the city's new logo and flag, the Turning Torso became the symbol of transformation and renewal. It achieved particular resonance for having been constructed at the site of the old shipyard, which had employed a large percentage of the population for several generations. HSB Malmö is now in the process of selling the Turning Torso, but its members are unfazed. They know that the building will never be shipped off the way the crane was. It will remain a symbol of the new Malmö for decades to come. After all, the members of HSB Malmö built it in the name of their fellow citizens.

谷歌上搜索Turning Torso给出了419 000个回答。当搜索Turning Torso + Malmö时,答案数是365 000个。每天都有几十个游客来到大楼前,尽管他们不能进去。因为它的图片没有版权,很多公司在广告和标识里使用它。在欧洲电视歌唱比赛和其它电视节目中,它作为马尔默市和瑞典的标志而重复出现。瑞典护照中的一页带有它的图片。

从1999年到2014年,马尔默市的工作场所数量增加了57%。雇员总数增加了27%。在2014年,马尔默市有155 564名雇员,在33 896个工作场所工作。总共32 739人(有酬就业人员的30%) 在1629个外国人拥有的公司工作。十年来外国人拥有的公司增加了37%。在这类公司工作的人员数量增加了33%。

总体而言,每天有15 100工人乘车通过大桥,其中的8 100人是去哥本哈根工作。在2013年,酒店入住率达到了1 238 829个晚上。而1997年这个数字是680 000。每年竣工的公寓房数量从1997年的380套增加到了2013年的1 062套。

结语

尽管试图测量一座高楼大厦带来的影响是徒劳的,城市成长和发展的评估必须本着规划者创造这个过程的标志的意图来进行。城市规划的最终目的是快乐满意的居民。以上图片显示的进步代表的是量化目标完成程度的一个方式。

几乎三分之一的马尔默人住在HSB的楼房里。在使用本市新的标识和旗帜没几年后,Turning Torso大楼成了变化和更新的标志。它达到了特别的共振作用,因为它被建在了在几代人的时间里雇用了大量当地人的原造船厂的旧址。HSB Malmö公司现在正在进行对Turning Torso的出售工作,但是它的会员没有受到影响。因为他们知道这个建筑物不会被象那个龙门吊那样被运走。在未来几十年里,它仍然会是新马尔默市的标志。无论如何,HSB Malmö的会员是代表他们后来的公民而建造它的。

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