



softgrid 索杰

Architecture | Urban Design | Sustainability



Portfolio: Sustainable Urban Design



SoftGrid is a German-led architecture, urban design and sustainability consulting firm in Shanghai. Since 2008, we provide Integrated Design services for office, industrial, hospitality and education projects from start to finish.

We have built our reputation on applying a holistic, big picture perspective:

Looking at the complete building life cycle, we design “future-proof” buildings, that meet China / EU climate targets while creating immediate added value for users, FM and owners.

Each of our projects generates a unique identity and follows highly individual KPIs:

Every design creates client-specific performance synergies between functionality, comfort, energy and operation – verified via “digital twin” variant comparisons. A comprehensive reporting facilitates efficient decision-making processes and ESG compliance. Our CO₂-neutral Roadmaps offer strategies for step-by-step implementation.

Pairing a European design methodology and highly flexible network approach with 15 years of local experience in China, SoftGrid is a trusted consultant for international companies like BASF, Disney, Festo, Marriott and VW, as well as Chinese businesses and municipalities.

SoftGrid’s success stories include various “Asia and China First” applications of European DGNB and PHI Passive House sustainability certification systems.



LiuJiang Garden City

2011

Linear Ecological Park Based on Flood Control

> planning

Most of the New City area is a current swamp with numerous waterways and regular flooding. At the same time, the district is situated in a wide valley plain with stunning views to the surrounding world-famous Caster Mountains of Guang Xi Province. This new development will expand and complement the existing main city, Liu Zhou, around 10km to the north.

The Urban Master Plan is developed along 5 interrelated steps which generate a unique identity of the new city area and guarantee making the best use of the site's potentials and inherent qualities:

- Existing waterways linked up and embedded in larger landscaped flood plains throughout entire site and beyond
- This results in a low-level continuous ECO-Network undisturbed by roads, linking entire community and adjacent city
- The open, un-built ECO-Network provides a blueprint to generate View Corridors to mountains within and beyond the site
- CBD and Public Centers are placed like islands, connected by a rigid road grid contrasting the organic ECO-Network
- ECO-Network is used as main space for high-performance public transport connection for entire district

Based on this strategy and the positioning of Liu Jiang as the “Backgarden” of Liu Zhou, an entire catalogue of building typologies has been developed in parallel to the land use and zoning design. Most notably, these categories span from conventional functions such as “residential”, “office” etc. to open spaces, public spaces and infrastructure, such as bridges. It also includes distinct hybrid categories which emphasize and encourage more direct relations between living, working, daily necessity and vivid civic life.

New Transportation Strategies developed in cooperation with Department of Industrial and Transportation Design, University Burg Giebichenstein, Halle, Germany.

Project Location:
Liuzhou, CN

Project Function:
New City District

Project Size:
15,000,000m²

Project Type:
Urban Design, Sustainability, Controlled Detailed Planning and Design, Feasibility Orientation of New City.

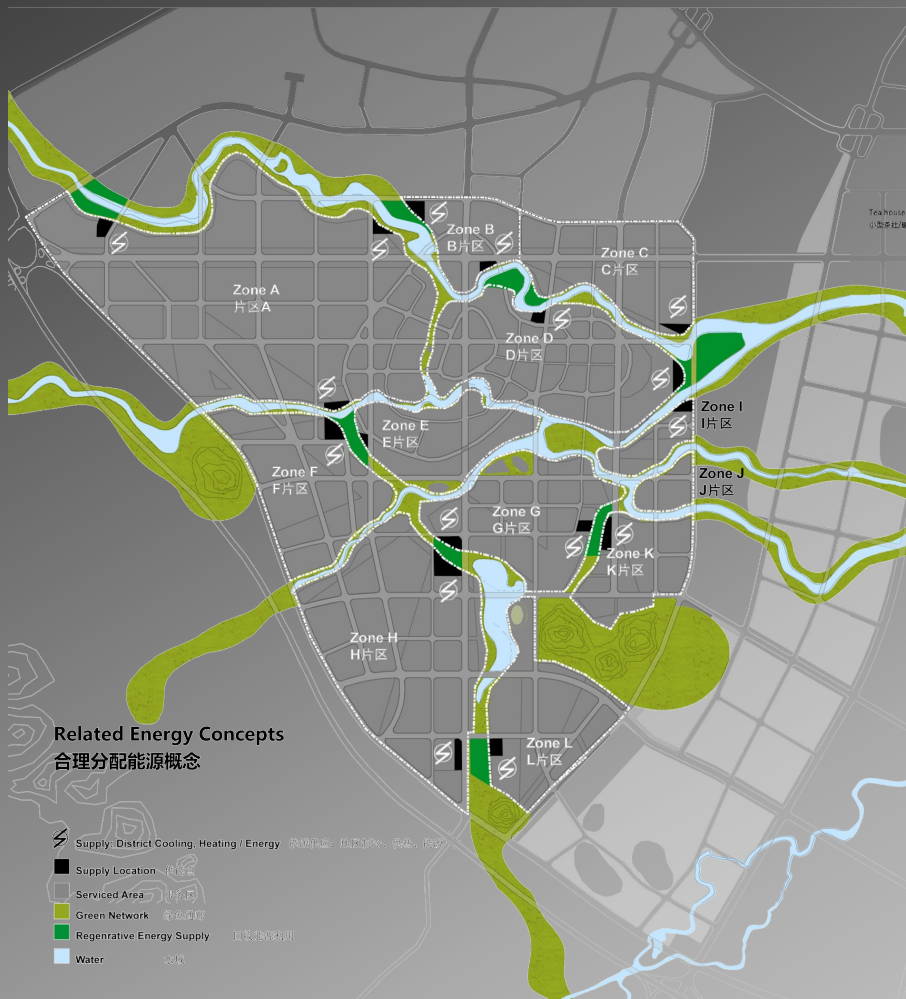


Problem: 20-year Flooding Zones
问题：20年的洪水流域

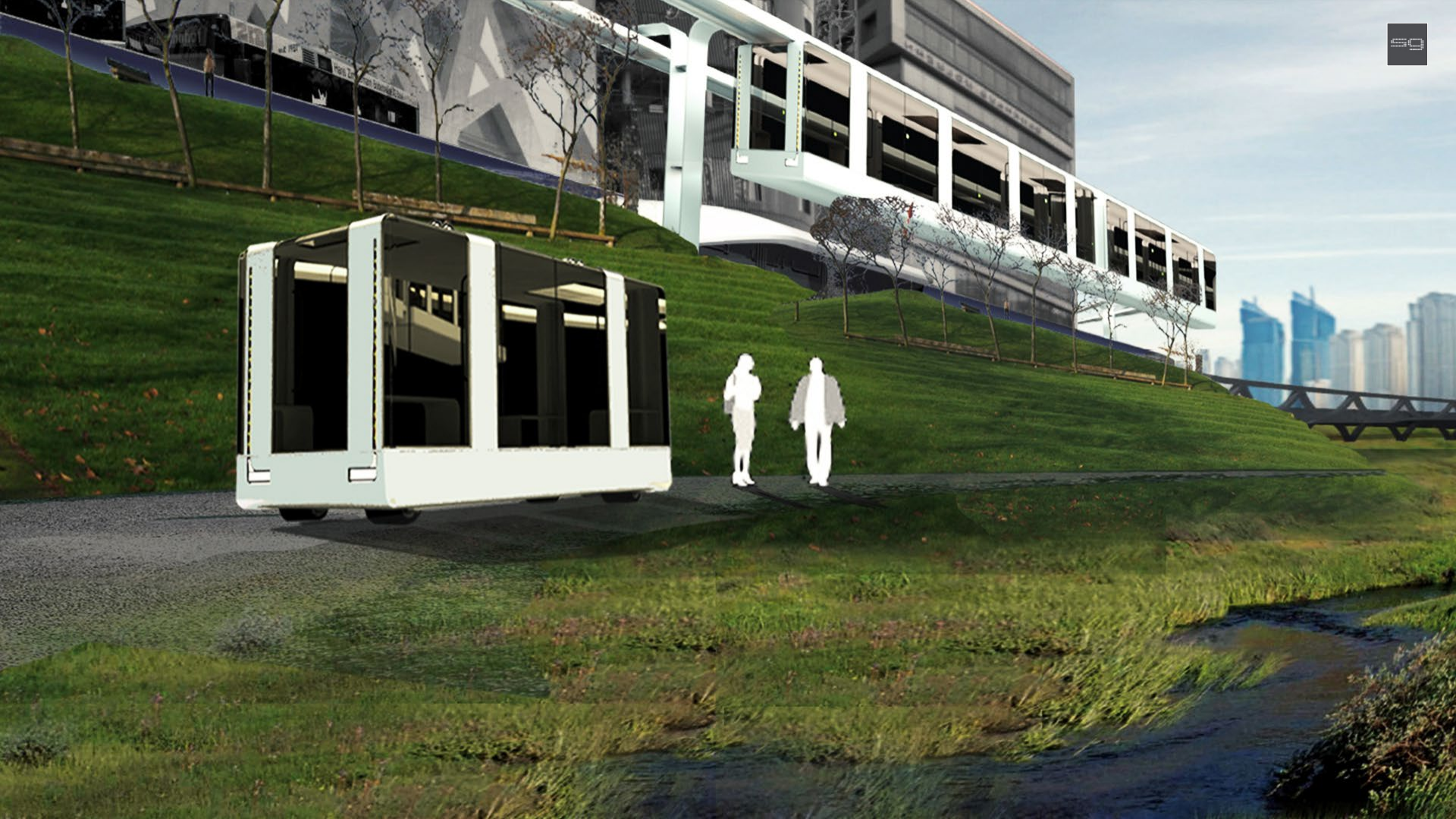


Problem turned Resource: Retention Park Network
问题转化为资源：保留公园网络











Guang'ao High-Tech Park

2021

Integrated Energy and Co-Creation Community

> In construction

Industrial Technology Park is set in the center of a new city development zone and will be realized in a phased sequence over the next years.

The heart and first development phase of the Park is the Innovation Cluster with four office towers, Fortune 500 company headquarters and a riverside R&D Community. Strategic facilities are shared within the entire cluster, while also accessible in the future to companies in the surrounding industrial clusters.

In a second phase, 6 dedicated industry clusters will be developed alongside a Finance and Commercial Village. Each cluster is optimized to feature a highly flexible mix of units and allow for easy adaptability in the future.

As is still developing quickly, the Industrial Park is designed as an adaptable, scalable “Fit-for-Future” system, laying the foundation for ongoing improvements and innovation, establishing the Park as leading center of excellence in the region. Some of the implemented strategies:

- Co-Creation Functional Synergies (as business model saving investment and operation costs while retaining maximum flexibility in future)
- Energy Community Synergies (area is great for use of PV / P2P Network allows for super-efficient use and storage of energy as well as reducing peak loads and thereby investment costs)
- On-Demand Synergies (use of shared functional spaces as well related energy and maintenance costs are booked and billed precisely within an on-demand system)

Project Location:
Guigang, CN

Project Function:
Industrial, Mixed Use

Project Size:
1,500,000m²

Project Type:
Master Plan, Sustainable District Development, Integrated Architectural Concept Design incl. Variant Comparison





High-tech Community Concept

Network Synergies

Network Synergies on Overall Development Level

Core Zone provides the on-working platform, R&D facilities, Executive Offices in the Leeward Tower and all kinds of conferences, meeting and production space.

The Service Core Zone also links to directly with retail and F&B facilities to provide convenient services around the core, outdoor and outdoor. The Core Zone can be easily accessed from all nearby clusters via shared bus.



High-tech Community Concept

Decentralization Synergies

Decentralization Synergies

Energy Demand Reduction

By use of the extensive roof surfaces for PV, a considerable amount of energy is directly available within the community, reducing the electricity needed to be sent from the grid and cost for operation.



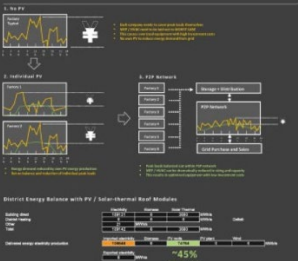
High-tech Community Concept

"Fit-for-Future" Synergies

Decentralization Synergies

F2P (Peer-to-Peer) Network: Overall System

On a larger scale, each individual company uses the F2P network to exchange processing and computing services - when necessary, peak capacity - with the Shared Core Zone. This can be used directly, independent of the development in every individual case (including the smart metering and billing of energy consumption etc.). Facilities can be used as "Pay-Per-Demand" services.









XinCheng Vision Masterplan

2020

Using existing cultural, economic and ecological Resources > planning

XinCheng is a small regional center in the rural areas of Lai Bin County. It currently consists of an existing urban area and a newly assigned development area some kilometers away. The city has a rich cultural history and is embedded in a stunningly beautiful Caster Mountain surrounding.

The Urban Master Plan aimed at enhancing all natural resources and existing assets. By establishing a unique central area, deriving its quality from a new, contemporary momentum as much as traditional habits and routines, a new quality of life is brought into the city that will set it apart from competing regional centers and secure the community's prosperity in the future.

This strategy is based on a variety of topics all of which are balanced in a synergetic symbiosis:

- New City Centre as combination of CBD, Tourism and Natural Mountain Area (built to integrate urban fabric, waterways, green corridors and mountain panorama into one experience)
- Rural-Urban Integration and Circular Economy (use of forest management and agricultural waste etc. as part of energy production)
- Tourism Network and Public Spaces (Green Network and Circular Road connect all new and existing tourism, cultural and scenic areas, including attractive boat harbors for stunning longer excursions into the natural areas beyond the site itself)
- Attractive and Healthy Residential Areas (entire community is integrated with Green Activity Network along existing waterways for sports, recreation and social activities)
- Integrated Business Model and Urban Marketing (existing economy, tourism and new development as highly attractive live-and-work destination for businesses, families and professionals)

Project Location:
Xincheng, CN

Project Function:
New City District

Project Size:
17,500,000m²

Project Type:
Urban Design, Sustainable District and Typology Strategies.





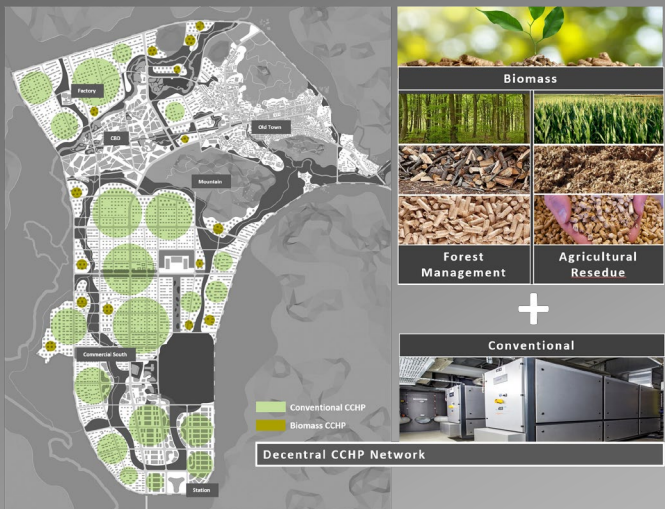
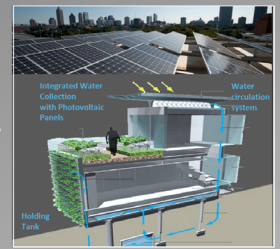


PV Roof Areas



Central Public Area

Green Network

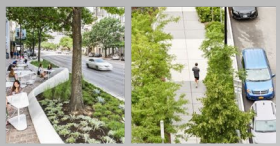


Community



Green Network

Waterways



District Energy Balance Baseline (no additional measures)

Primary energy demand of the whole district

Demand of district incl. storage losses electricity produced in the district	Electricity MWh/a	PE demand MWh/a	CO ₂ emissions t/a
	2482664	5958394	2502526
2482664	5958394	2502526	
0	5996822	2518665	
100% Demand	100% PE	100% CO ₂	

Delivered energy demand of the whole district

Total	0	0	0	0	0	0	MWh/a
2533851	0	0	0	0	0	0	
Imported electricity	Biomass	Gas	Oil	Other	PV roofs	PV plant	
2482664	0	0	0	0	0	0	
100% Electricity							

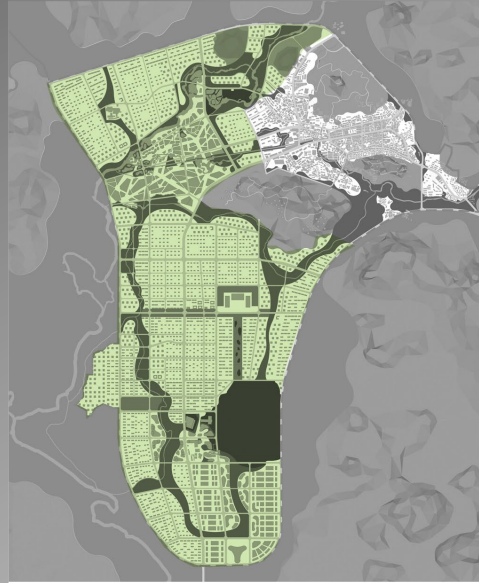
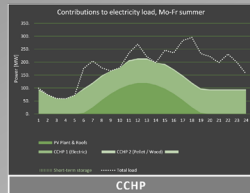
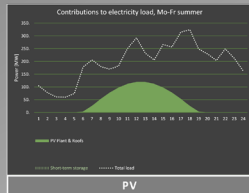
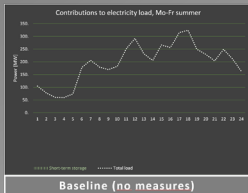
District Energy Balance Optimized

Primary energy demand of the whole district

Demand of district incl. storage losses electricity produced in the district	Electricity MWh/a	PE demand MWh/a	CO ₂ emissions t/a
	2122105	5597868	1915139
2122105	5597868	1915139	
1171472	6604549	1917425	
85% Demand	95% PE	75% CO ₂	

Delivered energy demand of the whole district

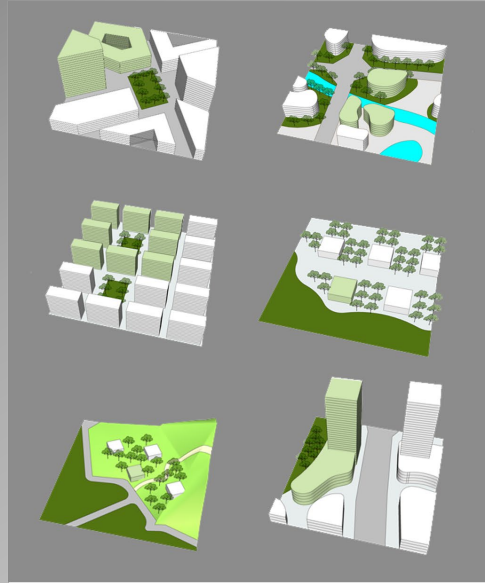
Total	0	0	0	0	0	0	MWh/a
2236849	0	0	0	0	0	0	
Imported electricity	Biomass	Gas	Oil	Other	PV roofs	PV plant	
1024587	97333	0	0	0	284726	54546	
80% Electricity	2.5% Biomass				17.5% PV Individual and Communal		



Passive DISTRICT Strategies

District Energy and CO₂ Balance, including:

- Building typologies and specific consumption
- use of individual PV in community network
- Regenerative and conventional energy supply and delivery
- E-Mobility and energy storage



Passive BUILDING Strategies

Comfort and Energy Reduction, including:

- Orientation and building geometry
- Shading and window ratio
- Building envelope performance



Guangxi Institute of Technology

2020

New People-focused Campus in Passive Design

> In construction

The Master Plan aims at creating a convenient, unique and experimental environment to attract experts, professors and students to the new 25.000 student capacity Guangxi Institute of Technology. Strategically, the development aims at deriving its contemporary, modern soul from references to the traditional culture and stunning rural surroundings.

In the resulting concept, therefore, the central campus landscape plays the decisive element as a space for professional interaction, public encounter and social exchange. All multi-functional and public buildings are integrated into a sponge-city-driven park which comes to live like an animated Chinese landscape painting as a city-wide attraction - with the top of the iconic Library Building as a public observation deck. The Campus Park further extends to include an F&B Village embedded in the landscape and bordered by natural waterways.

Surrounding the main park are the four Colleges with short distance links to all main university functions as well as dorms. Additional areas include a Hi-Tech Hub, International Communication Center and Hotel as well as additional accommodation / dwellings.

All sustainability aspects of the master plan development - water management, operation costs (especially for cooling), energy consumption and interior thermal comfort, later adaptability and change of use, exterior usage and comfort - have all been considered as integral parts of the design.

For all College Buildings - already under construction when SoftGrid started this project - a retro-fit strategy for the facade and building envelope was developed aiming at dramatically raising thermal and user comfort by redefining the thermal envelope, optimizing A/V ratio and as a result considerably lowering operation costs for the HVAC system as a whole.

Project Location:
Guigang, CN

Project Function:
Education

Project Size:
1,750,000m²

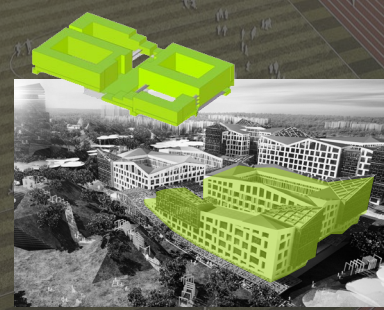
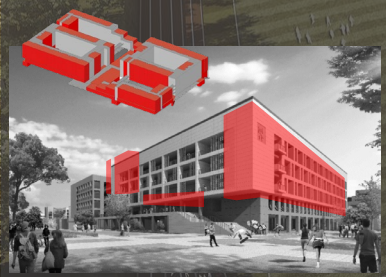
Project Certification:  **PASSIV
HAUS
INSTITUT**
None. PHI-designed.

Project Type:
Master Plan, Integrated Architectural Design New and Retro-Fit, all design phases.









ORIGINAL – 100%
Based on 342 exterior doors: $n_{50} = 12.0$

Heating Demand:	26 W/m ²	100%
Cooling Demand:	124 W/m ²	100%
Heating Load:	39 W/m ²	165%
Cooling Load:	27 W/m ²	100%

OPTIMIZED – ca. 45%
Based on 46 exterior doors: $n_{50} = 3.0$

Heating Demand:	7 W/m ²	27%
Cooling Demand:	56 W/m ²	45%
Heating Load:	12 W/m ²	31%
Cooling Load:	10 W/m ²	40%





XiJiang Riverside District

2020

New Waterside Urban Lifestyle Center

> planning

In essence, this is not a city extension, but the new CBD, civic, lifestyle and urban activity center of Guigang, Guangxi province - bringing together all aspects of city life, as can be seen from the fact that SoftGrid's Guangxi Institute of Technology, Guang'ao High-Tech Park and Campus Hub projects are all situated within this new comprehensive master plan.

While creating a continuous urban nature and recreation space, the waterways transition from one environment to the other: from EXPO and iconic landmark tower, to riverside F&B, culture park, culture forum, CBD and entertainment village, sports hub and so on - relating to the neighboring community as well as creating new city-wide destinations.

Views and sightlines are carefully planned, so as to use the generous natural open landscape to provide a foreground for the new skyline silhouette, while the CBD towers as well as the riverside public spaces of the Culture Forum set the stage for a dramatic backdrop of the surrounding Caster Mountains.

Residential, educational, industrial and commercial communities are all planned inspired from ancient local village patterns and courtyard typologies: providing green lanes as central communal public and activity spaces, connecting sub-centers and the main riverside park for walkers, cyclists and eco-friendly water taxis.

In its richness of spatial and functional variety, its meticulous exploration of architectural style, typology and energy reductions, combined in a common rural-urban identity, the XiJiang Riverside Master Plan is nothing short of articulating a comprehensive, sustainable vision ready for implementation.

Project Location:
Guigang, CN

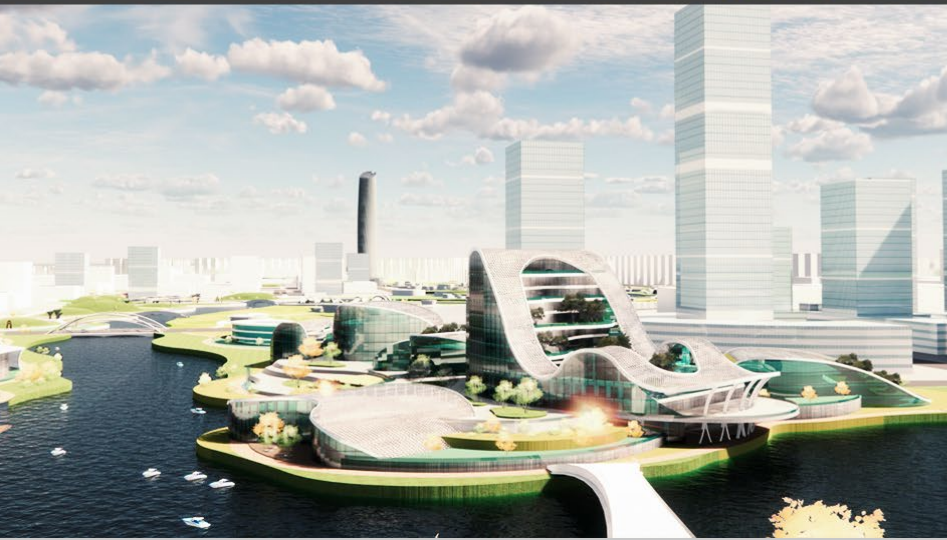
Project Function:
Urban District

Project Size:
24,500,000m²

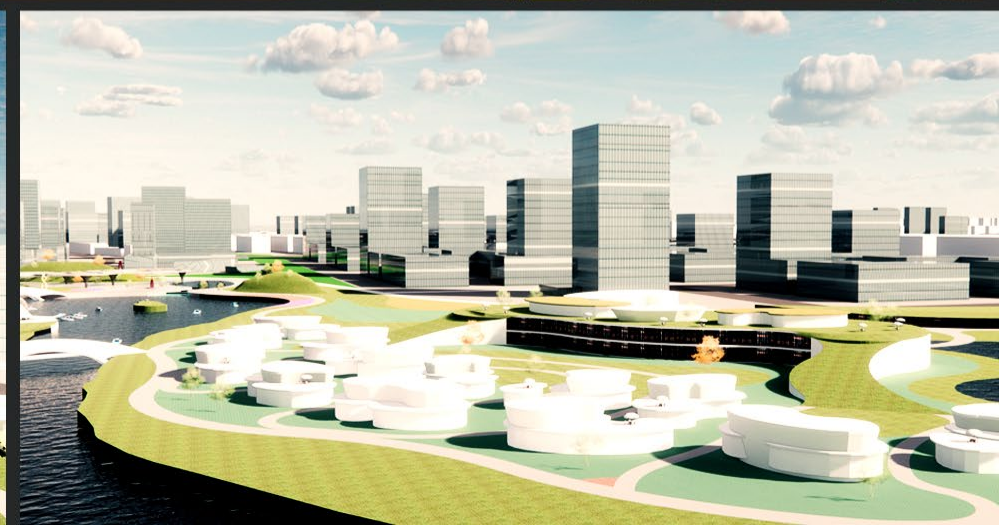
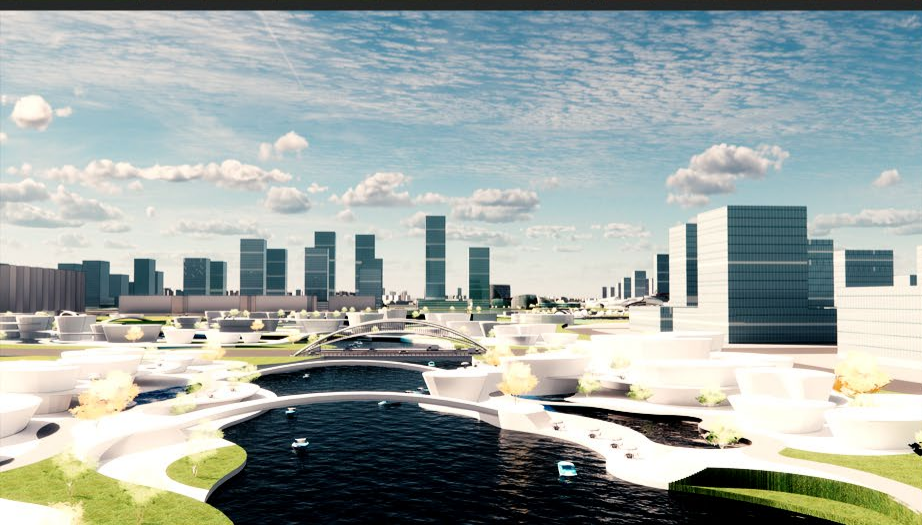
Project Type:
New City District Urban Design, Sustainable District and Architecture Typology Strategies

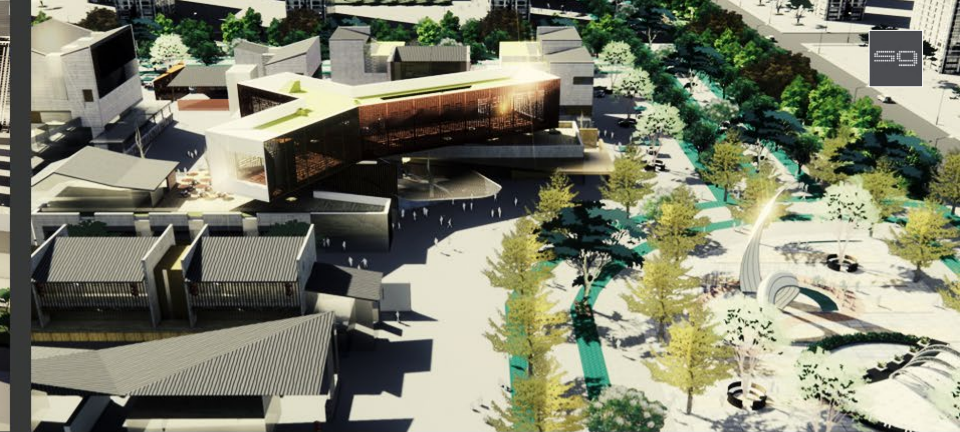














GuiPing Riverfront Park

2013

Urban Regeneration 6km Central Riverfront Park

> planning

GuiPing City is situated on the convergence of three major rivers to one side and the famous Buddhist West Mountain to the other. It has long been a religious haven and thus a traditional destination for pilgrims and modern day religious inspired travelers and has recently attracted a wider range of tourists due to its lush natural surroundings. In recent years, the city has expended and seen new development (commercial as well as residential) within its central areas.

This project is at the forefront of developing a sound, contemporary identity of GuiPing. In order to do so, the Riverfront has been identified as the main existing potential and the design looked at adding destinations as well as developing the 6km shoreline into a park itself with various segments connecting to the local adjacent neighborhoods. A series of canopies highlight the new River Front Park, provide shelter, shade and light adding a unique look and feel to this recreational area with boating piers, islands, lotus ponds, river swimming pools, culture stage, floating market - which have all been developed from historic predecessors and at traditional sites - while meandering along the river or when overlooking the city from West Mountain.

While the River Front Park circumscribes the core area of GuiPing, the suggested preservation areas bisect the Old Town, linking with the river at strategic locations: Harbor / Floating Market, Riverside Pool and Peninsula Park. Mostly, they are simple street side shop-houses sheltered from corporate investors and stimulating local culture, family-run cafes, shops, restaurants and guest houses following a simple Buddhist color scheme, sustained by a pedestrian-priority street scape blending animate, vivid down-to-earth Old Town atmosphere with contemporary sustainable tourism.

Project Location:
GuiPing, CN

Project Function:
City Park

Project Size:
1,000,000m²

Project Type:
New City District Urban / Landscape Design







Nama New City

2014

Ecological Community Focusing on Natural Resources

> planning



At the heart of the project is the target to sustainably use local, natural resources to develop an eco-themed community attracting new residents and tourists alike.

Combining the natural farming pastures, the central river and cultural tradition, a new culture district, with a distinct Culture Villager at its center is the new place to meet for community, workers and visitors. A healthy environment providing F&B and warehouse wholesale of local produce combined with other public facilities such as commercial, retail and the administrative and office gateway hubs creates the new identity of the entire district.

A tree-lined ring road acts as a natural link between all residential areas and public zones. Residential areas - high-end low-rise, medium-rise and high-rise - are all situated to engage as much as possible with the natural surroundings and river panoramas.

Project Location:
Nanning, CN

Project Function:
City planning

Project Size:
13, 500, 000m²

Project Type:
A new ecological seaside community integrating ecological farm, business, residence, office and industry.



Yangshuo Regional Tourism Plan

2011

Natural Conservation and Ecological Resorts

> planning

In a valley, roughly 20km long and about 2km wide, Yangshuo seeks to develop a new high-end tourism area situated right in the middle of the famous world-heritage landscape of the Yangshuo caster mountains.

The Regional Development Plan focused on strategic placement and confinement of new tourism facilities (Hotel Resorts) which offer a variety of different encounters with the surrounding landscape, act as modern icons while being developed from traditional materials, typologies and motives.

Binding together the entire development is the 45km² Landscape and Agriculture Park integrating existing farmland, local production and villages with new activities, destinations and landmarks to become a continuous carpet of changing vegetation, topography and spatial character.

While protecting the entire surrounding caster mountain area, the design suggested to use two former quarries as a basis for iconic resorts built into isolated road-side mountains to act as an iconic Yangshuo gateway along the new national road.

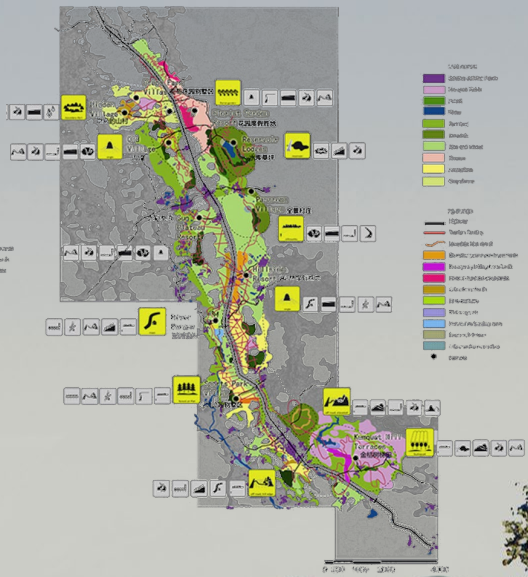
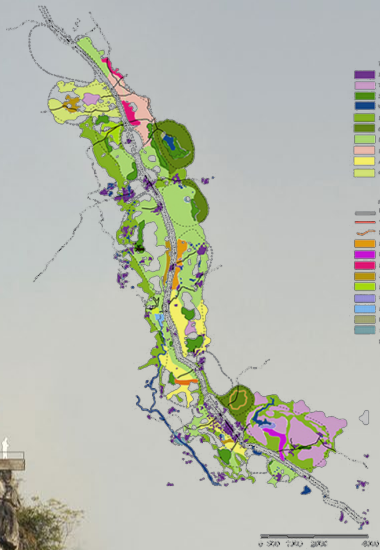
The national road itself has been developed as an extended system built around the existing boulevard trees.

Project Location:
Yangshuo, CN

Project Function:
Tourism

Project Size:
45,000,000m²

Project Type:
Sustainable Regional Development Master Plan, Urban Design and Architectural Typologies





Stone Road Culture District

2013

New Civic Destination on retraced historic “Stone Road”

> planning

This newly visible “Stone Road” provides the blueprint for building lines and roadside geometry following the ancient layout as a new pedestrian spine. Adjacent zones are programmed with various urban functions:

- The Culture Center features an entire pedestrian-only network of commercial and F&B expanding from the historic stone Road and including some of the preserved traditional buildings
- The Hospitality Area features boutique hotels, homestays and F&B mixed with some preserved traditional buildings
- The Urban Park including an existing temple
- The Creative Business District featuring courtyard typology office and studio spaces

Architectural expressions along the stone road are modelled on the traditional materials in a contemporary application.

Project Location:
Quanzhou, CN

Project Function:
Culture, Tourism

Project Size:
250,000m²

Project Type:
Cultural Urban Design Master Plan



Residential
居住区

Service
Apartments
服务式公寓

Residential
居住区

Changchumatsu
Temple
长春妈祖庙广场

Boutique
Hotel
精品商店

Creative
Park
创意园区

Wenxing Palace
文兴宫广场

Temple
庙宇

Business
Villas
商业小酒店

Boutique
Hotel
精品商店

Museum
博物馆

Center Entrance
中心入口广场

Residential
居住区

Zhenwu Temple
真武庙广场

Village Plaza
小镇广场

Tang Plaza
唐代主题广场

Commercial Village
商业小镇



Village Retro-Fit

2017

Guesthouse in Sustainable Village Retro-Fit

> Planning

A series of smaller towns in the vicinity of Nanning are projected to see substantial retro-fitting improvements on an urban scale with the aim to make these communities more attractive for tourism development.

However, this project enlarges the idea of “urban retro-fitting” to a complex system of quality improvements in a holistic sense, including:

- Setting an attractive environment for tourists and guests
- Providing simple bottom-up business opportunities for existing residents
- Improving comfort living standards of existing community
- Optimizing energy efficiency with simple measures for the entire development
- Harmonizing traditional shop houses with a new sense of contemporary rural living

To showcase the development strategy and generated urban design, two sites were chosen representing the larger development plan: a river-side location and a town-center location. Both feature a mix of add-ons and retro-fit as well as a functional mix of residential, hospitality, retail and F&B (town-center location) and residential, hospitality, F&B (river-side location).

Project Location :
Nanning, CN

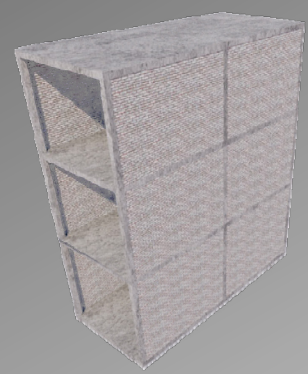
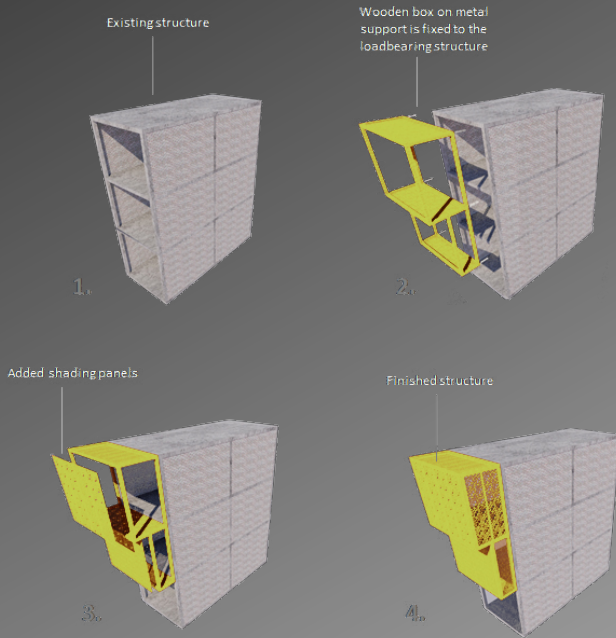
Project Function:
Mixed Use

Project Size:
Village Center


Project Type:
Sustainable Urban and Architectural Concept Design for Village Retro-Fit







Cooling Demand

79.6 kWh/(m²a)  66.6 kWh/(m²a)
- 30%

Cooling Load

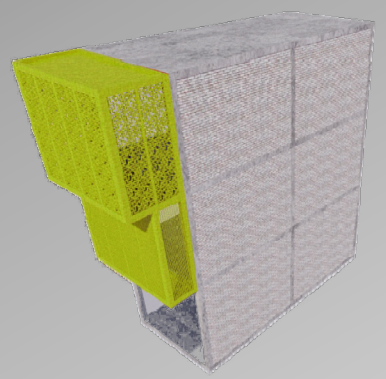
24.2 W/m²  17.5 W/m²
- 28%

Heating Demand

21.8 kWh/(m²a)  15.3 kWh/(m²a)
- 16%

Heating Load

21.8 W/m²  16.6 W/m²
- 24%







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Architecture | Urban Design | Sustainability

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