



让我们共同打造气候中和的未来
Building a climate-neutral future together.

瑞士在建筑领域实施能源战略的 法规、经济、教育和信息工具

The Swiss legal, economic, educational and information instruments for the implementation of the energy strategy in the building sector

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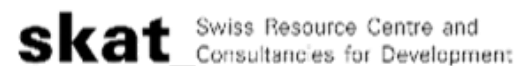
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中华人民共和国
住房和城乡建设部



Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra



国家层面的法律工具

Legal Instruments on National Level

- 设定最低的能效标准和能源标签
Minimum Energy Performance Standards and energy labels
- 化石燃料进口商补偿义务规定，执行主要委托给各州（省）
Compensation obligation for importers of fossil transport fuels regulations and enforcement mainly delegated to the cantons (provinces)

联邦州层面的法律工具

Legal Instruments on Cantonal level

- 建筑物能源使用和二氧化碳排放的技术规定
Technical regulation on energy use and CO2-emissions of buildings
- 建筑质量监控人员的认证
Accreditation of private building control staff

国家层面的经济工具

Economic Instruments on National Level

- 为提高建筑能源效率和推广可再生能源供暖系统提供补贴
CO2 Levy related to intensity of fossil heating fuels Subsidies for efficiency improvement and renewable heating system
- 对瑞士减少温室气体排放的项目实行基于绩效的资助制度
Performance based funding system for project reducing GHG emissions
- 对光伏系统和节电项目给予一次性补贴，最高可覆盖总投资成本的30%
One-off payment covering up to 30% for PV systems and electricity saving projects

联邦州层面的经济工具

Economic Instruments on Cantonal level

- 为高能效建筑以及低碳排放建筑提供补贴计划
Subsidy schemes for energy efficient and low carbon emission buildings
- 为提高建筑能效的投资实施税收优惠
Tax discounts on investments for energy performance of buildings

国家层面的教育工具

Educational Instruments on National Level

- 关于建筑行业初级和继续职业培训的国家信息网站
National information website on building primary and continued vocational training the energy sector
- “建筑教育倡议”项目
Program “Education campaign for buildings”
- 信息平台以及向建筑业主提供免费的现场咨询
Platform for Information and free on-site consultancy to building owners
- 国家能源报纸，关于建筑能源使用的概况介绍和成功案例
National energy newspaper, fact sheets and success stories on energy use in buildings

联邦州层面的教育工具

Educational Instruments on Cantonal level

- 职业培训学校
Vocational training schools
- 公共能源咨询
Public Energy Consultancy
- 大范围的信息和宣传活动
Range of information and awareness events

省市领导面临的四个挑战

FOUR CHALLENGES FOR MAYORS

挑战

CHALLENGE

1

规划阶段：不仅考虑建筑，还应考虑区域和交通

Planning phase. Consider not only building but also district and mobility

挑战

CHALLENGE

2

建设阶段：要考虑隐含能耗和循环建材

Construction phase. Consider embodied energy and recycled material

挑战

CHALLENGE

3

运营阶段：考虑维修、再利用而不是简单更换

Operation phase. Consider repair, reuse instead of replacement

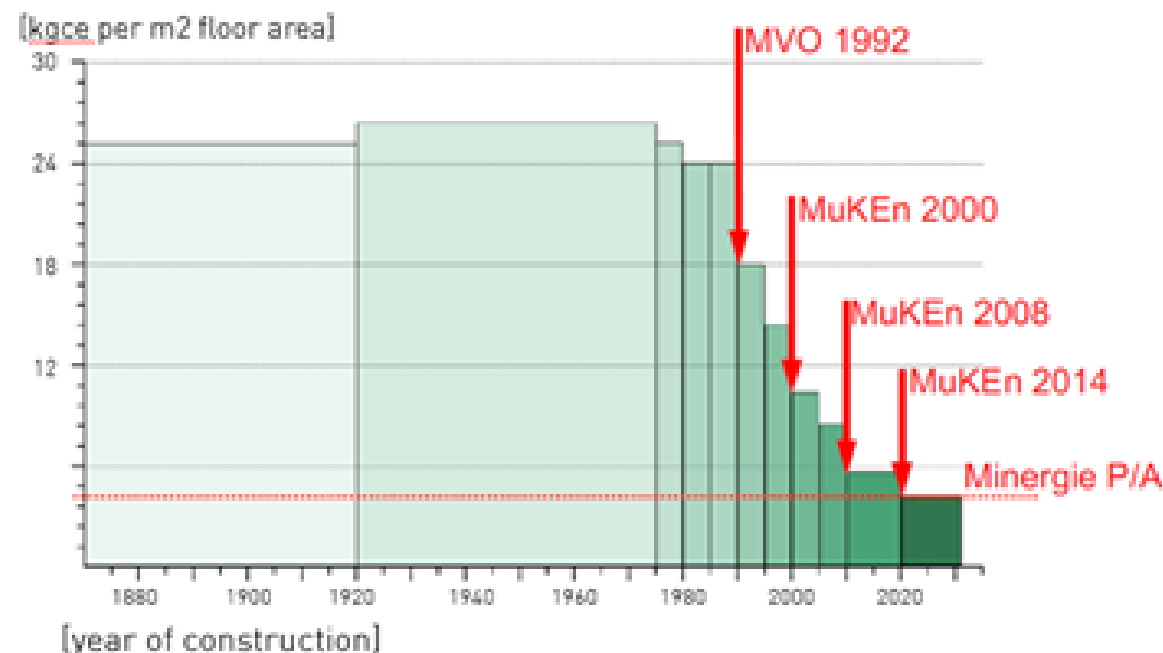
挑战

CHALLENGE

4

拆除阶段：考虑寿命、生命周期和回收再用

Decommissioning phase. Consider longevity, lifecycle and recycling



推广零碳建筑是一场马拉松，
而不是一场短跑比赛
ZEB is a marathon, not a sprint

瑞士在建筑领域实施能源战略的关键利益相关者

SWISS STAKEHOLDERS OF ZEB IMPLEMENTATION

政府行政/政策层面

- 瑞士联邦能源办公室 (SFOE)
- 联邦环境办公室 (FOEN)
- 各州政府
- 市政当局

协会，工业，贸易界

- MINERGIE
- 2000瓦社会
- 瑞士建筑师与工程师协会
- 贸易协会
- 科学和大学/ 研究机构
- 国家研究计划和网络
- 职业培训机构
- 建筑物业主和投资者/开发商

Government Administration / Policy level

- Swiss Federal Office of Energy SFOE
- Federal Office for the Environment (FOEN)
- Cantons
- Municipalities

Associations, Industry, Trade

- MINERGIE
- 2000-Watt-Society
- SIA
- Trade Associations
- Science and Universities / Research
- National research programs and networks
- Vocational training institutes
- Building owners and investors / Developers

大型和长期的国家支持计划，例如瑞士能源、2000瓦社会、脉冲项目，服务于

- 自愿行动
- 公私合作伙伴关系
- 信息传播
- 加强对供应商和消费者的教育和培训
- 用于提高建筑能效性能的SIA建筑标准
- 计算工具（由私营部门开发，由主管部门认可）
- 为规划者提供的执行辅助工具，包括易于理解的描述和实际案例
- 对所有相关的市场参与者和行政人员进行早期和广泛的培训，以了解和应用这些要求
- 建立一个基于建筑开发商自我声明的城市级执法系统，由当局随机检查

Large and long-term national support programs like SwissEnergy, 2000 Watt Society, Impulse Programmes for

- voluntary actions
- public private partnerships
- information dissemination
- strengthening education and training of both providers and consumers
- **National SIA standards** for energy performance
- **Calculation tools** (developed by private sector, accredited by Authorities)
- **Execution aids for planners** with easily readable explanations and practical examples
- **Early and extensive training** of all relevant market players and administration staff in understanding and applying the requirements
- **Development of a city level enforcement system** based on self-declaration of the building developer to be checked by the Authorities on random basis

瑞士执行的三角法则

IMPLEMENTATION TRIANGLE

培训及能力建设

- 为建筑师、工程师、投资者提供培训计划
- 专业协会的培训项目 (SIA, ...)
- 针对成人与儿童的电视和媒体宣传
- 针对市民的宣传活动
- 针对高校人员的研讨会和教学
- 高校的研究项目

EDUCATION, CAPACITY BUILDING

- Impulse Programs for Architects, Engineers, Investors
- Training Programs by Professional Associations (SIA, ...)
- TV & Social Media for Adults and Kids
- Information Campaigns in Cities
- Workshop and Teaching at Universities
- Research Projects at Universities

激励，引领，鼓舞

- 激励示范项目
- 著名企业通过ZEB示范项目来提升行业领军者形象
- 建筑/城市设计竞赛
- 国家能源计划(1980年至今)
- 2000瓦社会(苏黎世理工学院和各城市)
- 地方倡议 (市场、活动、竞赛)



标准规范的执行

- 在试点地区 (苏黎世、巴塞尔、日内瓦) 启动新标准
- 省级和国家标准
- SIA和VSHL技术规范
- 在各地区执行迷你能耗建筑标准

STANDARDS, NORMS, ENFORCEMENT

- Pilot Cantons (ZH, BS, GE) Start New Standards
- Cantonal & National Standards
- SIA & VSHL Technical Norms
- Enforcement through Cantons with MINERGY

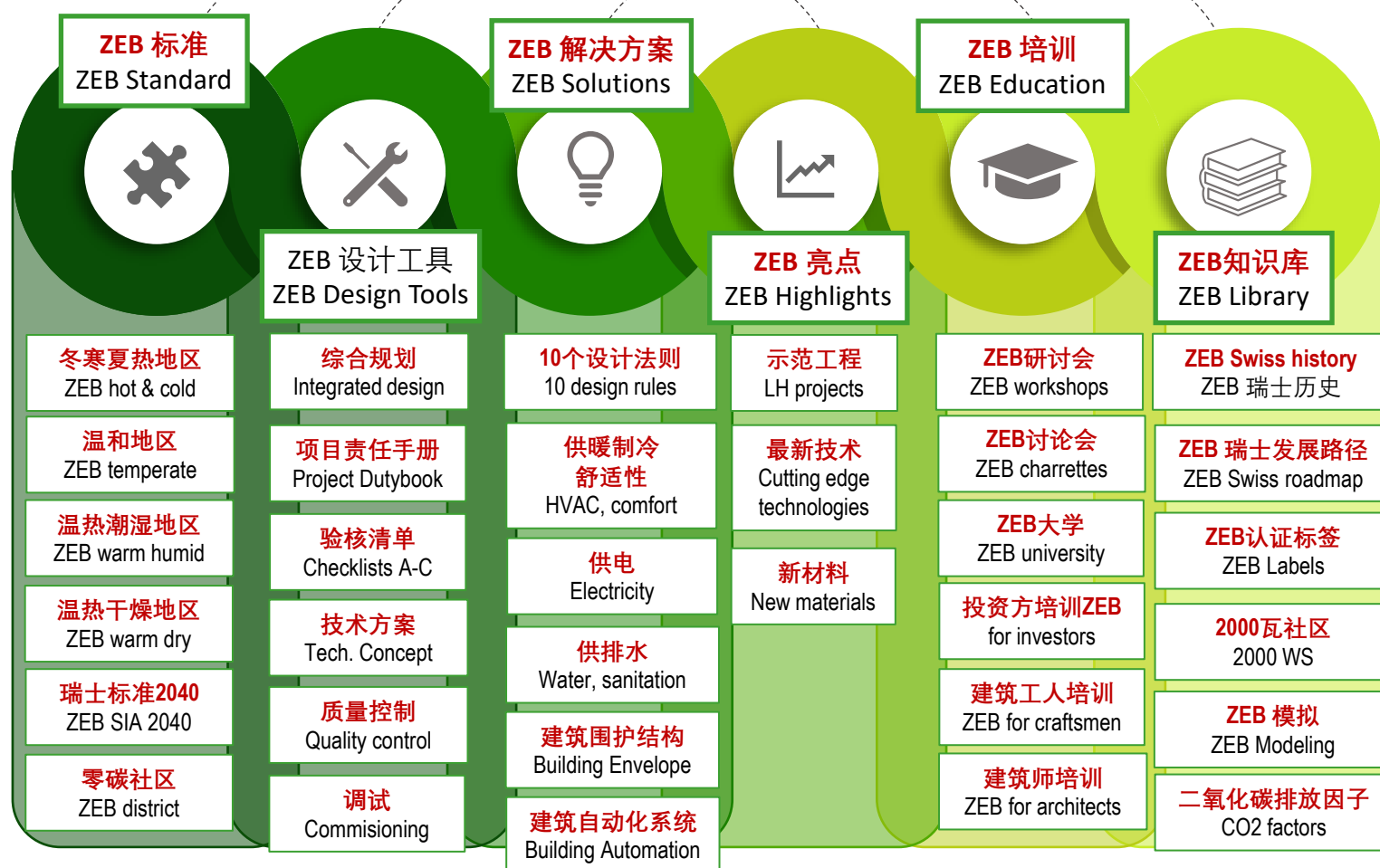
INCENTIVES LEADERSHIP MOTIVATION

- Incentives for Lighthouse projects
- Prominent Companies use ZEB for Leadership Image
- Architecture / Urban Design Competitions
- National Political Energy Programm (1980 – Today)
- 2000 WATT Society (ETH & Cities)
- Local Initiatives (Markets, Events, Competitions)

SDC ZEB 项目 的项目信息构架

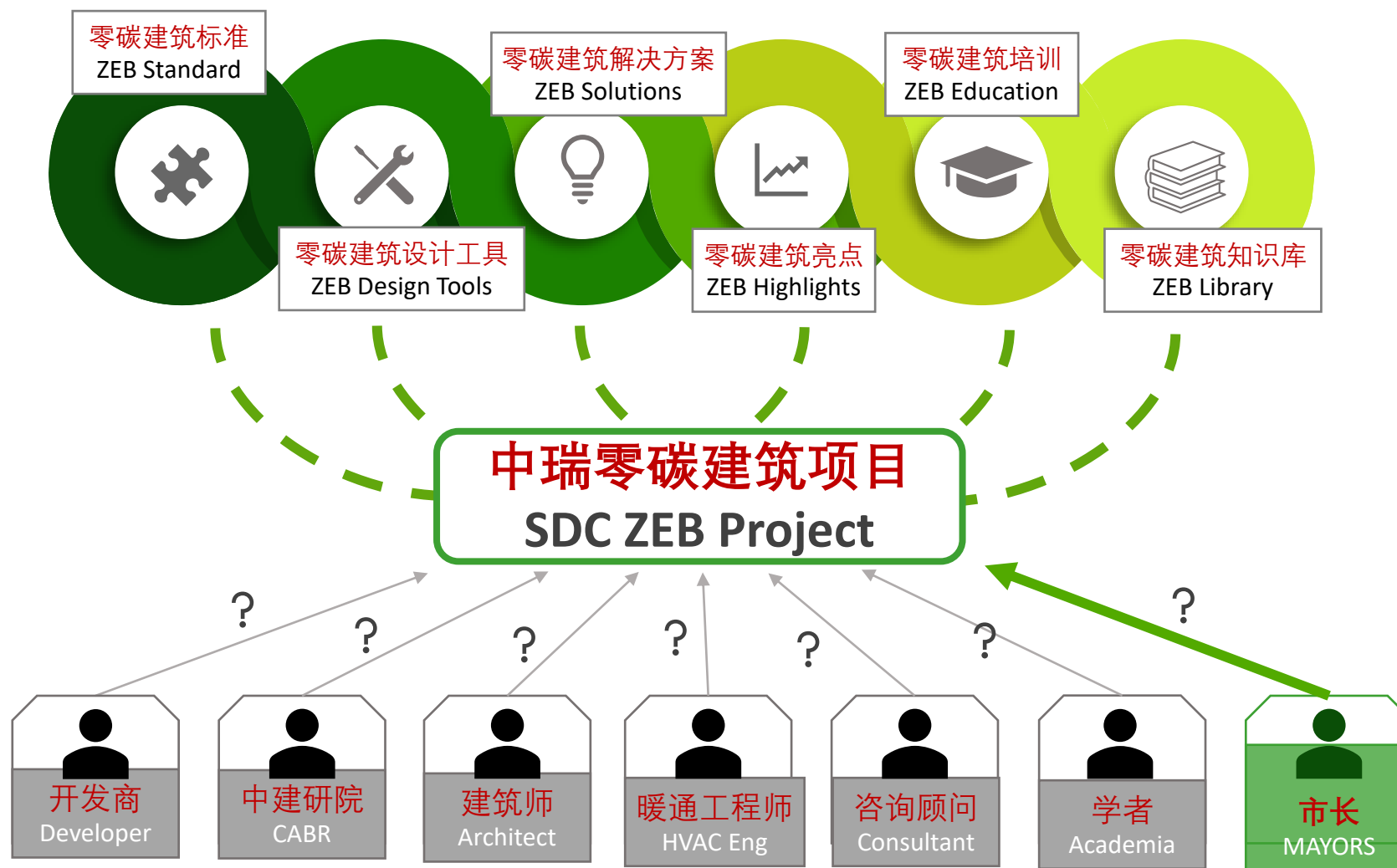
SDC ZEB PROJECT INFORMATION ARCHITECTURE

中瑞零碳建筑项目 SDC ZEB Project



SDC ZEB项目以迅速加快的步伐在不断产生出重要信息，工作报告，咨询建议，线上讲座，技术指南，能力培训等项目产物

The SDC ZEB project is rapidly producing a great amount of information and knowhow



市长和所有利益相关者必须能够直接且快速地获得这些数据、事实和体验。这可以通过中瑞零碳建筑项目框架下基于数字AI开发的信息系统得以实现。

The mayors and all stakeholders must have direct and rapid access to these data, facts and experiences. This is made possible by the SDC ZEB project with a digital AI based information system.

零碳建筑成功之花

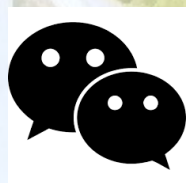
THE FLOWER OF ZEB SUCCESS





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感谢
Thanks



中华人民共和国
住房和城乡建设部



Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra
**Swiss Agency for Development
and Cooperation SDC**

EET 环能科技
CABR EET



CABEE 中国建筑节能协会
CHINA ASSOCIATION OF BUILDING ENERGY EFFICIENCY

intep

skat Swiss Resource Centre and
Consultancies for Development

 **Empa**

HSLU Lucerne University
of Applied Sciences
and Arts