low carbon

莱默建筑设计工程咨询（上海）有限公司
BBS INTERNATIONAL CHINA Co. Ltd.
BBS Engineers
BBS INSTITUT

Germany . China

low carbon experts

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Motivation	**目的**
Innovations in Energy saving of Buildings and Green Buildings	建筑节能和绿色建筑的新型技术
Innovations of Indoor Climate and the Climate Concepts	室内气候及方案的新理念
Innovations of HVAC System	建筑设备新型技术
Innovation in structure design	结构设计新理念

Priorities	**优先顺序**
Quality and Durability of the Building	建筑物质量和使用寿命
Quality Control	质量控制
Economical Optimisation	经济优化
Ecological Optimisation	生态优化

according to Chinese AND German Standards	**根据中国和德国标准**

innovations for buildings

climate concepts	气候方案
HVAC concepts	设备方案
building physics of the building envelope	建筑围护结构的物理学研究
green buildings	绿色建筑
solar architecture	太阳能建筑
certification of building	建筑物认证
software tools for energy efficiency and certification of the building envelope	建筑围护结构能耗优化及认证软件

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Company for Engineering in Structural Design Building Physics Redevelopment-Techniques	结构设计 建筑物理及 改建技术 工程公司
Institute for Research and Materials Testing in Applied Building Physics and Building Materials	应用建筑物理 /建筑材料研究 与材料检测研究院

The BBS is anxious to realize the current state-of-the-art in practice and consequently to give commands to the implementation.
The BBS INSTITUT supports the BBS INGENIEURBÜRO with laboratory tests while working on projects.
The characteristics of the building materials and their dependence on the accompanying situation are checked to develop an optimal concept regarding an economical point of view.

Complementary, we give advice to the development of new structures and materials. These new structures and materials will be optimized on the basis of preliminary studies which are based on scientific and practice-orientated research; also, we attend to them until launch.
We work on publicly promoted themes of research as well as concrete kind of questions of the industry and economy.

BBS一直致力于将最新的科技运用于实践之中，并对项目的最终完成给予指导。
BBS研究院为BBS工程事务的项目处理工作提供了必要的实验支持。

我们会对建筑材料特性及其适用情况进行检查，并以此为基础，从经济角度出发拟定一个最优方案。

需要补充说明的是，我们还从事新型建筑结构与材料研发的咨询工作，以科学的、面向实践的研究为基础对结构及材料进行初步研究，并在初步研究的基础上将其优化。我们会不断致力于此，直到将产品引入市场。

我们也从事国家资助的研究项目， 比如有关工业和经济的具体课题。

innovations for buildings

projects

international projects


BMU-MoHURD Jimei Xiamen – China
BMU-中国住房和城乡建设部 厦门集美

International projects

BBS INTERNATIONAL.
国际项目
莱默建筑设计工程咨询(上海)有限公司

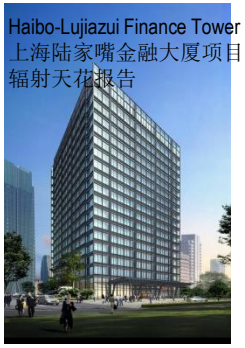

KSP-National of library Beijing - china
北京国家图书馆- 中国


ssp-University, Deggendorf
德根道夫大学

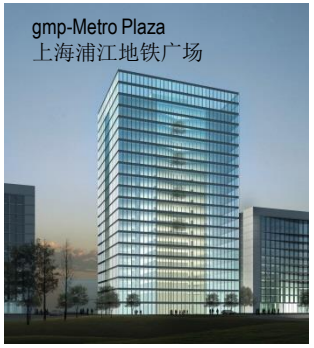

stauth-High School
Brunswick – Germany
布伦瑞克高中 – 德国

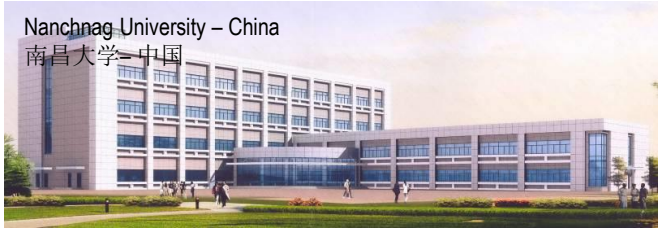

Hanna Tower, Villnius
维尔纳Hanna大厦


alea-Gemini Tower, Dubai
迪拜Gemini写字楼


Haibo-Lujiazui Finance Tower
上海陆家嘴金融大厦项目
辐射天花报告


gmp-Metro Plaza,
上海浦江地铁广场


gmp-Metro Plaza
上海浦江地铁广场


Nanchnag University – China
南昌大学– 中国

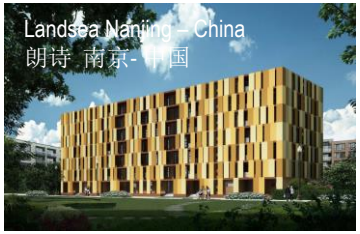

Logon -Nucleic Acid Sciences, Kunshan – China
昆山科技园 – 中国


Haibo -Architecture Site, Changning
长宁

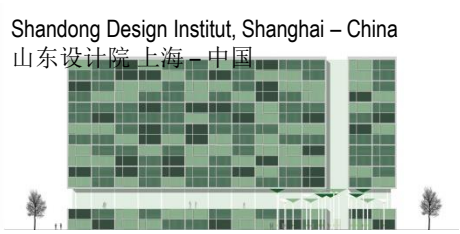
international projects

International projects

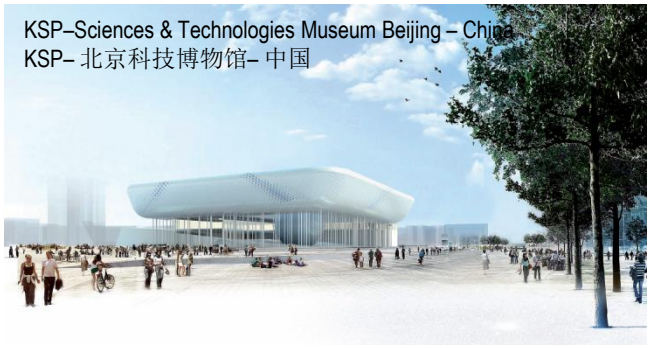
BBS INTERNATIONAL
国际项目
莱默建筑设计工程咨询(上海)有限公司

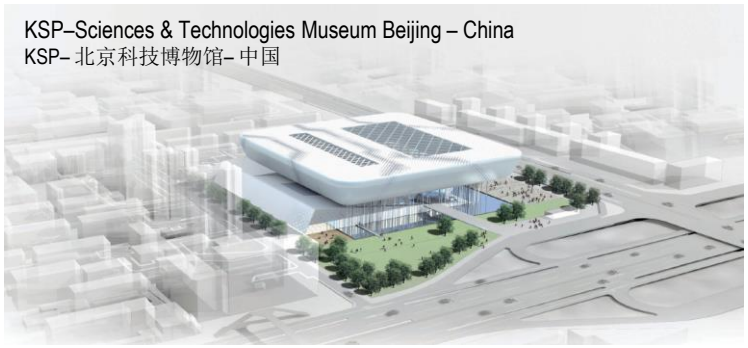

Landsea Nanjing – China
朗诗 南京- 中国

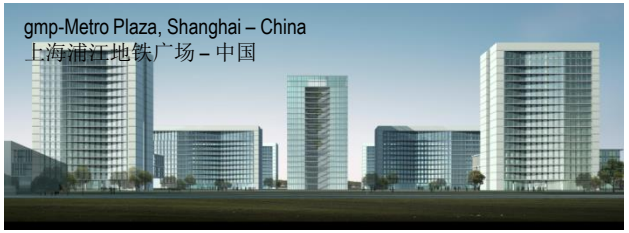

Landsea Nanjing – China
朗诗 南京- 中国

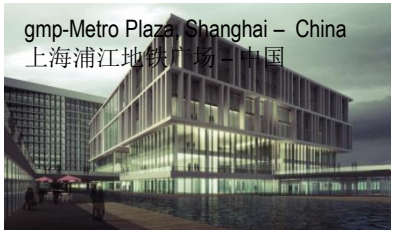

Shandong Design Institut, Shanghai – China
山东设计院 上海 – 中国


KSP – SIPO Beijing – China
KSP –SIPO 北京- 中国


KSP–Sciences & Technologies Museum Beijing – China
KSP– 北京科技博物馆– 中国


KSP–Sciences & Technologies Museum Beijing – China
KSP– 北京科技博物馆– 中国


gmp-Metro Plaza, Shanghai – China
上海浦江地铁广场 – 中国

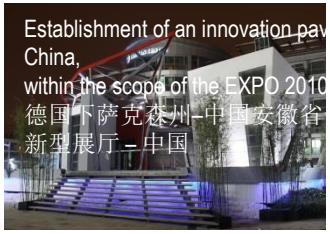

gmp-Metro Plaza, Shanghai – China
上海浦江地铁广场 – 中国

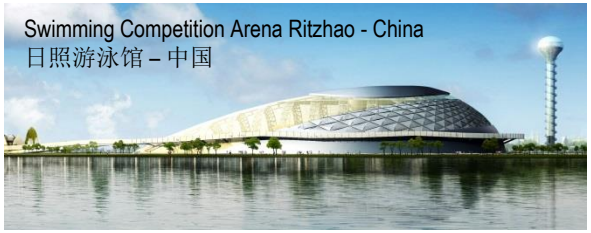

gmp-Metro Plaza, Shanghai – China
上海浦江地铁广场 – 中国

international projects

International projects

BBS INTERNATIONAL
国际项目
莱默建筑设计工程咨询(上海)有限公司





Chapel of Our Lady of Guia – Macao
澳门特别行政区圣母雪地教堂

low carbon concepts

low carbon concepts

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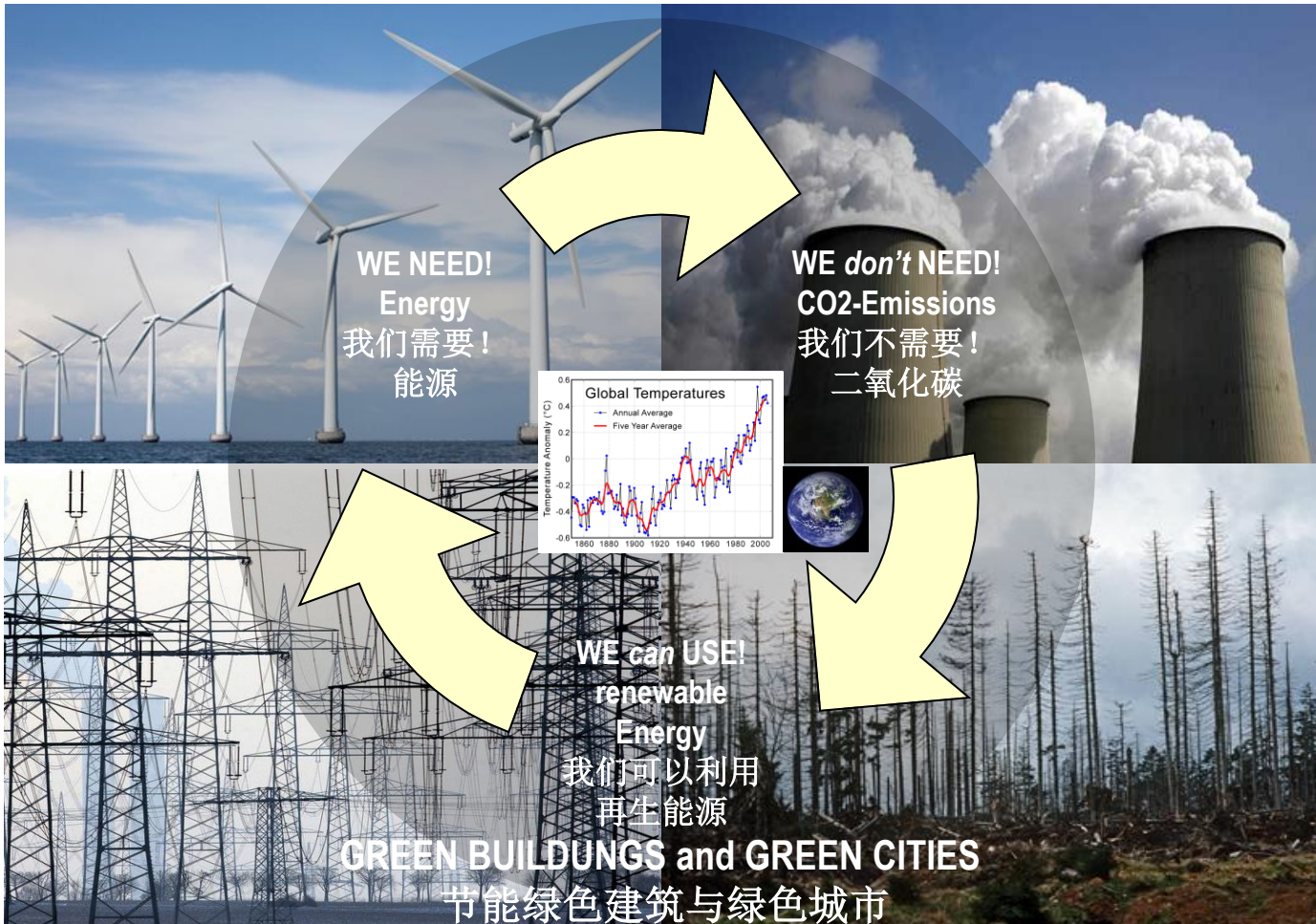
Energy – OUR problem!
能源- 我们面对的问题！



low carbon

Environmental Protection
环境保护

To protect OURSELVES -
WE have to protect the ecosystem!

The ecosystem is the whole of the reciprocal effects between all components of the environment and nature. The components of the environment are divided into
abiotic goods (ground, water, air/climate) and biotic goods (humans, plants, animals, biotopes and biocenosis).

为了保护我们自己，
我们必须保护我们赖以生存的生态系统！

生态系统是自然环境的各个组成部分与自然界之间所有相互影响的集合。
自然环境的组成部分包括非生物环境（大地、水、空气/气候）以及生物环境(人类、植物、动物、以及生物群落）。

low carbon buildings

Green building is the practice of creating structures and using processes that are environmentally responsible and resource-efficient throughout a building's life-cycle from siting to design, construction, operation, maintenance, renovation and deconstruction.
This practice expands and completes he classical building design concerns of economy, utility, durability, and comfort. Green building is also known as a sustainable or high performance building.

绿色建筑既是一项结构创造的实践活动，也是一项建筑流程的应用。在建筑流程中对环境负责同时节约资源始终贯穿整个楼房寿命的各个方面，从选址、设计、结构、施工、维护、到改造以及到拆除。
这样的实践扩展和补充了传统建筑设计关于经济性、实用性、耐用性、和舒适性等各个方面。绿色建筑也被称为可持续或高性能建筑

Green buildings are designed to reduce the overall impact of the built environment on human health and the natural environment by:

- efficiently using energy, water, and other resources
- protecting occupant health and improving employee satisfaction and productivity
- reducing waste, pollution and environmental degradation.

For example, green buildings shall incorporate sustainable materials in their construction (e.g., reused, recycled-content, or made from renewable resources); create healthy indoor environment with minimal pollutants (e.g., reduced product emissions); and/or feature landscaping that reduces water usage (e.g., by using native plants that survive without extra watering).

绿色建筑设计用来减少建筑环境对人类健康和自然环境的整体影响：

- 有效利用能源、水和其他资源
- 保护使用者健康和提高员工生产力
- 减少浪费,污染和环境恶化

例如,绿色建筑在建造过程中应当采用可持续性材料（如再生的可循环材料，或由可再生原料制作的材料）;通过最小的污染， 营造健康的室内环境 （如降低污染物排放）; 和/或特色景观美化以降低用水（如种植当地植被，而不需要额外浇水）。

Definition of GREEN BUILDINGS
绿色建筑的定义

Aspects of Built Environment:	Consumption:	Environmental Effects	Ultimate Effects
§ Siting § Design § Construction § Operation § Maintenance § Renovation § Deconstruction	§ Energy § Water § Materials § Natural resources	§ Waste § Air pollution § Water pollution § Indoor pollution § Heat islands § Stormwater runoff § Noise	§ Harm to human health § Environmental degradation § Loss of resources

建筑环境方面	消耗	环境效应	最终的效果
选址 设计 建设 施工 维护 改造 拆除	能源 水资源 材料 自然资源	浪费 空气污染 水污染 室内污染 热岛 雨水溢流 噪声	对人类健康的危害 环境恶化 资源的流失



low carbon buildings

OUR reasons to build GREEN BUILDINGS
我们建造绿色建筑的原因

The built environment has a vast impact on the natural environment, human health, and the economy. By adopting green building strategies, one can maximize both economic and environmental performance. Green construction methods can be integrated into buildings at any stage, during design and construction, till renovation and deconstruction. However, the most significant benefits can be obtained if the design and construction team takes an integrated approach from the earliest stages of a building project. Potential benefits of green building can include:

Environmental benefits

- Enhance and protect biodiversity and ecosystems
- Improve air and water quality
- Reduce waste streams
- Conserve and restore natural resources

Economic benefits

- Reduce operating costs
- Increase the building durability and quality
- Create, expand, and shape markets for green product and services
- Improve employee satisfaction and productivity
- Optimize life-cycle economic performance

Social benefits

- Enhance occupant comfort and health
- Increase aesthetic qualities
- Minimize strain on local infrastructure
- Improve overall quality of life

建筑环境对自然环境、人类健康和经济有着巨大的影响。通过采用绿色建筑的策略我们可以最大限度取得经济效益与环境效益。绿色建筑方法可以被纳入到建筑的任何阶段之中,从设计、施工、到改造和拆除。然而,要取得其最大效益则须要设计与建筑团队在项目最初阶段就采用整合式设计。绿色建筑的潜在好处包括:

环境效益

- 提高和保护生物多样性和生态系统
- 改善空气和水的质量
- 减少废气物
- 节约和恢复自然资源

经济效益

- 降低营运成本
- 提高建筑耐久性和质量
- 为绿色产品和服务创造、扩大以及塑造市场
- 提高使用者生产率
- 优化经济成效

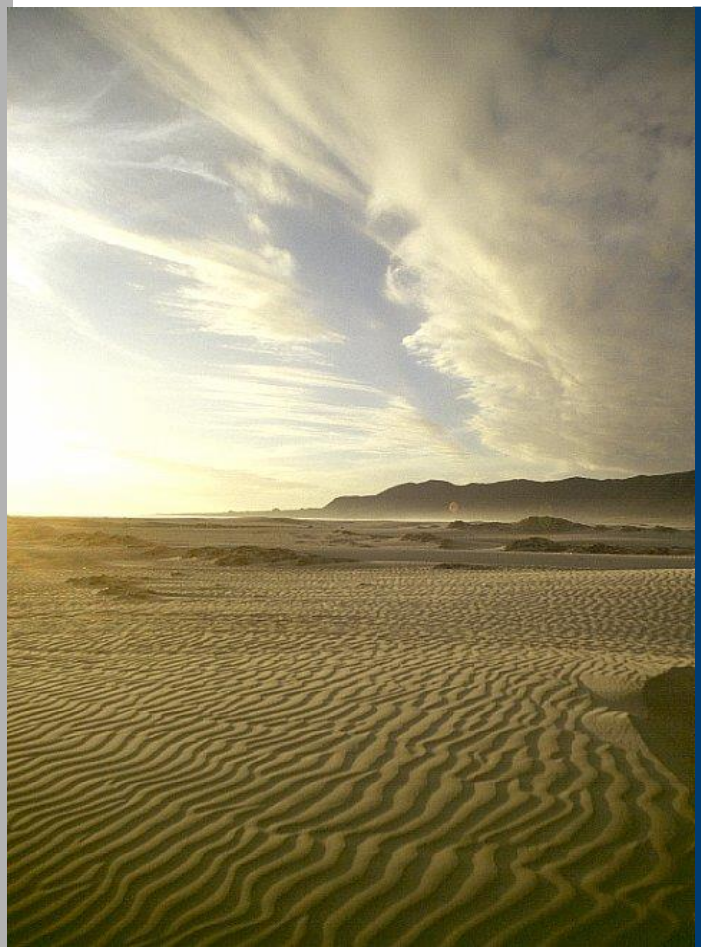
社会效益

- 提高使用者舒适度和健康
- 提高美感质量
- 减少对当地基础建设的压力
- 全面提高生活质量

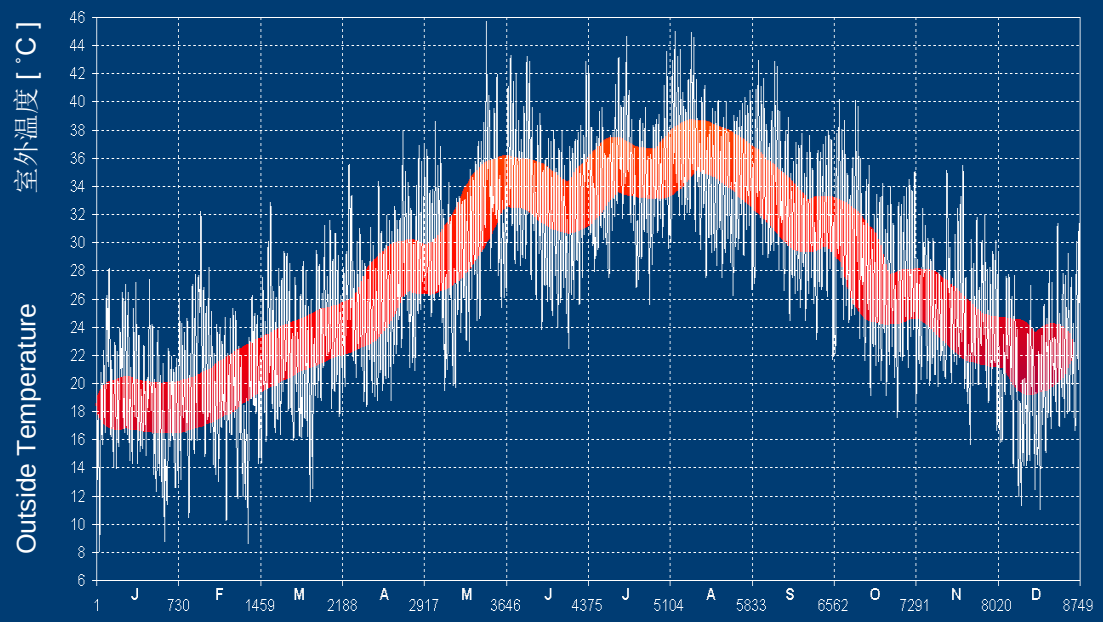




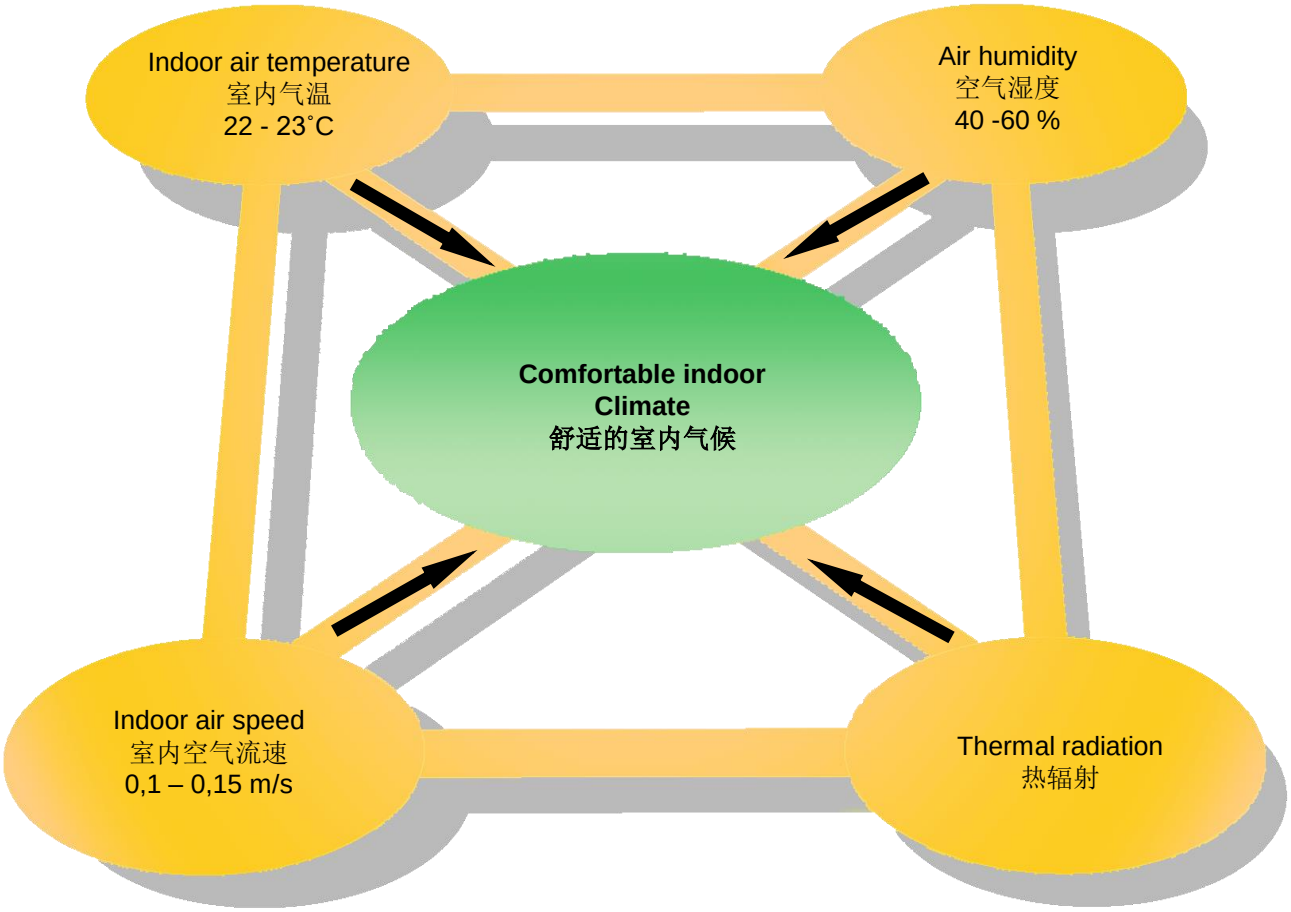
Influence of the building
建筑物的影响



Annual course of outside Temperature 年室外温度变化曲线



Influence of the indoor climate
室内气候的影响

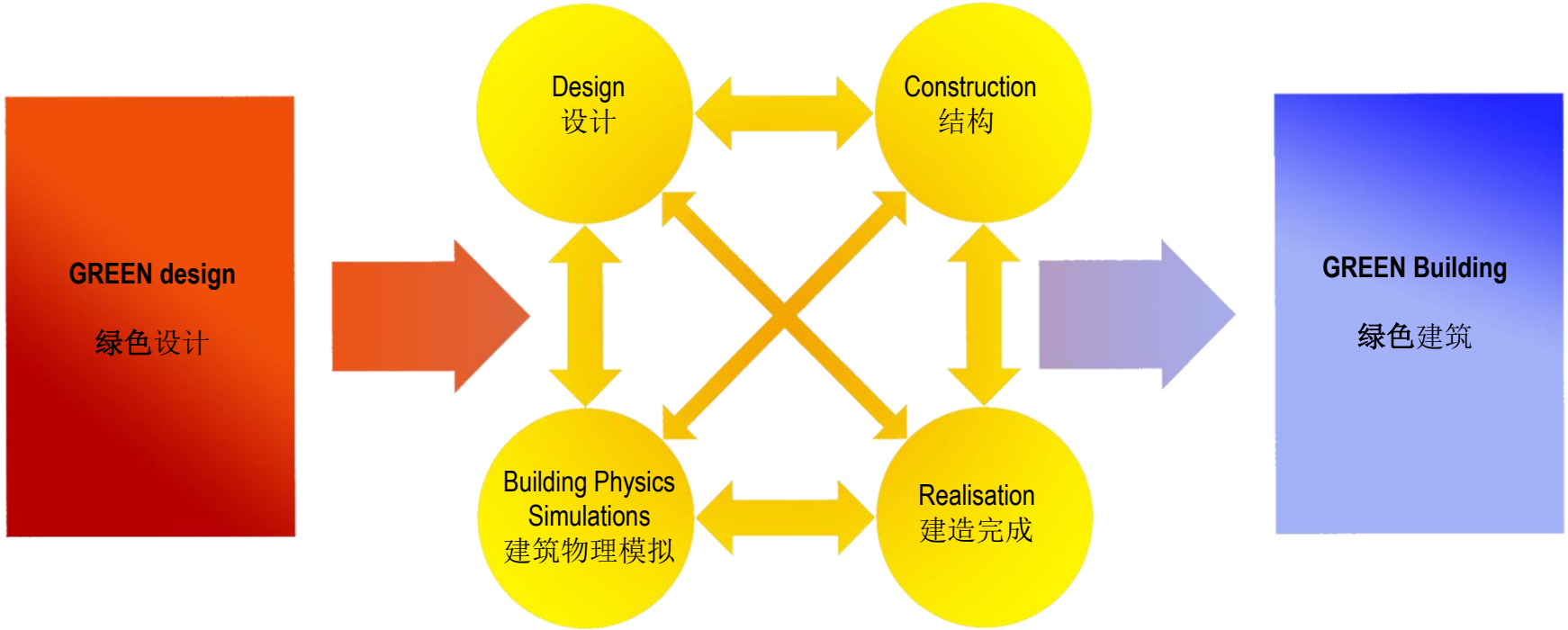


low carbon buildings

Creation of GREEN BUILDINGS
绿色建筑的创建

These issues can only be solved technically in an analytical way by GREEN PLANNING by calculations and simulations!

这个问题的解决在技术上只可以通过分析的方法：计算与模拟来实现绿色建筑设计！

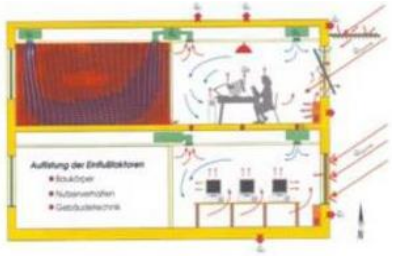


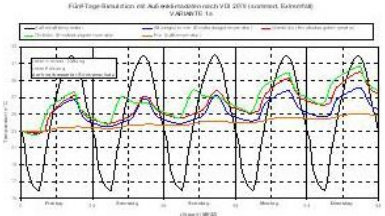
low carbon buildings

OUR tools for the creation of GREEN BUILDINGS
我们创建绿色建筑的工具

thermal / energetic / moisture simulation
of buildings / rooms

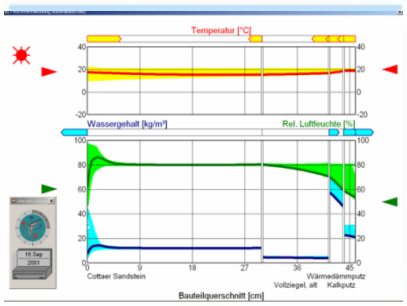
对建筑物和房间进行
热力学 / 能源 / 潮湿 模拟

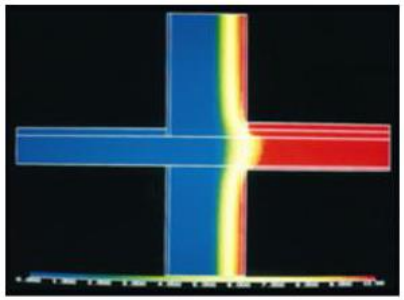




thermal / moisture simulations
of building components

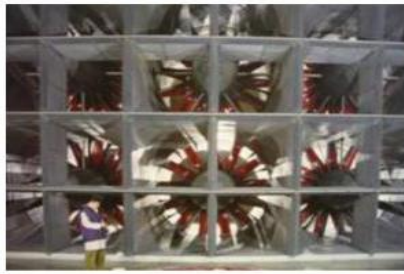
对建筑物建筑构件进行
热力学 / 潮湿 模拟





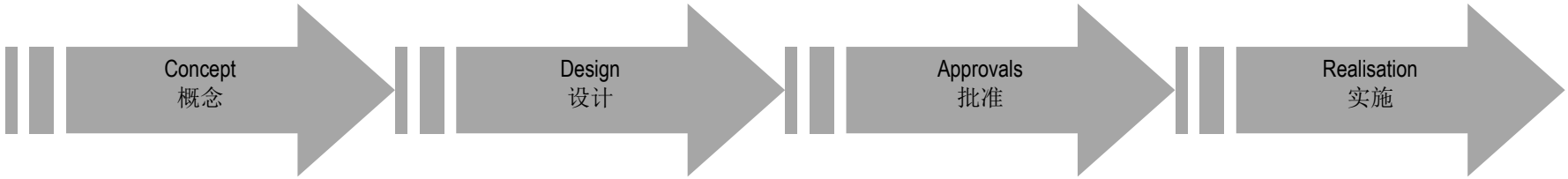
building / material
research

建筑物/ 建材
研究



low carbon buildings

Our Work Plan
我们的工作步骤



PRE Studies Architecture Architect 设计师初步设计方案	Final Architecture Design Architect 设计师最终设计方案	HVAC incl. PRE Calculation Design Institute 设计院室内设备方案初步计算	Final HVAC Calculation Design Institute 设计院室内设备最终方案

same costs
相同成本

PRE Climate Concept BBS BBS气候方案初期报告	Final Climate Concept *incl.* PRE Calculation HVAC BBS BBS气候方案终期报告包含室内设备方案初步计算	Consulting of Design Institute BBS BBS对设计院咨询

low carbon buildings

OUR Work Plan
我们的工作步骤

TO CREATE 创造	TO DESCRIBE 详述	TO TAKE CARE 照顾到	TO ACHIEVE 从而实现
green buildings low carbon buildings 低碳绿色建筑 green cities low carbon cities 低碳 绿色城市	energy reduction thermal insulation sun shading 能耗的降低 保温 遮阳 renewable energies solar systems geothermic systems energy recovering-Systems 可持续能源 太阳能系统 地热系统 能源再生系统	Ecology Economy 生态 经济	*Decrease* Energy demand CO2-emmissions Maintenance costs *降低*能源需求，二氧化碳排放以及维护费用 *Increase* Building quality Indoor comfort Durability of the construction *提高*建筑物质量，室内舒适度,以及房屋寿命 *Optimize* investment cost Owners benefit *完善*投资支出和业主利益 *and* *raise* work performance of staff protection of health improvement of quality of life *提高*工作效率和员工的健康水平与生活质量

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