

从能效城市到能效者 ——5A规划途径

From Energy-efficient Cities to Energy-efficient People — The Five A's Planning Approach

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两周之前，我前往德国参加了一个学术会议。会上，城市规划师们就如何让城市变得更加可持续性的方法展开了讨论。我们获悉了关于创新的绿色建筑技术，公共交通倡议行动，自行车共享项目以及世界各地在如何使城市变得更可持续、更节能方面所付出的努力。

结束一整天的汇报、讨论以及知识共享后，每一位与会者各自前往附近的出租车站点搭乘出租车，返回入住的酒店。在去往出租车站点的途中，我们路过了一个轻轨站、一个公交站以及一个属于当地公共自行车系统的并且停满自行车的车架。我们刚刚得知德国拥有世界上最完善的公共交通系统，但这也不会对我们产生什么影响。尽管所有人都对这一领域的可持续性解决方案感到无比兴奋并抱有极大热情，但我们并没有做到身体力行。最终，我们还是选择了搭乘不可持续的出租车。

Two weeks ago, I attended a conference in Germany where urban planners discussed ways to make cities more sustainable. We learned about innovative green building technologies, public transit initiatives, bike share programs and how cities all over the world try to become more sustainable and more energy-efficient.

After a full day of presentations, discussions, and knowledge sharing, everyone who was part of the conference headed out to the next taxi stop to catch a cab and go back to their hotels. On our way to the taxi stop, we passed a train station, a bus stop, and a bike rack full of bikes belonging to the local bike share program. We had just learned that Germany has one of the best public transit systems in the world but it did not matter. Even if we were

摘要 / 近年来，能源消耗不断增长。反思我们的生活、工作和出行，我们往往倾向于选择不可持续的、高能耗的方式，尽管知道这些方式并非最便宜、最快捷或最便利的方式。即便我们知道这样的生活方式会破坏我们的环境、威胁我们的健康，并且具有导致重要资源濒临枯竭的风险，那么是什么原因使得我们依旧会选择浪费而非节约能源？有5个主要的因素影响了我们对于生活、移动以及工作方式的决定，它们是关于选择与技术的可用性、可负担性、可达性、吸引力，以及意识。这5个根本原因是一种崭新的规划途径的基础。这一规划途径不仅旨在形成能效居住模式，而且在于形成能效的生活环境，通过改变人们的行为而达成能效的生活方式，即5A途径。

关键词 / 能效；环境行为；可持续性；公共交通；可持续城市规划

Abstract / Energy consumption has been increasing for years. Looking at the way we live, work, and move; we tend to choose the unsustainable and energy-intensive way despite knowing that it is not necessarily the cheapest, fastest, or more convenient way. What makes us waste energy versus conserve energy while knowing that with this lifestyle we destroy our environment, we threaten our health, and we risk running out of vital resources? There are five main factors that influence our decisions on how we live, move, and work. It is all about availability, affordability, accessibility, attractiveness, and awareness of options and technologies. These five root causes are the basis for a new planning approach that aims towards not only energy-efficient settlement patterns but also energy-efficient living environments that result in the change of people's behavior towards energy efficient lifestyles — the Five A's Approach.

Key words / Energy Efficiency; Environmental Behavior; Sustainability; Public Transit; Sustainable Urban Planning

出租车的价格比公共汽车高出两倍多。由于遇到交通堵塞，出租车比轨道交通花费的时间还要多15分钟（因为每个人都驾车或者搭乘出租车回到市区）。出租车所消耗的能源是轨道交通的5倍多及公共汽车的3倍多。

无论是可持续性领域的城市规划专家，抑或是普通百姓，大家都知道，我们选择了高能耗的而非能源高效的交通方式。这样的情形不仅发生在我们对交通方式的选择上。纵观我们的居住、工作和出行，我们也都倾向于选择不可持续的方式，尽管我们知道那并非最便宜、最快捷或者最便利的方式。

为什么会出现这种情况？是什么原因导致我们选择开车，而不是乘坐公共交通或者骑自行车呢？是什么原因让我们选择居住在位于郊区的巨大的、高能耗的独栋住宅中，而不是居于紧凑城市中的能效公寓？是什么令我们尽管了解这样的生活方式会破坏我们的环境，威胁我们的健康，并且具有导致重要资源濒临枯竭的风险，但却依旧在浪费能源而非节约能源？

显然，“人们不会因为意图消耗能源而去消耗，更或是，没有人意图浪费能源而去浪费。”^[1]这不过是普通人日常生活的写照，然而部分普通的日常活动所需要的能源要高于其他活动。

规划师对这一话题的关注已有几十年之久，而即使有些城市已形成大型公交系统，有些城市为了避免城市蔓延，设置了所谓的“扩张边界”，有些城市制定了建筑节能标准，但不论身处何种城市，我们依旧会选择那些高能耗的活动。

作为城市规划师，我们过多地关注了城市作为聚落的问题，而忽略了城市是无数个个体的生活环境。换言之，我们过多地关注了如何使城市更加能效，而忽略了如何使生活在城市中的人更加节能。我们过于关注房地产市场中外经济型的独栋住宅，而非位于城市中价格高昂的公寓住宅。我们总是过于关注如何从A地到达B地，而未曾留意A地缺失什么，B地又可获得什么。

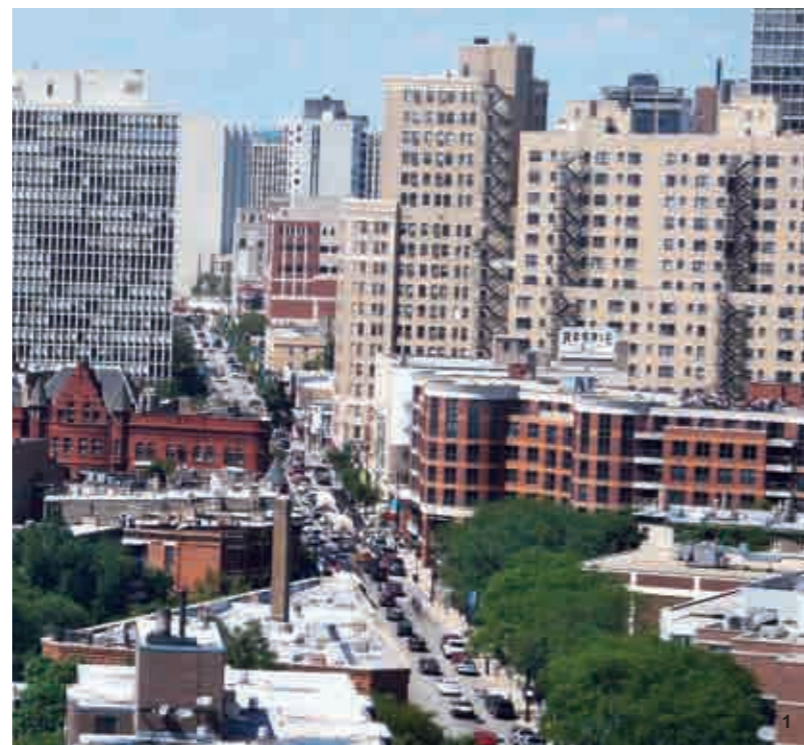
在欧洲和北美城市开展的广泛研究发现，有5个主要因素将会影响我们对于如何生活、出行和工作的决定。无论是在能效城市还是高能耗的城市中，它们均是关于技术与服务的可用性（**Availability**）、可负担性（**Affordability**）、可达性（**Accessibility**）、吸引力（**Attractiveness**）以及意识（**Awareness**）。

规划师需要为人们提供更加能效的生活方式选择，这往往是通过使人们所需要的技术与服务成为可获取的、可负担的、可达的，并且比高能耗的方式更具吸引力来实现的。同时，我们必须确保人们能意识到其可获取性、可负担性、可达性以及吸引力。

即便是世界上最好的交通系统，如果我们对其缺乏了解或者无法负担得起一张车票去使用它，也无济于事。即使是最具能效甚或是能源自给型住房，如果无法通过诸如公共交通的能效交通系统到达，也只能让人却步。如果未设置自行车道并且在马路上骑自行车缺乏安全性，即便是意识到骑车比开车要更加节省能源且更加健康，亦无裨益。

我将上述提及的5个因素称为“5A”，这5个“A”，是城市规划与人类行为之间的连接点。如果规划者能够在规划中将这5个A都纳入考量，我们就能实现从能效城市到能效者的转变。

为什么在奥地利维也纳仅有不到30%的人选择汽车作为通勤的交通工具？原因在于维也纳拥有广泛的公共交通和自行车道网络，人们即使不驾车，也可以便捷地到达工作场所。此外，整洁安全的公共交通工具和车



1

all super excited and passionate about sustainable solutions in this field, we did not practice what we preached. We took the unsustainable cab.

The cab that was more than double the price of the bus. The cab that took 15 minutes longer than the train because it got stuck in traffic (because everyone drove or took a cab back to the city). The cab that used five times more energy than the train and three times more energy than the bus.

We all know it, no matter if we are urban planning experts that specialize in sustainability or if we are everyday people, we choose the energy-intensive over the energy-efficient means of transportation. This is not just the case with our choices of means of transportation. Looking at the way we live, work, and move; we tend to choose the unsustainable way despite knowing that it is not necessarily the cheapest, fastest, or more convenient way.

So why is that? What makes us drive automobiles versus taking public transit or riding a bike? What makes us live in huge, energy-intensive single-family houses in the sprawled suburbs versus energy-efficient apartment buildings in the dense city? What makes us waste energy versus conserve energy while knowing that with this lifestyle we destroy our environment, we threaten our health, and we risk running out of vital resources?

Obviously, “people do not consume energy just because they want to consume energy. Furthermore, nobody would waste energy just to waste it”. It is ordinary people living their everyday lives and doing ordinary things. And some of these ordinary, everyday life activities require more energy than others.

Planners have been focusing on this topic for years and decades and even if we have cities with great transit systems, cities with so-called growth boundaries in order to avoid urban sprawl, and cities that require energy efficiency building codes, we still decide for the energy consuming activities wherever we can.

As city planners, we focus too much on the cities as settlements versus the cities as living environments of individuals. In other words, we focus too much on how we can make cities more energy-efficient versus making the



2

1. 我们总是倾向于去选择那些不可持续的方式，即使我们知道它们也许并非最便宜、最快捷或最便利的方式（2011年9月摄于芝加哥）。© Petra Stieninger
 2. 通过使人们所需的技术或服务成为可用的，我们可以为人们提供更能效的生活方式选择（2011年11月摄于菲尼克斯）。© Petra Stieninger
1. We tend to choose the unsustainable way despite knowing that it is not necessarily the cheapest, fastest, or more convenient way (Chicago, September 2011). © Petra Stieninger
 2. We have to give people the option to live more energy-efficient lifestyles by making the needed technologies and services available (Phoenix, November 2011). © Petra Stieninger

people that live in the cities more energy-efficient. We focus too much on real-estate markets that favor the inexpensive single-family house in the countryside versus the expensive apartment in the city. We focus too much on how to get from A to B versus finding out what is missing in A and available in B.

Extensive research in European and North American cities resulted in five main factors that influence our decisions on how we live, move, and work. No matter if it is in an energy-efficient city or an energy-intensive city, it is all about **availability**, **affordability**, **accessibility**, **attractiveness** and **awareness** of options and technologies.

We, as planners, have to give people the option to live more energy-efficient lifestyles by making the needed technologies and services available, affordable, accessible, and more attractive than the energy-intensive alternative. At the same time, we have to make sure that people are aware of their availability, affordability, accessibility, and

站、高频率的公共汽车和轨道交通发车班次、与街道分离的自行车道，加之停车位的紧缺，使得利用公共交通或者骑自行车比开车更具吸引力。票价低廉的公共交通使得轨道交通比汽车更加实惠。公共交通、自行车和步行是可获得的、可负担的、具有吸引力的，能够使他们便捷地从家到达工作场所。很显然，至少70%的维也纳人民意识到了这样一个事实。

如果以5A的视角来看，“美国人对汽车有着强烈的热爱”这样的论断便不足为奇。“主要的问题是，绝大多数人别无他选。”诚如亨利·福特曾指出的那样，在20世纪20年代，美国人试图“通过离开城市来解决城市问题”。独户住宅要比城市中的公寓房更便宜（现在依旧如此）。房地产市场迫使我们购买位于郊区的高能耗的住宅，而非更加能效的城市公寓。公共交通缺乏可达性，使我们宁可每天开车往返于工作场所和郊区之间。即便公共交通价格低廉、随处可见，却缺乏吸引力（等待时间长、安全性差），人们也意识不到它的存在。

即使所谓的全城可持续发展，例如一些中国和中东地区的绿色领域城市发展项目中的所有能效建筑、可再生能源以及其他新奇的应用，都无法通过能效交通系统到达。这些地区也许对于某一些人群来说是可负担的，也许有一系列能效设施可供使用，也许非常具有吸引力，也许通过积极推动可使之更引人注目，但是可达性



差导致人们只能驱车前往，那些原本节省下来的能源也因行车过程中的能源消耗而抵消。

上述事例表明，当我们在规划能效城市或社区时，为了实现完全能效的生活方式，这5个A必须被同时满足。在2011年蒙特利尔生态城市世界峰会上，“特大城市项目”组织的创立者和主席珍妮丝·珀尔曼提出，“凡人只能止于计划，而能够实施者则为圣贤”。然而，我们知道，技术和专业知识皆已具备。可用于日常生活的节能技术都是可用的和可负担的，使之可达也并非难事，使其具备吸引力可以使人们意识到他们的益处。我们并非匮乏知识，而是缺乏意愿。LAF



attractiveness.

The best transit system in the world does not help much if I do not know about it or if I cannot afford a ticket to use it. The most energy-efficient or even energy-plus house does not help much if it is not accessible by energy-efficient transportation systems such as public transit. Being aware of the fact that riding my bike is much more energy-conserving and additionally healthier than driving my car does not help much, if there are no bike lanes available and riding a bike on the streets is not safe.

I call the five above mentioned factors the “5 A’s”. The five A’s are the connector between urban planning and human behavior. If planners consider all five A’s in their work, we can make it happen. We can go from energy-efficient cities to energy-efficient people.

Why does less than 30% of the population of Vienna, Austria take their cars for their daily commute to work? Because there is an extensive public transit network as well as an extensive bike lane network available that enables people to access their work without driving. Furthermore, the clean and safe public transit vehicles and stations, the frequency of buses and trains, the separation of bike lanes from streets, and the lack of parking spots make using public transit or riding a bike much more attractive than driving. A great variety of inexpensive public transit tickets makes the train much more affordable than the car. And obviously, at least 70% of Vienna’s population is aware of the fact that public transit, biking, and walking are available, affordable as well as attractive and allow them to access their work places from their homes.

“Americans have a love affair with their cars ...”, which is not a big surprise, taking the five A’s into account. “The main problem is most of them do not have an option”. As Henry Ford once put it, in the 1920s, Americans tried to “solve the city problem by leaving the city”. Single-family houses were (and still are) much cheaper than apartments in the city. The real-estate market forces us to buy the energy-intensive house in the suburbs versus the energy-efficient city apartment. The lack of accessibility by public transit makes us drive to work and back to the suburbs every day.

And even if there is affordable public transit available, in most cases, it is neither attractive (long waiting times, not safe) nor are people aware of its existence.

Even the so-called sustainable developments of entire cities such as the green-field city development projects in China and the Middle East, with all their energy-efficient buildings, renewable energy sources, and other fancy applications lack accessibility through energy-efficient transportation systems. These places may be affordable for a lot of different people, they may have a lot of energy-efficient applications available, they may be attractive and active promotion increases the awareness of their existence but their lack of accessibility makes people drive there and waste the conserved energy in their cars.

These examples show that in order to allow completely energy-efficient lifestyles, all five A’s have to be met when planning energy-efficient cities or neighborhoods. At the 2011 Eco-City World Summit in Montreal, Janice Pearlman, Founder and President of The Mega-Cities Project, said “To plan is human, to implement divine.” However, we know that the technologies and the know-how are out there. Energy efficiency technologies for all everyday life situations are available and affordable, they can easily be made accessible, and making them attractive can boost the awareness of their benefits. It is not a lack of knowledge; it is a lack of will. LAF

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4. 美国人对于汽车有着狂热的喜爱（2011年9月摄于西雅图）。© Petra Stieninger
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4. Americans have a love affair with their cars (Seattle, September 2011). © Petra Stieninger