



领先行业 能源
绿色建筑

TOP SECTOR ENERGY
SUSTAINABLE BUILDING



Pioneers in international business



荷兰政府确定了九个经济发展尤为强劲的行业。这些行业在中国同样取得了快速的发展，为中荷两国在贸易及经济合作领域提供了互利机遇。

荷兰绿色建筑

公共政策总趋势

作为一个国土有限而人口密集的国家，荷兰历来注重制定高效的公共政策推动绿色建筑和可持续性发展，迄今已有四十多年历史。荷兰也是首批制定和执行绿色建筑政策的国家之一。荷兰的绿色建筑标准位列世界之最，注重五大特色，即：环保性、经济性、社会公益性、功能性和技术性。

1974年，面对动荡的能源市场，荷兰政府首次颁布了《荷兰能源政策》（Dutch Energy Policy），其中就涉及建筑的能耗问题。荷兰的首部《国家环境计划》（National Environmental Plan）于1989年出台，将建筑行业视为重点关注对象。上世纪九十年代末，与绿色建筑相关的公共政策已包括一系列策略和手段，例如示范项目、直接补贴、强制性政策、自愿性规范以及针对行业集团的合约等。

1996年推出的“能源性能规范”（EPN-Energy Performance Norm）和“能源税”（REB）就是最好的例子。据统计，在1995年至2002年间，能源税对建筑行业的二氧化碳减排方面产生的影响最大。能源性能规范是用于规范建筑能源性能的指数。多年来，能源性能规范得到有效运

The Dutch government identified nine sectors in which the Dutch economy is particularly strong. These sectors also see rapid growths in China and provide mutual opportunities for Chinese and Dutch businesses in trade and economic cooperation.

GREEN BUILDING IN THE NETHERLANDS

General Trend of Public Policies

As a small and densely populated country, the Netherlands has a long history in developing effective public policies to boost green building and sustainability in general for almost four decades. It is also one of the first countries in the world to enact and implement policies for green buildings. The Dutch green building standards are ranked among the highest in the world with a focus on five qualities, namely: ecological, economic, social, functional and technical.

In 1974, due to the instability of the energy market, the government issued the first Dutch Energy Policy, including energy consumption of buildings. The country's first National Environmental Plan was issued in 1989 with high priority on the construction industry. By the end of the 1990s, public policies for sustainable building in the Netherlands already contained a broad range of instruments and strategies, such as demonstration projects, direct subsidies, mandatory policies, voluntary incentives and covenants with industrial groups.

Good examples are the introduction of the Energy Performance Norm (EPN) and the Energy Tax (REB) in 1996. It was evaluated that the REB has had the largest impact on reducing CO₂ emissions in the building sector over the period of 1995-2002. EPN is an index that has been



用：至2010年底，新建民用住宅的能源性能规范值为0.8，而目前已下降至0.6。荷兰政府旨在2020年将这一指数降低至0（达到建筑零能耗的标准）。另外，“能源性能规范”对于既有建筑和公用建筑的能源性能也有相关规定。

社会参与

自1980年代初，荷兰政府就意识到更多的业界人士必须参与到有关绿色建筑的政策制定过程中。与此同时，荷兰民众拥有很强的可持续性发展意识。部分原因是因为政府政策对民众日常生活产生的深远影响。另外一部分原因则得益于教育和研究机构在绿色建筑的必要性和优势方面的推广和宣传，以鼓励民众改变个人行为。人们意识到，绿色建筑不仅环保，从长远来看还能节能。因此，对节能房屋的需求与日俱增，而节能技术和产品也日新月异，市场各方也积极响应消费者需求，由此形成了促进开发更多绿色建筑的良好循环。

政府、市场和消费者都意识到，二氧化碳减排是荷兰经济社会发展重中之重。近年来，中央政府、各市政府、行业协会、公司企业、大专院校和科研机构等制定了一系列与新建筑和既有建筑能耗相关的计划、协议和协定。所有相关的政府和企业携手合作，力图使荷兰的住房开发达到零能耗。



introduced to regulate the energy performance of buildings. EPN has been effectively used over the years: the EPN for new residential buildings was 0.8 until the end of 2010, currently the value is 0.6. The government aims at lowering the value to 0 (energy neutral building) in 2020. There are also requirements of EPN values for existing buildings and utility buildings.

Social Involvement

Since the early 1980s, the government realized that more stakeholders in the industry must be involved in the policy making process. Also Dutch citizens have a high level of awareness on sustainability. Partially due to the influence of public policies in their daily life, but also thanks to the role of education and research institutes to promote the necessity and benefit of green buildings and to change personal behaviors. People realize that green building is not only good for the environment, but also saves energy in the long term. Therefore, there is a continuous growing demand for energy efficient houses as well as energy saving technologies and products. Consequently, all market players react actively to the consumers' demands. It forms a positive circle of developing more and more green buildings.

The government, the market as well as consumers all realized that reducing CO₂ emissions is the eco-social priority in the Netherlands. Therefore several plans, agreements and covenants regarding energy consumption of new buildings and existing buildings were made in the recent years by central government, municipal governments, industry associations, companies, universities, knowledge institutes, etc. All public and private parties are working together for the energy neutral housing development in the country.



中央政府与市场各方于2008年签署的新建筑节能协议：《春天协议》（Spring Agreement-Lente-akkoord）就是社会各方参与的一个很好的案例。各协议方力图分三步走，在2020年实现新建筑零能耗的目标。

技术与创新

荷兰的绿色建筑理念强调绿色技术与创新。在过去三十年中，许多政策、补贴和财政鼓励办法都被用于推动建筑节能创新。

荷兰经济政策统计局（CPB）对荷兰建筑行业的能效创新进行了一次案例研究。在这项研究中，根据对荷兰企业在八大专业技术领域专利应用数据（1977至2006年间的欧洲专利（EP）和国际专利（WO）的分析，以此评估荷兰的绿色建筑科技创新水平。这八大专业技术领域包括：保温隔热、高效锅炉、冷暖分配和热电联产（CHP-Combined Heat and Power）、通风、太阳能和其他新能源、照明、建筑材料和空气调节系统。数据显示，荷兰是建筑能效技术领域的重要创新国家之一，在上述八大专业技术领域的平均排名中占第五位。得益于飞利浦的诸多创新，荷兰在节能照明技术领域更占有明显的领先地位。而在近十年里，高效锅炉在荷兰创新活动中也占有重要地位。（来源：荷兰经济政策统计局第198号文件，2010年1月）

An example is the “Spring Agreement” (Lente-akkoord), signed in April 2008 between the central government and market parties on energy saving in new buildings. Ambitions of all signing partners are high. Their target is to realize energy-neutral new buildings in three steps by 2020.

Technology and Innovation

The Dutch green building approach emphasizes on green technologies and innovations. Many policies, subsidies and fiscal incentives have been used to foster energy efficient innovations in buildings during the last thirty years.

The Netherlands Bureau for Economic Policy Analysis (CPB) has done a case study on energy-efficient innovations in the Dutch building sector. In this study, the level of innovation in green buildings in the Netherlands was described by the analysis of a unique dataset of patent applications (filed as European patents (EP) and international patents (WO), between 1977-2006) by Dutch firms in eight specific technological fields, namely: insulation, high-efficiency boilers, heat and cold distribution and CHP (Combined Heat and Power), ventilation, solar energy and other renewable energy sources, lighting, building materials and climate control systems. The data show that the Netherlands is one of the major innovating countries for energy-efficient technologies in buildings, ranked at the fifth position over the eight above-mentioned technological fields. Thanks to a large number of innovation activities by Philips, the Netherlands has a clear patenting advantage in the field of energy-saving lighting technologies. High-efficiency boilers also represent a substantial share of Dutch innovation activities in this domain over the last decades. (source: CPB document No. 198, January 2010)



事实与数据

- 在荷兰，建筑行业占碳排放总量的三分之一。政府计划在2030年将建筑方面的能源使用总量降至1990年水平的一半。（清洁与节约，荷兰住宅、空间规划及环境部，2007年）
- 目前，荷兰企业每年在建筑能效领域申请的专利达150项。（荷兰经济政策统计局第198号文件，2010年1月）
- 在建筑能效技术创新方面，荷兰占欧洲和国际专利总数的5%，在此领域名列第五，相对于这个小小国家而言比例已相对很高。若以单位GDP来计算，荷兰则可名列第二。（荷兰经济政策统计局第198号文件，2010年1月）
- 在“建筑行业能源转变平台”框架下，荷兰政府推出了一系列示范项目，拟于2012年修建5000座高能建筑，继而在2020年实现建筑零能耗（荷兰住宅、空间规划及环境部，2009年）

一体化服务

荷兰的建筑师、工程师和建筑材料供应商因其富有创意的设计、先进的技术和专业知识而享誉国际。这一领域的荷兰创新企业在全世界处于领先地位。积极进行跨学科合作令荷兰企业能够为国际客户提供一体化绿色建筑及城区设计的解决方案。

Facts & figures

- In the Netherlands, the building sector accounts for one third of carbon emissions. The government aims to halve the total energy use for buildings by 2030 compared to the levels of 1990. (Schoon en Zuinig, VROM 2007)
- Dutch firms file nowadays about 150 patents annually in the field of energy efficiency in buildings. (CPB document No. 198, January 2010)
- The Netherlands ranked at the fifth position and accounts for 5% of EP/WO patents energy efficiency technologies for buildings, which is relatively high for a small country. If correcting patenting activities by unit of GDP, the Netherlands will be ranked at the second position. (CPB document No. 198, January 2010)
- Within the framework of “Energy Transition Platform for the building sector”, the Dutch government launched a large range of demonstration projects, aiming to realize 5,000 high energy performance buildings by 2012 and to develop energy neutral buildings by 2020. (VROM, 2009)

Integrated Approach

Dutch architects, engineers and building material suppliers are reputable worldwide for their creative design, advanced technology and expertise. Innovative Dutch key players in this field hold a leading position on the global stage. Willingness and initiatives for multi-disciplinary collaborations empower Dutch firms to provide integrated green building and urban planning solutions for their international clients.



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在中国打造荷兰绿色建筑的平台

荷兰王国驻上海总领事馆联合18家荷兰企业建立了“荷兰绿色建筑平台”，提供全面的一体化绿色建筑和城市规划解决方案，其中涵盖了从设计到工程管理直至绿色建筑材料的运用等方方面面。

荷兰绿色建筑平台的合作企业包括:

建筑和城市规划领域

- ARX www.arxonline.nl
- BEAR-iD www.bear-id.com
- KCAP www.kcap.eu
- KuiperCompagnons www.kuiper.nl
- MVRDV www.mvrdv.nl
- Soeters Van Eldonk www.soetersvaneldonk.nl
- UNStudio www.unstudio.com

工程咨询

- DHV www.dhv.cn
- Deerns www.deerns.com
- Ecofys www.ecofys.com
- Grontmij www.grontmij.com
- KEMA www.kema.com
- Tebodin www.tebodin.com

建筑材料供应商

- DESSO www.desso.com
- HunterDouglas www.hunterdouglas.cn
- PARTHOS www.parthos.com.cn
- Philips (Lighting) www.philips.com.cn
- Sempergreen www.sempergreen.com

Dutch Sustainable Building Platform in China

To facilitate the integrated approach a Dutch Sustainable Building Platform has been established offering integrated and comprehensive green building and urban planning solutions, which include activities ranging from designing and engineering to utilization of green building materials.

Companies in the Dutch Sustainable Building Platform (DSBP) are:

Architects & Urban Planners

- ARX www.arxonline.nl
- BEAR-iD www.bear-id.com
- KCAP www.kcap.eu
- KuiperCompagnons www.kuiper.nl
- MVRDV www.mvrdv.nl
- Soeters Van Eldonk www.soetersvaneldonk.nl
- UNStudio www.unstudio.com

Engineering Consultants

- DHV www.dhv.cn
- Deerns www.deerns.com
- Ecofys www.ecofys.com
- Grontmij www.grontmij.com
- KEMA www.kema.com
- Tebodin www.tebodin.com

Building Material Suppliers

- DESSO www.desso.com
- HunterDouglas www.hunterdouglas.cn
- PARTHOS www.parthos.com.cn
- Philips (Lighting) www.philips.com.cn
- Sempergreen www.sempergreen.com



这一平台旨在促成更多的可持续性发展合作，在互利互惠的基础上将荷兰绿色设计和技术运用于中国。许多消费者也许认为绿色建筑或绿色建筑材料价格不菲，但事实并非如此。在未来，能源费用的节约将使原始投资得到超值的回报。与此同时，我们也将会达到我们共同的终极目标：提高生活品质和保护地球。

荷兰绿色建筑平台每年举行一系列研讨会和其他活动。更多关于这一平台活动以及合作企业详情，请洽荷兰王国驻上海总领事馆经济与商务事务部，电邮地址：SHA-EA@minbuza.nl。



This platform aims to enable more sustainable collaborations to apply Dutch green design and technologies in China for mutual benefit. Many consumers may think that green buildings or green building materials are very expensive, but that is not necessarily true. The saving on energy costs in the future will transcend the investments. Moreover, a common ultimate goal can be achieved - improve life quality and protect the planet.

The Dutch Sustainable Building Platform hosts a couple of seminars and events on annual basis. For more information about the activities and participating Dutch companies of the platform, please contact the Economic and Commercial Department of the Consulate General of the Kingdom of the Netherlands in Shanghai by email to SHA-EA@minbuza.nl.

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