KPMG-CCTF Community Centre

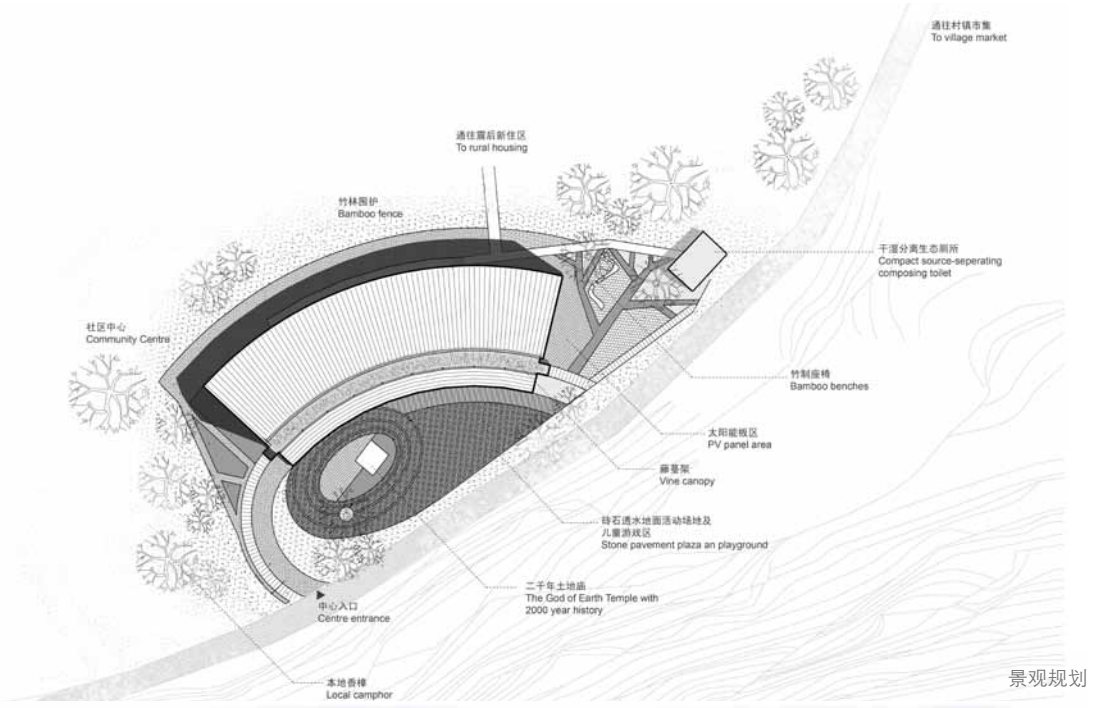
毕马威安康社区中心
——绿色创新与国际协作带动可持续乡村建设

客户 中国儿童少年基金会（CCTF）
毕马威中国（KPMG CHINA）
地点 中国四川省彭川市磁峰镇
建筑师 郝琳 欧华尔顾问有限公司董事、可持续发展总监
规模 450m^2

为了支援四川地震灾区重建，促进当地社区建设和发展，毕马威中国携手中国儿童少年基金会和成都市妇女联合会在四川省彭州市磁峰镇乡村兴建了一座绿色建筑——毕马威安康社区中心。

建筑师秉承以人为本、节能环保和可持续发展的绿色乡村建设理念，致力于应用节能环保设计和本地区可更新素材，包括全面地应用预制的产自本地乡镇企业和永续林区的复合竹结构、竹外围护板和内外竹地板、零污染的农业秸杆材保温墙体、再生集成木材双层保温窗等建筑材料。

这个低预算的慈善项目得到了多方面志工、物质与资源的大力支持，来自约30个国际和国内的先进绿色企业、科研单位和政府机构，通过合作伙伴的方式提供了广泛支持。

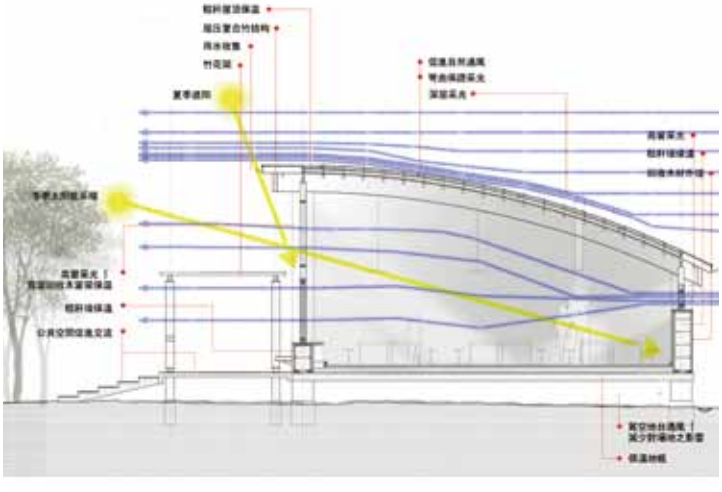


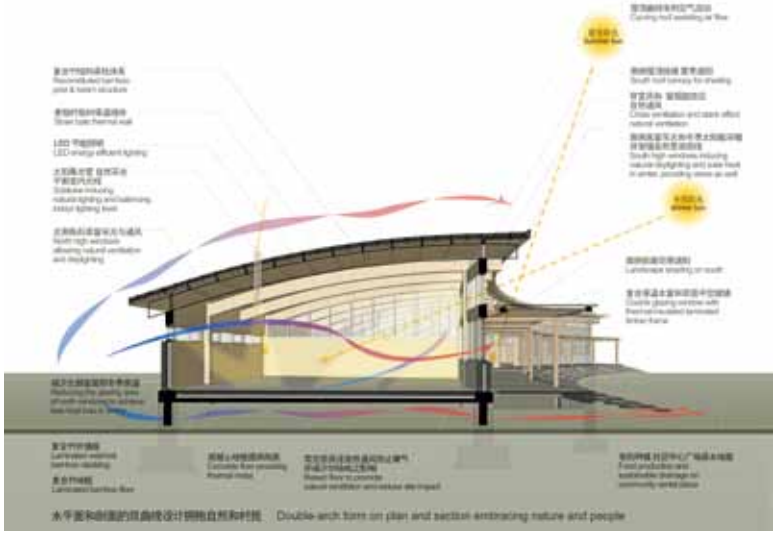
景观规划

南立面

北立面

西立面





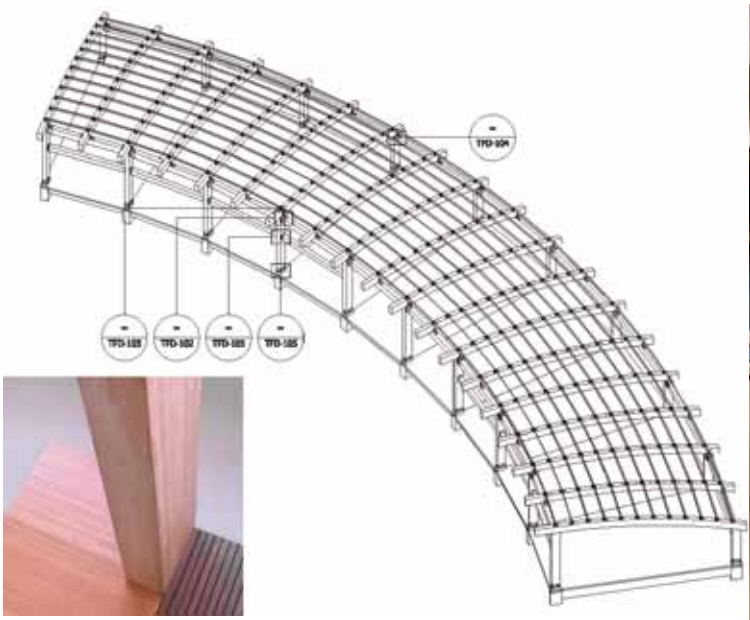
水平面和剖面的拱曲线设计拥抱自然和村民 Double-arch form on plan and section embracing nature and people

面积450m^{2}的社区中心于2010年5月17日正式落成并投入使用，现用于本地孩童的课余活动和村民的假期培训。

建筑体现了一系列乡村绿色与智能策略，包括项目计划支持公司、个人、慈善机构在中国贫困地区通过资金、服务、义工的努力，以赋予想像力的方式落实社会、环保与社区计划；采用被动式生态环境调节系统，提升室内环境质量并落实低碳计划。

新月形优美的单层曲面结构，有效地利用不同时段与季节的太阳和气流，无需额外的照明能耗。具体的被动设计措施包括：建筑坐落最佳的东南朝向；夏季屋顶南侧挑檐遮挡夏日，冬季南侧高窗引入温暖的阳光；屋顶太阳能导管引入自然采光，平衡室内自然光分布；南侧景观竹杆花架遮阴；北立面带状窗减少冬季热损失；曲面屋顶顺导盛行北风；通过穿堂风和高窗烟囱效应自然通风；建筑底层架空促进自然通风并减少基地影响；保温性能良好的空心墙；双层节能木窗；广泛应用新型环保低碳建材；全面应用预制的产自本地乡镇企业和永续林区的复合竹结构；研究表明，因为固碳的因素，本项目的竹材基本上是碳中和；无污染的农业秸秆纤维板材保温墙体和屋顶构造；复合竹材建筑围护和室内外地板；复合集成木环保窗。

其他的可持续特点包括：先进的乡村教育智能通讯与教育设施，包括CCTF乡村安全应急体验教室中心；在设计建设中融合了场地中拥有两千年历史的“土地庙”；竹梁柱结构采用榫卯形式提升建筑的抗震性能；LED节能照明；本地的开放式生态农业与乡村绿色生活方式培训；景观融合本地物种和用于乡村灌溉的雨水利用。



KPMG China, in partnership with China Children and Teenagers' Fund (CCTF) and Chengdu Women's Federation, have built an exemplar green community centre in Cifeng Village Sichuan Province of China as part of efforts to renovate the earthquake–devastated poor region and promote the development of the local rural communities.

The architect has made full use of locally sourced materials in building a people–oriented, energy–saving, and environmentally sustainable village. The project's main construction materials have come from renewable resources – such as a full reconstituted bamboo post & beam structure prefabricated from local factory and sourced from local sustainable forest, pollution free agricultural straw fibre panel for wall and roof system, bamboo cladding and floor finish.

This low budget philanthropy project has received pro bono manpower, resources and financial support from 30 international and domestic green enterprises, research institutions and government agencies through partnership.

The 450 square meter Community Centre was opened on 17 May 2010, and is used for local children's extracurricular activities and villagers' vocational training. The project has advanced sustainable rural community development by means of corporate sponsorship, public participation and public–private partnership, and will serve as a paragon for improving sustainable construction, educational, cultural and recreational facilities in rural communities.

Building highlights a series of rural green & intelligent strategies.

–programmes assisting companies, individuals, and charitable foundations reach out to imaginative social, environmental and community schemes in less developed areas in China with funds, services and volunteer effort

–passive bio–climate design to improve IEQ and achieve a low carbon scheme.

–new moon shape tall and gracefully curving single storey structure that captures the varying hourly and seasonal angles of the sun and air flow effectively that additional heating, cooling and lighting are nearly unnecessary.

Specifically, passive design measures include,

–best southeast solar orientation

–in summer sunlight shaded out of the building by south high eaves; in winter sunlight penetrating into heart of building through high

windows
–roof solatube inducing natural lighting and balancing indoor lighting level
–landscape pergola shading on south
–reducing glazing area of north opening for less heat loss in winter
–curving roof assisting prevailing north wind
–cross and high window stack effect natural ventilation
–raised floor promoting natural ventilation and reducing site impact
–highly insulated cavity walls
–double glazing window with thermal–insulated laminated timber frame
–concrete floor providing thermal mass

Innovative green labelled materials to reduce carbon emission, waste and indoor pollution

–reconstituted bamboo structure prefabricated from local factory and sourced from local sustainable forest
–research has shown that YBkouki and Dasso bamboo products we used in the project are CO_2 neutral due to the fact that bamboo is
–an important and very fast CO_2 'fixator'
–formaldehyde free agricultural straw fibre panel for wall and roof system
–reconstituted bamboo cladding and indoor and outdoor floor finish
–recycled reconstituted timber for window

Other green & intelligent features

–advanced communication connectivity and intelligent facilities for rural education
–integrate a 2000 year old "the God of Earth Temple" within the design
–bamboo mortise–tenon joint structure for robust seismic performance
–energy efficient measures such as LED lighting
–local rural training such as eco farm and green lifestyle
–native species planting and sustainable drainage for rural irrigation