



Before ...

Arkadien Winnenden

Stuttgart, Germany

A Fresh Vision for Ecological City Design

Don't be put off by the cuteness! Arkadien Winnenden is a hardcore industrial regeneration project. A diversity of high performance components make this the world's most sustainable neighbourhood and provides a fresh new vision for people-friendly and resource productive cities.

Design: 2006–2008
Construction: 2007–2011
Area: 3.4 ha / 8.5 acres
GPS: 48°52'27" N / 9°35'35" E

Contact:
 Jessica Read
 Atelier Dreiseitl GmbH
 Nussdorferstr. 9
 88662 Ueberlingen, Germany
 +49.7551.928854
 jessica.read@dreiseitl.com

Atelier Dreiseitl is multi-cultural team of landscape architects, artists and engineers specialised in sustainable urban development.



A Smart Location: Winnenden is an economically depressed, non-descript town forever covering in Stuttgart's shadow. However, the Arkadien site is a convenient 10 minutes walk to both the local town center and to the train station, putting Stuttgart within less than 30 minutes door to door. There are nine schools within 10 minutes walk, and a new hospital is being built 1 km away. An innovative onsite recycling technology was developed to treat heavily contaminated soils on site, the rescued material then being used for construction of the sub-grade. The tight urban layout maximises site-occupancy while also forming the framework for the charming village-like streetscapes.

Holistic Planning Team

Developer:
Urban Planning:
Landscape & Water Sensitive Urban Design:
Architects:

Strenger Bauen und Wohnen GmbH
 Eble Architektur

Atelier Dreiseitl
 Eble Architektur, Dreibund-Architekten,
 Willwersch Architekten, Wolfgang Niche
 KMB, Hochbau, M2Büro

Road & Traffic Engineers:
Structural Engineers:
Soil Consultant:
Hydraulic River Engineers:
Land Use Planning Consultant:
Framework Plan:
Building Technology:

Willy Kraft Engineers
 CDM Consult GmbH
 Ingenieurbüro Winkler und Partner GmbH
 wbp Landschaftsarchitekten Ingenieure
 Dreibund-Architekten

Construction Technology:
Construction Detailing:
Lighting:
Construction Supervision:

EGS-plan Ingenieurgesellschaft für Energie-, Gebäude und Solartechnik GmbH
 Lietzke Bautechnologie
 bopp hermann architekten GmbH
 ART LICHT KEICHER GmbH, Utsch Huber Lichtsysteme
 Thomas Gut



Arkadien Winnenden

Stuttgart, Germany

Healthy Community



Mixed architectural typologies are held together as a cohesive and distinct neighbourhood thanks to the appealing Mediterranean colour concept and “garden city” quality of the streetscapes. The homes are part owner occupied and part rented. Home prices are competitively affordable, putting an ecological home in everyone’s budget.



A Healthy Community: The use of non-toxic, environmentally friendly materials stretches from the use of mineral stuccos, non-toxic paints within and with out, and the structural use of native timber. Outdoors, recycled German granite sets are tastefully mixed with less expensive permeable concrete pavers and asphalt; the planting concept focuses on locally native species which support birds and bees. n for putting sustainable urban development into wide-scale practice.



Arkadien Winnenden

Stuttgart, Germany

Social Regeneration



Social Regeneration: The creation of beautiful, people-friendly environment was considered by the design team as the best way to foster social stability. The warm and friendly environment encourages a relaxed, almost holiday-like community feeling and informal spaces to meet your neighbour while providing every individual home with privacy. The developer maintains the site, and offers a range of services for both homeowners to rental parties, from housekeeping and maintenance to rental administration and assisted-living for the physically-challenged or aged. A neighbourhood steering committee has been formed.

Winnenden is small piece of neighbourly paradise in a tough suburban city. The project has given new direction to an economically depressed local community touched by the tragedy of a school shooting in 2009. House prices are a competitive 2500 €/m² putting an ecological home in everyone's budget. Arkadien Winnenden is a financially feasible vision for putting sustainable urban development into wide-scale practice.

Street corners are mini-plazas and places to chat with your neighbour or for kids to kick a ball. Although the streetscapes are distinctively pedestrian, a shared circulation concept means that the site is fully accessible for vehicles, with parking options in an underground garage, carports, and parking spots neatly tucked away between gardens on the unique load-bearing planting substrate.



Holistic planning approach – the team composed of the developer, architects, landscape architects, traffic and structural engineers worked together from day one. This meant that the construction process was optimized with an aim to maintain highest design quality with cost efficiency and making the properties more affordable for low-budget incomes.



On foot:

- Kindergarten 3 mins.
- 2nd Kindergarten, ca. 8 mins.
- Lower school, ca.10 Mins., 5 high schools 8-10 mins.
- Metro (700 meters / 750 yards), ca. 10 mins.
- Town center, ca. 10 mins.
- New local hospital (1.5 km / 1 mile)



By Metro:

- Winnenden town center to Stuttgart town center (22 km / 14 miles) ca. 22 mins.



By Car:

- Stuttgart town center, ca. 20 mins.
- Mercedes, Porsche ... (18 km / 11 miles), ca. 16 mins.



Arkadien Winnenden

Stuttgart, Germany

Resource Productive City

Energy Efficiency: The variety of home types are kWh 85 with energy being provided by two local combined heat and power plants.

Thanks to the use of permeable pavers and the innovative use of structural bearing soil substrate for garden-like parking spaces, impermeable surfaces have been reduced from 95% to 30%. The central lake is a spacious natural oasis at the heart of the neighbourhood. It doubles as a rainwater detention basin, capturing and filtering rain water in a stepped system, before overflowing to a flood meadow and slow releasing to the adjacent ecologically restored stream.



Arkadien Winnenden

Stuttgart, Germany

Ecological Infrastructure

€ Affordable and Feasible
100% units have been sold and the site has 100% occupancy. Thanks to the holistic planning approach house prices are affordable at 2500€ per m², a very competitive rate for the area.

A Community Feeling
A beautiful and friendly environment fosters a great community spirit. An abundance of shared public space is balanced by private outdoor space in the form of gardens, terraces and roof gardens.

Pedestrian Streetscapes
Streets are shared space with a clear, pedestrian feeling. Kids can play safely while the forgivable convenience of driving up to your own front door is accommodated.

Social Regeneration
Winnenden's poor reputation has been rejuvenated thanks to this happy and attractive new neighbourhood.

Water Sensitive
An ecological infrastructure approach means that rainwater is harvested in a central lake and cleansed through natural plant processes before being released to the nearby ecologically restored creek.

85 kWh
All homes are highly energy efficient with a rating of kWh 85 according to the German EnEv 2009 and supplied by two local combined heat and power plants.

Healthy Materials = Healthy People
Despite the proximity of a new hospital, no risks were taken on the construction materials. Priority was given in every instance to non-toxic, and where possible native, locally-sourced materials.

Load-Bearing Plant Substrate
An innovative load-bearing plant soil substrate was used to plant up individual parking spaces so that they could be seamlessly tucked into gardens, giving a new twist to the term "park"ing.

Shared Circulation Concept
Despite the clear pedestrian atmosphere, the site is fully accessible for vehicles, with parking options in an underground garage, carports, and individual parking spots and limited street parking.

Holistic Planning Process
The team led by the developer, composed of architects, landscape architects, traffic and structural engineers, worked together from day one to develop the most efficient and beautiful project possible.

Flood Protection
The central retention lake and flood meadows as well as the reduction of impermeable surfaces from mean 95% to 30% means that the site is actively contributing to the reduction of flooding in the local urban catchment. Flooding is a major problem in the Stuttgart area.

Ecological Restoration
The use of native plants and the creation of new habitats means a new home for urban nature. Green roofs are a no-brainer.

Industrial Regeneration
The area was an abandoned factory which left severe soil contamination in places. An innovative technique was developed to remediate soil on site and recycle it as subgrade.

Recycled Materials
Existing concrete was chipped and re-used on site. Recycled granite pavers are used in combination with less expensive materials to create high quality streetscapes.