Report Of Regeneration Skills Collective Wales Study Tour To Freiburg

4TH – 7TH JUNE 2015

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RSCW’s STUDY TOUR TO FREIBURG 4TH – 7TH JUNE 2015.

The motivation for this Study Tour arose following an inspirational address by Professor Wulf Daseking, the former Chief Planning Officer for the City of Freiburg, at the RSAW’s Autumn Conference in Cardiff in November 2013. Taking up Professor Daseking’s offer host an RSCW study tour Richard Essex, RSCW Co-ordinator and Alan Brown, Charted Surveyor and CREW Board Member visited the city in June 2015.

The Study Tour comprised two days of site visits and a detailed discussion with Professor Daseking. In such a short time impressions gained can only be selective. However, key observations made about the ‘Freiburg experience’, which is widely regarded as one of Europe’s most sustainable cities is as follows:

1. Political and technical officer continuity, with strong leadership, has been vital to both policy and delivery. In Freiburg, the City authority had a Chief Planning Officer for nearly 30 years, with only two Mayors over that timescale.

2. A clear and good working relationship has been essential between national, regional (Baden-Württemberg) and local (Freiburg City) levels to enable local policies to work effectively.

3. A strong emphasis on managing the delivery of policies and integrated plans, with:
   - Inbuilt flexibility to take account of changing circumstances including;
   - A continuing commitment to real citizen involvement and community engagement / responsibility in delivery;
   - Ensuring short term wins that everyone agrees with, whilst still pursuing the long term vision; and
   - The provision of incentives and disincentives to deliver policy objectives.

4. The approach taken by the Freiburg City Council has been critical to achieving both short and long term success. In this context, team building is a necessity, drawing together from all sectors and building collaborative capacity; with subtle and flexible methods of working with a variety of investors and communities. Underlying this whole process has been taking actions that are viable; using all planning, financial and legal powers that are available; and working to business planning principles.

5. The new communities of Vauban and Rieselfeld are well established and built to very high standards of sustainable development (environmental, economic and social). These two communities, and additional recently developed smaller housing areas, have a combined population of 20,000 out of a city wide population of 230,000.

6. The existing, more conventional housing is clearly well served by a sustainable transport and public service infrastructure, but it wasn’t clear as to how this older housing had benefited from renewable energy provision.

7. The restoration of the City Centre after almost total destruction during World War II has been to a remarkable high standard. It is clearly a thriving, prosperous and attractive city centre well served by a fully integrated transport system. The integration of all modes of transport throughout the city is to a very high standard and can only remain an aspiration to cities and towns of similar size in the U.K.

8. Public sector powers in relation to land ownership, planning control and building regulations appear to have been critical in terms of delivering a transformational policy agenda built upon the highest principles of sustainable development.

9. In delivering the levels of sustainable development achieved within Freiburg, there appears to be a very strong link to local deliverers of services and local supply chains. It was not clear as to how the public procurement process in Germany operates in this context. But most certainly the local economy has benefitted enormously. There also appears to be a very strong relationship between Higher Education / Research / “Technical” institutions and the business sector in Freiburg that has assisted the local economy.

10. There was a total lack of litter and on street rubbish throughout the areas of Freiburg visited

11. It is possible that the Freiburg ‘experience’ could be adopted to Welsh circumstances, however, there are clear differences in culture and regulation particularly in relation to issues such as home ownership, public transportation, car parking and energy generation that would need to be addressed before any serious attempt at replication takes place

We are greatly indebted to the generosity and support of Professor Daseking in assisting us with our visit to Freiburg. Unfortunately on the day we travelled to Germany Professor Daseking suffered a serious illness. Despite this setback Professor Daseking continued to encourage and support us during our stay in his city, even to the extent of giving us both a “master class” in sustainable city planning from his hospital bed!

A more detailed report of the Study Tour follows below and includes:

i. An introduction to Freiburg
ii. Sites visited
iii. A Summary of some of the key features / drivers that has made Freiburg one of the most sustainable cities in Europe
AN INTRODUCTION TO FREIBURG

Freiburg is at the hub of the Breisgau region, within the Lande of Baden Wurttemburg, on the western edge of the Black Forest and in the upper Rhine Valley. The city experiences the sunniest and warmest climate in Germany, and as such, has a very successful tourism sector.

The city has a population of approximately 230,000, of which around 21,000 are University students and staff.

The basis of Freiburg’s reputation for sustainability and regeneration are numerous. It has been a centre for the environmental movement since the 1960’s. In the early 1970’s, a proposal to locate a nuclear power station close to the city at Wyhl, provoked major public opposition, which resulted in the proposal being dropped in favour of renewable energy being seen as the alternative solution. The Chernobyl disaster of 1986 and concern over acid rain damaging the nearby Black Forest, and more recently concern regarding climate change, has further strengthened the determination to find alternatives to nuclear and fossil fuel energy.

Since then, there has been a continuous and consistent political commitment to the principles of sustainable development that extends beyond ‘election cycles’. The Green Party made progress in representation at the federal and local levels in Germany during the 1980’s and 1990’s and eventually became the main political group on City Council, although without overall majority. Since 1982, Freiburg has only had two mayors. Dr. Rolf Böhme, a Social Democrat who served the city between 1982 and 2002; and the current mayor Dieter Salomon a Green who was elected in 2002. This political continuity has assisted in the development of long term strategic policies and was complemented by Professor Daseking serving as Chief Planning Officer, from 1984 – 2012. Professor Daseking established a vision of creating and maintaining a compact city (a ‘city of short distances’), with a focus on integrated planning, embracing innovative energy, building and waste management policies. The Freiburg Charter, published in 2010, outlines the principles adopted in achieving ‘sustainable city’ status.

Study Tour Objectives

Before the Study Tour some detailed desk top research was carried out on the history and growth of the City and this along with some initial briefing material sent by Professor Daseking enabled a broad itinerary to be agreed to help shape the visit.

In particular we were keen to gain a better understanding of how the City had addressed the following key issues:

- Integrated Transport
- Sustainable Economic Growth
- Housing / Mixed Use Development
- Green Energy
- The Role of the City Council in pump priming growth and development
- Environmental Matters

Sites Visited

The very first impression on travelling into Freiburg by bus was the sudden transformation from a very green rural landscape into a built up urban area. There did not appear to be any significant “urban sprawl” or ribbon development, which can be a feature of many cities and towns in the U.K. This impression was repeated on subsequent site visits to the Vauban and Rieselfeld districts of the city, where relatively high density development were juxtapositioned against very open and rural landscapes.

Vauban District

This district partly occupies the site of a former military base. It has an area of 38 hectares and a population of 5,500.

After the cold war ended in 1989 the French military base at Vauban was abandoned. Given the shortage of housing in Freiburg, the City Council bought the land to develop. It offered many advantages for development, such as being adjacent to existing city services and many offices; with many job locations being easily accessible by foot or cycle. The pressure for the development of Vauban was originally led by environmental activists, who occupied the site following its abandonment. The “Fundis” still occupy a small separate part of the site.

“Green hotel” at the entrance to Vauban
As with Rieselfeld, the City borrowed to pay for the planning and installation of infrastructure (e.g. bus service connection before first homes built; this then replaced by extension of tram line services after 3 or 4 years).

Both in Vauban and Rieselfeld, strict private car parking management schemes exist. Any resident who owns a car can purchase a space in an underground car park or a multi-storey car park on the edge of the development for Euro 18,000 (€13,000).

Those who wish to live car free pay a one off fee of Euro 3,700 (£2,700) to preserve open space on the edge of the development in lieu of parking space.

Within the overall Masterplan, the concept was established for the design and development of relatively small plots, consisting of a block of buildings around a semi-public open space, being undertaken by a local Building Group (Baugruppe), working together with their own architect. Future residents were totally involved in the design process. This led to the extensive use of ‘co-operatives’, which not only commissioned blocks of homes, but also designed and managed the communal spaces.

Vauban is served by a CHP plant, which uses 80% wood chips and 20% natural gas to provide the district with electricity and heat.

**Vauban Site Visit - Impressions Gained**

The area was easily accessible from the city centre by tram. We were very impressed by the ‘greening’ of the tram track areas; this seemed to reduce noise as well as give a better visual appearance. The green corridor occupied by the tram tracks within Vauban was also utilised as part of the sustainable urban drainage system for the district.

The residential district was extremely quiet, owing to the lack of car traffic, although we later learned that our visit was on a public holiday. A good provision of neighbourhood services, including a flourishing shop, a very comprehensive community centre with restaurant and a very modern local school. There seemed to be a flexible attitude to mixed use, with local office space being made available on the ground floor of some housing blocks, mainly providing local services (including health and dentistry).

We were very impressed at the innovative way in which space and low speed access roads between the residential blocks were used. There was a focus on the provision for children’s play and communal ‘sitting out’ areas with generous landscaping and again links to local sustainable urban drainage systems, incorporating small water features. A high standard of maintenance, which might relate to local people determining collectively the use of open space, and having responsibilities for maintenance.

A large low cost store (Lidl or Aldi) was located close to Vauban on the main road from the city centre. It is certainly not an “out of town’ store site, as it was contained within the built up area, very accessible by public transport.

Adjoining the Vauban District is a very innovative area of recent development, the Solarsiedlung (Solar Settlement) and the neighbouring Solarschiff (Sun Ship) business building.

These relatively high density development areas immediately adjoin the Vauban District. The Solar Settlement is an group of multi-storey town houses and a commercial building, the Sun Ship. There are 59 homes, 9 of which are penthouses on the Sun Ship roof. All of the homes are classified “Plus Energy”, which produce more energy than they consume and whose supplementary income heavily outweighs the low additional costs.

The Sun Ship is the service centre for the Solar Settlement in Freiburg – and the first commercial Plus Energy building. It extends itself over 125 metres along a main road and functions as a sound barrier for the housing community on its opposite side. The Sun Ship is three stories, with a northern front section that is five stories. Embedded in roof garden landscaping, nine exclusive three level penthouses were constructed. In two underground floors there are storage rooms and a parking garage with 138 parking spaces.
This new district partly occupies the site of a former sewage treatment works. It is an area of 72 hectares and has a population of approximately 12,000.

Rieselfeld is located adjacent to the poorest housing area in the city, Weingarten, which is a predominantly social housing district of high-rise apartment blocks. Priority was given to ensuring that these planning mistakes were not repeated; and that the social problems present in this area with large-scale housing development were avoided.

The City Council owned the former STW land, and borrowed to pay for the planning and installation of infrastructure (e.g. tram system connection before first homes built); and then recovered investment on the sale of the plots.

A competition for a conceptual Masterplan was held in 1992. There was a focus on the creation of high quality neighbourhoods for families. Originally a level of 50% social housing was proposed, but this was reduced to 25% because of government cutbacks. Developers not prepared to invest because of low values; a reduction in housing subsidies; and the site being close to the ‘deprived’ Weingarten area.

The City Council decided to sell off relatively small serviced sites and groups were invited to bid on a collective basis with preliminary designs. The process could provide homes at 25% below the usual price. There was a use of local architects and local (smaller) building firms. This led to each housing block being customised with common facades. Development was mostly of 3 to 5 storeys, 20% of which was undertaken by co-operatives.

Site development commenced in 1996, but major house building was not undertaken until the necessary infrastructure was in place, such as the tramway and schools. Developers were required to use energy saving measures and were encouraged to use passive solar design features. Development was built in sections and finally completed in July 2010.

Rainwater management and sustainable urban drainage features appeared throughout. Green spaces were integrated as much as possible and the multi use of green spaces between the blocks of housing were developed with local residents who have the responsibility of maintenance. A 200 hectares Nature Reserve adjoins Rieselfeld, which acts as a greenbelt and urban drainage space.

Rieselfeld Site Visit - Impressions Gained

Rieselfeld is almost double the size of Vauban, both in area and population. In some respects, it appears to be more “conventional” than Vauban, in terms of its character and atmosphere.

There was no particular evidence during the visit that the older adjoining residential district of Weingarten, had a directly detrimental affect on Rieselfeld, and efforts seem to have been made to upgrade the environment of this adjoining area.

Because of its greater size and its relatively longer distance from the city centre compared with Vauban, the range of retail, commercial, local employment and community facilities are much greater in Rieselfeld. The nature of local open space provision is also somewhat different from that in Vauban, being contained to the rear of properties within the grid layout, without any conflict with traffic.

After the site visit we learned that to meet the anticipated demand for new housing in Freiburg, there are proposals to extend the Rieselfeld eastwards onto greenfield land, incorporating the same principles of design, with an even higher provision of open space.

Alter Messplatz and Wiehre Bahnof

Before we left Freiburg, Professor Daseking encouraged us to visit two other smaller sites in Freiburg, which exhibited the standards and quality of new development that had been promoted in Freiburg for the past three decades. Both developments sought to achieve an efficient use of land; an effective resourcing of water; innovative surface drainage solutions; reduction of energy through low energy building design; a minimization of the need for personal means of transport; and good access to public transport facilities.

Alter Messplatz Site Visit - Impressions Gained

This is a mixed-use redevelopment of a former fairground site. It comprises three to four storey housing blocks occupying half of the site; the remainder of the site comprises a single building occupied by a range of retail and commercial services. It adjoins an existing educational, library and health centre development.

The prior engineering works to serve the overall site development included a connection to the city tram and bus service route; provision for limited underground car parking; the design of measures to reduce storm water flows through the provision of green roofs and open sustainable urban drainage systems.


**Wiehre Bahnhof Site Visit - Impressions Gained**

During the second half of the 1990s, an urban concept was developed for this 2 hectare site, which was discussed with citizens. It is owned by Deutsche Bahn AG and the City of Freiburg.

The aim was to construct a model group of individual, multi-storey residential buildings. In total, 185 residential units were constructed as complexes in thirteen building blocks by nine architectural firms. Architectural diversity and individuality were the defining topics of this project; and elements of the Baugruppen concept, associated with design, build and ownership / management, were adopted within this scheme. Small 'building exhibits' were created that paid heed to ecological factors.

**City Centre**

The rebuilt city centre, with pedestrian priority and tram services

The overwhelming majority of the medieval centre of Freiburg was destroyed by bombing during World War II. When rebuilding this area the appropriate architecture style was retained, with the most significant historic buildings, such as the City Hall (Rathaus) and grain storehouse, being rebuilt as they had been before. All others were built on the original building lines and within the original building envelope. In the 1960's, city regulations were able to prevent high-rise buildings and in the 1970's design guidelines were drawn up.

Much of the post war housing was four storey 'walk ups'. At the end of the 1960's a major programme to maintain and increase the residential population in the inner city was put into place in Konvikstrasse. In this area the streets have been largely rebuilt; however the scale and character of a medieval street still remains. Car parking became one of the major issues. A three-storey car park with six hundred spaces and twenty-two apartments above was constructed in the area behind Konvikstrasse.

The main focus to maintaining a vibrant city centre was the pedestrian zone. It was designed to support and keep businesses in the centre as well as improve the quality of life and encourage greater public use. With the expansion of the pedestrian zone in the old town, public spaces utilised local natural stone creating a 'cities carpet' with a variety of geometric designs and historic and business symbols.

Other policies to strengthen the city centre were the provision of easy access public transport, including the extension of the tramways; and a strong restriction large scale 'out of town' retail development.

The Medieval Centre also saw the restoration of the 'Bächle' (little creeks), a water channel system delivered by the Dreisam River, which is liked by everyone, especially children.

**City Centre Site Visit - Impressions Gained**

Given the severe damage caused to the city centre during World War II, the restoration of the old city centre in its original style, appearance and plot structure is really impressive. The pedestrianisation of the majority of the city centre streets (some are retained mainly for tram and service access) from the 1970's onwards has created a strong sense of place, with a high standard of design and use of space between buildings. The reintroduction of the medieval 'balche' is a key feature in this respect.

However in the 1990's it was realised that the city centre could not be constrained to its mainly historic core. The area to the west of the existing centre was released for development, which has led to the rebuilding of the regional railway station with a new bus station as a very effective transport interchange; this also includes additional capacity for the city tram system and greater provision for cyclists, with an investment in secure cycle parking facilities.

Opposite the rail station, there is a new Konzerthaus Conference Centre and a Chamber of Commerce building, with the adjoining theatre being renovated and extended. All of these developments are being pursued with a sense of proportion and great sensitivity to the surroundings.

Other sites within and adjoining the city centre are currently under consideration, including one adjoining the existing University, which has been retained within the city, rather than being relegated to a 'city edge' location. The same design principles are being pursued, with a high level of public consultation.

The quality of renovation and new development within the city centre is clearly of great importance to Freiburg's tourist industry.

**Summary Of Key Features That Has Made Freiburg One Of The Most Sustainable Cities In Europe**

**Integrated Transport:**

Freiburg was one of the few German cities to retain a tram system after World War II (1939 – 1945). The city devised its first integrated traffic management plan and cycle path network in 1969. This has been updated every 10 years and has increasingly given preference to environment friendly modes of transport such as walking, cycling, and public transit. The public transit network has been steadily expanded and modernized since 1972. Today the tramway network comprises 30 km and is connected to the 168 km of city bus routes as well as to the regional railway system. It now has a fully integrated public transport system, linking rail, tram and bus service provision, with 70% of the population living within 500 metres of a tram stop. Besides working to make public transport convenient, fast, reliable and comfortable, the city administration has also made it cheap.
Freiburg now generates almost as much solar energy as the whole of the U.K. Freiburg also possesses over 400 km of cycle paths. This includes bike-friendly streets, street side bike paths, and separate bike paths. About 9,000 bicycle parking spaces were also developed, including “bike and ride” lots at transit stations, particularly at the main regional rail station.

In 1973, the entire city centre was converted to a pedestrian zone. Freiburg also possesses over 400 km of cycle paths. This includes bike-friendly streets, street side bike paths, and separate bike paths. About 9,000 bicycle parking spaces were also developed, including “bike and ride” lots at transit stations, particularly at the main regional rail station.

In terms of energy saving policy, in 1992, Freiburg’s building design standards were amended to require that all new houses built on city land (or land sold by the city) to use no more than 65 kilowatt hours of heating energy per square metre per year. This adds about 3% to the cost of the house, but the energy savings make it worthwhile in a short time.

To improve energy efficiency in existing buildings, Freiburg instituted a support programme for home insulation and energy retrofits. About 1.2 million Euros in subsidies were provided between 2002 and 2008, complementing about 14 million Euros of investments. Reduction of energy consumption averaged 38% per building. Most municipal buildings (e.g., schools, offices) were also retrofitted.

In 2008, Freiburg revised its standard downward to ensure that the city stayed at the forefront of low-energy development. A two-step revision was to be implemented in 2009 and 2011 to move new housing even closer to the “passiv house” standard of just 15 kWh/m2/yr. These cost 10% more to build, but can achieve an 80-90% reduction in energy consumption.

Combined Heat and Power (CHP) facilities have also been developed in Freiburg, producing both electricity and heat by capturing the waste heat from electricity production to generate more electricity and useful heat, e.g., for district heating systems. About 50% of Freiburg’s electricity is now produced with CHP (compared to just 3% in 1993). There are 14 large-scale CHP plants and about 90 small-scale CHP plants (e.g., at the city theatre and indoor swimming pools). The two large-scale plants located near landfills use landfill gas as fuel. The others use natural gas, biogas, geothermal, wood chips, and/or heating oil.

**Economic Growth:** Linked to its commitment to sustainable development, Freiburg has achieved a high standard of economic growth. In 2011 was 14th in the economic ranking of German cities, with a strong labour supply and good employment structure. It has a lead in new environmentally sustainable industries, with Freiburg’s “Green City” industrial cluster having 12,000 jobs, with an added value of 650 million Euro to the regional economy. Within the sector, there is a strong link between higher and technical education with business, both at research & development and practical implementation levels. In this context, there are six University research institutes, with an office of the Steinbeis Foundation for Innovation Transfer; and the Fraunhofer Institute for Solar Energy. Freiburg now generates almost as much solar energy as the whole of the U.K.

**Energy:** Freiburg’s progressive energy policy has its roots in the early 1970s, described previously.

**Housing:** The population of the city is expanding at 1% p.a. requiring 850 – 1,200 homes to be built p.a. There is a low rate of house price inflation as there is a predominance in rented homes / apartments (80% homes rented from public or private institutions).

There is a widespread use of cooperative building groups / self build (Baugruppen)

Major recent development of key brownfield sites in public ownership has been undertaken for the new districts of Rieselfeld and Vauban. Each district provides different kinds of housing to meet a variety of needs. Within these areas a vision was established of low energy development; no major high rise (limit of 4 to 5 storeys); focus on providing for families with children; and high standards of urban design linked to the preparation of overall Masterplans, which are grid based / ‘fishbone’ layout, linked to main public transport spines. There is a strong presumption of low car ownership (high cost parking on peripheral sites or limited basement facilities); and the provision of smaller, local (independent) shops and integrated community facilities (community centres, schools etc.).

Freiburg Central Station, at the heart of the city’s integrated transport system.

Bike storage facility adjoining Freiburg Central Rail Station, main bus station and key tram stops.

Another notable aspect of Freiburg’s transport policy is traffic calming. For most streets, other than main streets, the speed limit is 20 m.p.h. On some, mainly residential area streets, cars can travel no faster than walking speed, which allows for children’s play.

Parking space management also contributes to the reduction of motor vehicle traffic. Multi-storey garages are located at the edge of residential districts and at major mass transit stations.

High spending on research plus government funding has enabled companies to gain a competitive advantage in new markets. Investment linking the development of University and other research facilities; high levels of technical education / training; and the creation of attractive, modern living surroundings, has attracted graduates to stay in Freiburg.

**Economic Growth:** Linked to its commitment to sustainable development, Freiburg has achieved a high standard of economic growth. In 2011 was 14th in the economic ranking of German cities, with a strong labour supply and good employment structure. It has a lead in new environmentally sustainable industries, with Freiburg’s “Green City” industrial cluster having 12,000 jobs, with an added value of 650 million Euro to the regional economy. Within the sector, there is a strong link between higher and technical education with business, both at research & development and practical implementation levels. In this context, there are six University research institutes, with an office of the Steinbeis Foundation for Innovation Transfer; and the Fraunhofer Institute for Solar Energy. Freiburg now generates almost as much solar energy as the whole of the U.K.
Solar energy is by far the most visible renewable resource used in Freiburg. The city is home to approximately 400 photovoltaic installations on both public and private buildings, including the 19-story façade of the main train station; the roofs of the convention centre the soccer stadium; and the Solarsiedlung (Solar Settlement) and its neighbouring Solarschiff (Solar Ship) business park. Currently Freiburg’s 150,000 m² of photovoltaic cells produce over 10 million kWh/year. The 60 “plus-energy” homes of the Solar Settlement create more energy than they consume, and earn 6,000 Euros per year for their residents.

With 16.6 million kWh/year, biomass has the largest share of Freiburg’s renewable electricity generation. The Black Forest provides an ample supply of wood chips and wood pellets (much of it waste from woodworking industries). The Solar Factory burns rape seed oil in its CHP plant.

Energy consumption is one third less than as required by German law. However, although Freiburg accounts for over half the solar installations in Germany, renewables only accounted for 10% of electricity consumed in 2012. Far more important is energy saving through high levels of insulation, careful siting of homes and efficient technologies. Thus half the energy consumed by buildings is produced locally, which doubles the overall efficiency from 40% to 80%; and enables waste heat to be used for CHP or co-generation. A thermal waste treatment plant supplies electricity to 25,000 households.

The Climate & Energy Strategy in 2007 reinforced the commitment to avoiding nuclear power, first by saving energy, then securing energy efficiency in generation and finally developing renewable sources of energy. This strong environmental policy is attributed to:

- Clusters of environmental practitioners (>700 employed in solar related activities)
- An Environmental Protection Authority within the municipality (60 staff) bringing together nature, water, waste management and energy in an integrated manner.
- Participation in international initiatives, leading to the promotion of the city as a Solar Region
- Comprehensive involvement of all stakeholders from the regional energy company to social organisations & schools
- Key to progress has been the close relationship between research/development and implementation / delivery. This commenced with the Fraunhofer Institute for Solar Energy Systems being originally established in 1981. As a result, in 1992, the city council decided that on land that it owned it would only permit construction of low energy buildings to specific ‘low energy’ specifications.

The City Council’s involvement in the development process appears to be as follows:

- It owns or acquires land / sites.
- It builds the necessary infrastructure, generally before development takes place or is occupied.
- It uses investment funds through a Trust structure.
- Investment is raised through local (Freiburg Bank), regional banks (there are 2,000 others in Germany) and there is also a State Reconstruction Bank (KfW), which specialises in funding sustainable forms of building.
- The council’s investment is then recovered by selling off sites to builders, individuals or groups of individuals (e.g. co-operatives).

- There appears to be a specific policy of disposing of land in relatively small plots, which (a) encourages more locally based smaller building firms / contractors; (b) gives more positive control to the City Council; and (c) encourages the closer involvement of residents in the creation of sustainable communities.
- The development process associated with the land disposal policy above, is based on the City Council laying down requirements in the form of Master Plans and Development Briefs, which specify what has to be paid and what can be built & when.
- This process has been successful because good location, a high standard of design and a positive approach to energy conservation have generated huge demand, thereby allowing the process to self-fund.

The City Council has adopted a hard-headed commercial approach, drawing on private investment advice, which is incorporated in to the staff structure. This is allied with an open approach to collaboration with the residents through real participation / consultation processes. This generates a strong built-in neighbourliness and accumulated social capital at an early stage.

There is a strong emphasis on securing infrastructure investment returns from the development process. This appears to be based on the strong position that the Council has in relation to overall planning control, which includes strong design powers, a high level of public land ownership and good financial management. Even with development of land in private ownership, these controls are maintained, with German law enabling the owner to retain two thirds of uplift in land value; but the public sector receiving one third of uplift in kind.

There are approximately 150 Baugruppen projects in Freiburg providing some 2,000 dwellings, with the majority satisfying building Code 6. The co-ops save approx. one third of uplift in land value, mainly because of there being no developer’s profit. This model of development is increasingly being seen as a solution to the problem of providing affordable high quality housing. (Note: By 2013, Stroud, Lancaster & Cambridge in the U.K. have attempted to follow this example).
**Public Transport** (based on co-ordinated land use / transportation principles) Over the past 30 years, trips by cycle x 3; by public transit x 2. Reduction in car journeys from 38% to 32% (public transport / cycling / walking 68% of total journeys made). Motor vehicle ownership did not increase at all between 1990 & 2006.

Freiburg’s highly competitive public transport system – a 3,000 Km (1,864 miles!) network of light rail, buses & urban railways operated by the Regional Transport Association. It requires little subsidy because it is so well used. Integrated transport hub at main rail station linked to tram / bus services & 1,000 space cycle parking facility.

The City Council has strong policies in respect of car parking. In the new housing districts. Any resident who owns a car can purchase a space in an underground car park or a multi storey car park, generally on the edge of the development, for Euro 18,000 (£13,000). Those who wish to live car free pay a one off fee of Euro 3,700 (£2,700) to preserve open space on the edge of the development in lieu of parking space.

**Environment & Natural Resources.** The international reputation of being a “green city” has led to builders & investors learning from demonstration projects that environmental initiatives can pay off faster in occupancy and building rates. This includes using solar power as a cooling agent in buildings. Neighbourhood resilience established through the provision of local facilities and services.

There is also a strong emphasis on **water management**, based on avoidance of excess surface drainage by integrating water permeable surfaces and green roofs into construction plans for new development. Sustainable Urban Drainage Systems used in all new development areas (includes streams and ponds, which adds to biodiversity and to options for environmental improvements).

The principle of endeavouring to contain the overwhelming majority of new development within the built up area of the city has resulted in very strong protection measures for the adjoining **open countryside**. There appears to be a strong emphasis on encouraging the active and passive use of these open areas.

**Waste minimisation** also assists with energy saving. These measures include waste avoidance; waste recycling; and a single incineration plant for any residual waste, which serves a wide area, providing energy for 25,000 homes.

Some detailed research was undertaken before we departed which together with briefing material kindly provided by Professor Daseking helped us plan the itinerary for our visit.

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**Bibliography / references:**

1. The Freiburg Charter and further background material at [http://www.wulf-daseking.de/en](http://www.wulf-daseking.de/en)
2. Freiburg: Green City by Regina Gregory 2011

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**Green Vauban:** quiet tram tracks; generous green spaces in a multitude of uses; and wide use of sustainable urban drainage.