4. The Masterplan and Infrastructure: How will eco standards be met?

4.1 Transport strategy (parking and movement)

This section sets out how the urban village can meet the stated objective of less than 50% of trips being undertaken by car. It considers the challenge of changing transport behaviour, drawing on both Addison & Associates' report for the masterplan *Delivering 21st Century Sustainable Transport in Yeovil,* and also the report from the University of the West of England for the LSP *Active and Low Carbon Travel*. Resolving the current use of the site as a number of short and long term car parks, however, is a precursor to any of actions identified below. From the research undertaken by Addison & Associates, better use and management of the non-site located short term car parks is important if Yeovil as a whole is going to deal with the growth in demand forecast in the County's Parking Study.[21] It is accepted that there will be a continuing demand and need for long term car parking to serve the needs of those working and operating businesses in the town centre. The existing provision on the site will therefore need to be replaced at least in part. However, there would be benefits in achieving this through the identification of a site (or sites) further from the town centre as this would support the objective of promoting sustainable travel. The whole of the parking stock both on and off site will need to be positively managed as part of an agreed strategy.

4.1.1 Reducing the need to travel

To achieve the objective will require a series of inter-connected actions to provide residents on the site and elsewhere in the town as a whole with the ability and desire to travel less and particularly by car. Given the location of the site, adjacent to the town centre, there is real potential to achieve this aim at the site, particularly through the promotion of walking and cycling. Yeovil as a whole also demonstrates many of the basic characteristics that provide effective building blocks for achieving the target of 50% of trips by modes other than the car. Almost 25,000 work in Yeovil of whom half live in the town, mainly in suburban estates on the edge. Significantly 2/3rds of the residents of the five urban wards in Yeovil travel less than 5km to work and 40% of peak journeys in the morning in the town centre are less than 3km according to the Local Development Framework. The proposed village is close to the main bus station, and hence getting to Yeovil Junction station or major local employers should be relatively easy, particularly if bus services were improved.

These figures demonstrate the potential for increasing walking, cycling as well as public transport use not only on the site but also within Yeovil as a whole. The site location means that all access to shops,

[21] *Yeovil Car Parking Analysis,* DRAFT v1.13 Somerset County Council for South Somerset District Council, May 2011

schools, community and health facilitates could be by foot or cycle. Car travel to work in Yeovil Central, the wards in the heart of the town, is only 57% reflecting the fact that a high proportion of trips are already on foot. Journeys to work, if work is not located in the town centre could be by cycle or bus. Yeovil as a country town with the surrounding villages is currently heavily dependent on the car with bus journeys in Somerset being currently the lowest in the UK. Somerset also has the fewest railway stations of any county. Only 4% of trips in Yeovil are by bus but these figures reflect the poor services in areas such as Yeovil South. Bus accessibility is particularly poor to the hospital and Agusta Westland, two of the largest employers.

Hence the main challenge is to ensure that for short trips people leave their car behind. This means making the alternatives attractive and easy to use, and this is the basis of the masterplan for Summerhouse Village. While 2/3rds of journeys to school are currently on foot, very few cycle, with many of the primary schools being near main roads. For the 50% target to be achieved virtually all primary school journeys should be by foot or cycle and the majority of secondary school journeys also. All schools need to have a school travel plan to help support a change of behaviour.

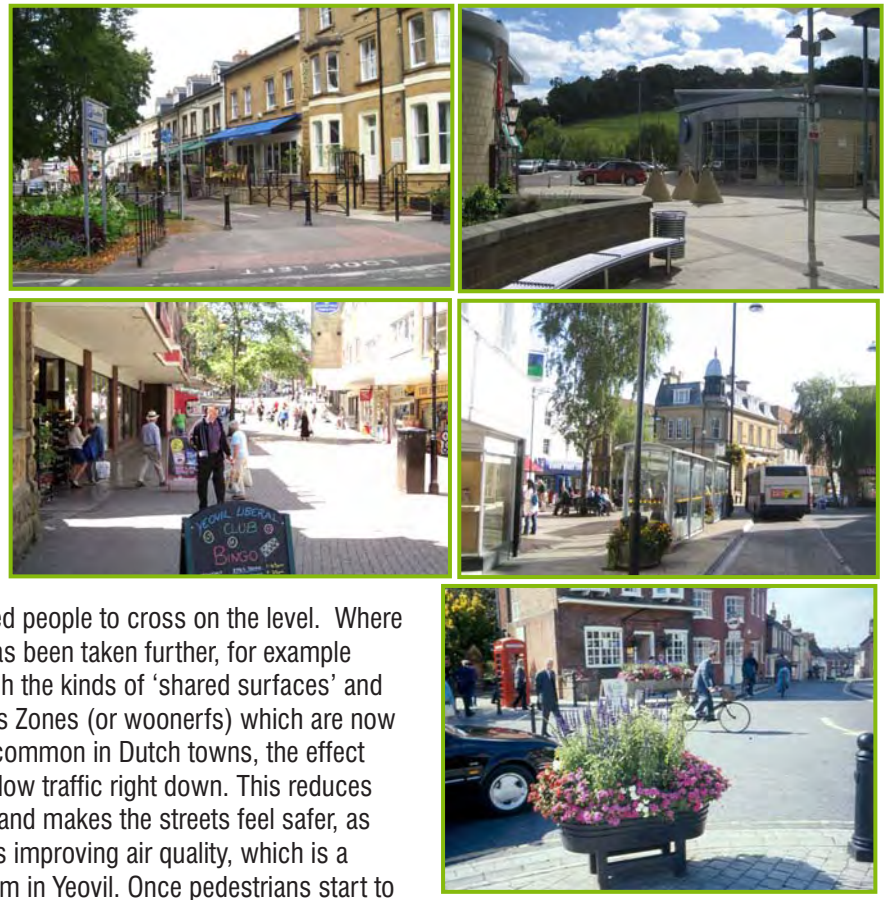
The masterplan has been designed to provide for a moderately high density settlement on the edge of the town centre, and for residents who need or desire not to use a car for most journeys. Many young people as well as older people and families cannot afford to run a car or choose increasingly not to. The homes and other uses on the site will be provided with excellent walking and cycling access, the provision of cycle parking, access to broad band and also communal parking located away from the home and separately charged for on a rental basis. All these proposals will provide people with the incentive not to use a car and make alternatives easy to use. This will reduce the need to travel by car.

The entirety of the site is within 5-10 minutes walk of the town centre, which is a huge benefit. Thus whether it is eating out or going to the cinema or theatre, or using the shops, there is no real need to use the car, except for bulky shopping, which can be provided for by using delivery services or accessing a car club. By relocating the main car parks, a lot of current short term movements by car will cease, and the benefits will be further increased by the way that the streets and lanes are being designed.

4.1.2 Distinctive pedestrian friendly streets and spaces

One of the best ways of encouraging walking (and cycling) is to design streets and their surfaces so people on foot have primacy. The results of the Bypass Demonstration Project in towns such as Berkhampstead and Petersfield showed that cars slowed down and even stop for pedestrians when the surfaces were laid with paviours, and when speed tables enabled people to cross on the level. Where this has been taken further, for example through the kinds of 'shared surfaces' and Homes Zones (or woonerfs) which are now quite common in Dutch towns, the effect is to slow traffic right down. This reduces noise and makes the streets feel safer, as well as improving air quality, which is a problem in Yeovil. Once pedestrians start to reclaim the streets, and shops start putting out displays or people sit down outside, the whole feeling changes, and the town centre as a whole becomes much more liveable.

Importantly this does not mean extending pedestrianisation, as cars and delivery vehicles can help to keep streets feeling alive. Rather it means having a hierarchy of streets, in which a different balance is sought depending on the street's primary



Top left: Restaurants and hotel on Station Road
Top right: Yeo Leisure Park
Middle: Yeovil town Centre
Bottom: Traffic calming in Petersfield

role. The value of good quality streets has been shown not only in terms of the high value for money from any expenditure, but also by the impact on property values and hence investment. In this way, an investment in new housing can also boost the economy of a town.

The street network in the urban village has also been designed to encourage cycling, as it is connected up to the cycle network, and will provide off road surfaces. However, streets will need to be carefully designed with appropriate street furniture as well as suitable materials to ensure that these routes are still seen as ones that are primarily for pedestrians. Any route that results in excessive speeds by cyclists could give rise to unacceptable conflicts with those on foot.

The proximity to the Country Park should result in many more people taking exercise or simply a stroll in this wonderful and under-used facility. The village will have particular appeals to young families, as primary schools are at most 25 minutes walk away, and health centres 15 minutes, with some even closer. What this means is that not only can families save money, but they can also have much more time for themselves by avoiding being stuck in traffic. Adequate space will be required for bike storage, preferably outside the home, as well as secure cycle parking for those visiting. gardening implements, and play equipment etc. along with space for home deliveries and neighbourhood recycling.

Above: Home zones and storage space for bikes in Freiburg, Germany

Below: A safe environment for children to cycle and walk to school, The Netherlands and Home Zone in Walker Riverside, Newcastle

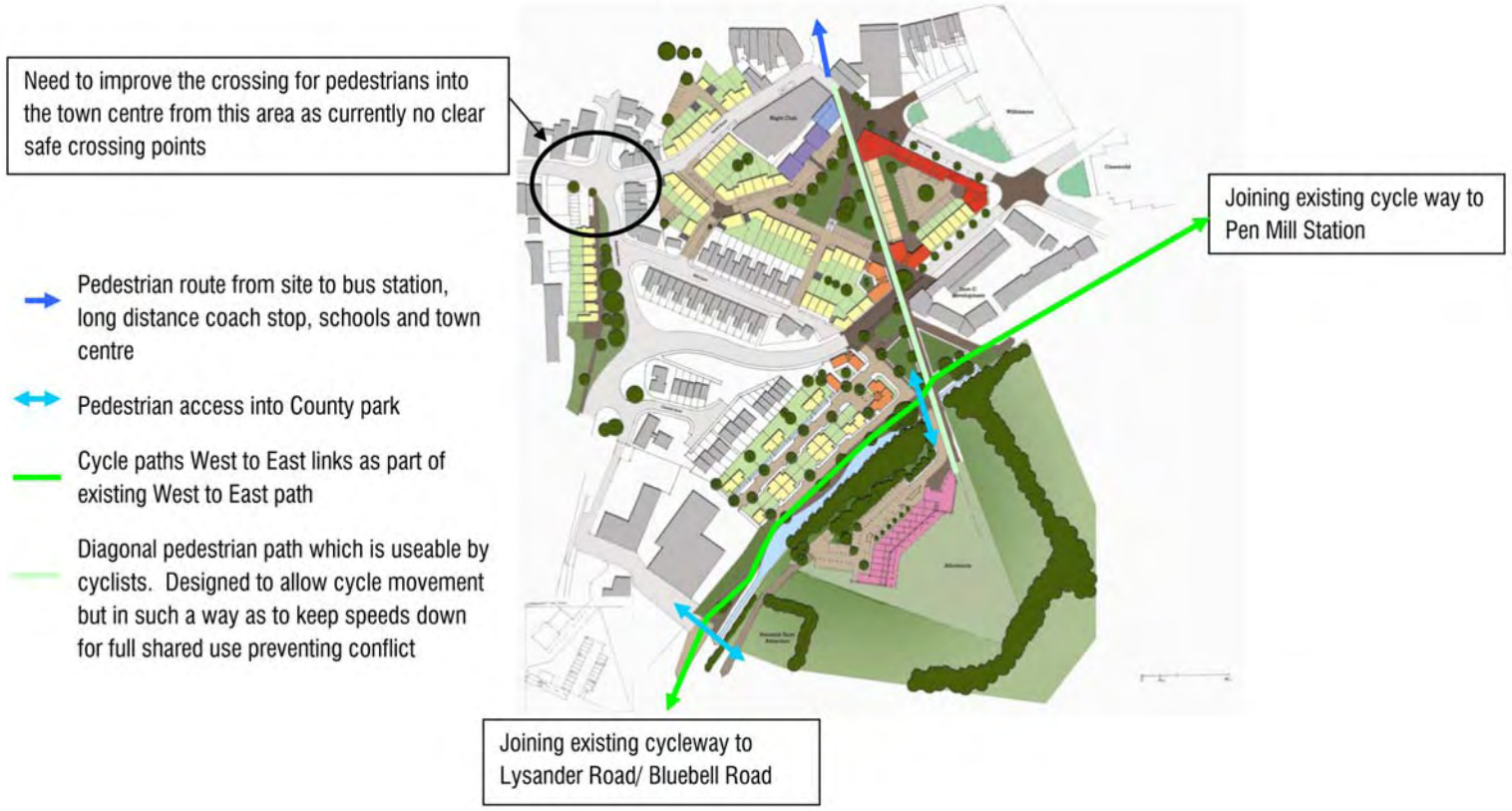
4.1.3 Parking provision and management

The creation of the village on the site has major implications for the provision and management of car parking. Firstly, the existing car parks on the site will be displaced and it is therefore necessary to consider carefully if and how this parking should be re-provided elsewhere. There are currently five car different car parks on the site, accounting for just over 400 spaces out of a total in Yeovil of 3,500 spaces. All are well-used except for the Box Factory car park. Space in the centre is valuable, and so parking needs to be designed and managed to make the area attractive as a place to live, without in any way harming the vitality and viability of the town centre. New parking space has to be found particularly for long stay parking (as much the short stay parking can find other places) and to handle projected growth. The exact requirements are set out in parking study commissioned for the study, which showed that most of the current usage is from shoppers coming from the Dorset direction.

Addison & Associates study suggested that the short-term spaces, which are not all well-used, could be in the short term to other short stay car parking elsewhere in the town centre, including the recently enlarged Tesco car park. Similarly the requirements of medium lengths of stay (about 4 hours) could also be accommodated elsewhere, particularly if there could be a change in management arrangements at sites such as the Leisure Centre. However, there will remain a demand for long stay car parking which currently takes place at Stars Lane, and also demand for parking is excepted to grow, as the town itself expands. Even with measures to reduce car dependence it will be necessary to find alternative locations for a significant proportion of this parking. However, it would be beneficial if long stay parking was provided at a site (or sites) that are somewhat more remote from the town centre.

The second critical issue for the village relates to the provision that should be made for the new dwellings. It was recognised that it would not be appropriate to promote

the village as a car-free development and it was initially suggested that there should be 0.5 spaces per dwelling. However, in discussions with key stakeholders it became apparent that there was real concern about appearing to penalise car ownership and therefore a revised standard was adopted of 1 space/house and 0.5 space/flat. The master plan has been prepared on this basis but would still require implementation of a controlled parking zone (CPZ) to ensure that only residents make use of the parking. It would also restrict the options for re-providing any of the spaces lost to more general use from the development. There is the possibility of providing a limited number of additional spaces in an undercroft under the village green, though this would be a costly structure for relatively few, approximately 20 spaces, and does not therefore form part of the masterplan.



Experience shows that charging for parking will influence people's choice about owning and using a car.. Furthermore, it is hoped that a significant proportion of those who would choose to live in the village would do so because they would be within walking distance of many of the facilities that they wish to use and would therefore prefer not to own or drive a car. This will especially apply to the young and the active elderly. However, it will be important to ensure that residents can have occasional access to a car and this could be achieved by the creation of a town-wide car club. A survey of occupants of new dwellings in Yeovil in 2009 found that 40% said they did not need to have a car, and approximately 60% of journeys were done on foot. 50% of households did not have a car, and of those that did have a car the great majority did not experience parking problems near where they lived. It should therefore be possible to achieve similarly low levels of car ownership within the village.

For the village to be successfully implemented it will be necessary to agree a town wide parking strategy that is beyond the remit of the study. This will need to address the needs of short and long stay parking, the differing demands of residents, businesses and visitors. It will need to accommodate different levels of demand at different times of the day with a set of tariffs that influence behaviour, such as providing for short stay close to the town centre, but providing for commuters elsewhere. It will also need to address priorities for enforcement and payment systems.

4.1.4 Car sharing/car club

The benefits of a car club have been mentioned earlier. To make this viable, it needs to be promoted for use by residents within the wider town centre. As well as providing several spaces for car club vehicles, the marketing strategy for the village will need to emphasise that Summerhouse Village is a place for people who want to live differently, and better! This should ensure that the car club is actively promoted and this time is a success, as such schemes have been in, for example, Poole and Brighton. By linking in with operators of successful schemes, such as Liftshare or Zipcar, or even Moorcar Carclub, who operate in Dartmoor, many of the teething problems can be overcome, and solutions found that suit the kind of place Yeovil is and wants to become. One aspect of developing a car club could be to include some innovative vehicles in the scheme, such as a hybrid or electric car, whose branding will add to the marketing appeal of the village as a whole. This will require a charging outlet at a suitable point.

The planning application for the site should include the requirement for a travel plan of which a key element will be the need for the marketing of the site to include personalised travel planning. Through this process the likely travel patterns of new residents will be understood and the car club and car share scheme actively promoted, preferably with support from major employers such as Agusta Westland, the hospital and college. Both of these elements can be developed and promoted through the Quality Transport partnership proposed.

4.1.5 Links with the Country Park

Currently the country park is hard to reach from the town centre, and is effectively cut off by the new road and over-engineered junction that were built after the railway closed. A clear and safe route along the 'diagonal' of Summer Walk will form an attractive route (rather like Gentleman's Walk in Leicester), as well as opening up a new waterside promenade along a well landscaped and enlarged Dodham Brook.

It is more crucial to improve the junction of Stars Lane and Summer House Terrace which was designed to take a much greater amount of traffic than has ever materialised. Here the Manual for Streets provides clear guidance on narrowing the lanes. The result will be more space for development, which will help to pay for the improvements.

As a consequence of taking the Country Park into the masterplan, not only will this lead to many more movements on foot or by bike, thus enabling healthier living, but it will also provide the extra green open space that is seen as a key feature of any eco-town. The green space will enable new facilities, like allotments, to be developed, and the hotel that is proposed will form an additional meeting place, along with the farm next door, which could be an extra attraction. Improved links will also boost the usage and viability of existing community facilities such as the swimming pool, and The GateWay, both of which will help in building social capital.

4.1.6 Quality transport network

Currently planning for transport of different modes is not fully integrated, and provision is very fragmented compared with the models we have highlighted. To secure the modal shift sought (that is to get people away from their cars) public transport needs to be improved so that it provides an attractive, convenient and safe alternative to car use. Yeovil has the benefit of two railway lines and service frequency on the main line is expected to improve. This needs to be effectively integrated with local bus services, improved cycle connections and attractive pedestrian environments. While the UK is still a very long way from practice in Continental cities in Northern Europe, the rising cost of running a car and limited incomes, are going to encourage moves back to more sustainable forms of transport and living. Yeovil should therefore be making the most of its rail travel and bus services.

Summerhouse Village will not achieve sustainable travel in isolation from measures that need to be introduced and improved elsewhere in the town. Improving local bus services will be a challenge and will require partnership between the operators, the local authorities and other stakeholders, such as major employers, the hospital and the college as for example is being achieved in St Albans in Hertfordshire. The UWE report illustrates that there is local support for attempting to make improvements and part of this will be to ensure that funding continues to be made available for measures to encourage changed behaviour. The scale and visibility of the urban village should make it easier to move towards a quality transport network, with much higher levels of usage.

The development of the village will also provide an opportunity to shift some road space away from car use. For example, the junction of Summer House Terrace with Stars Lane would be redesigned to reduce carriageway widths and make it easier to cross the road. An additional pedestrian crossing would be provided as part of the diagonal route between the village and the Country Park, and provision made for bus stops.

4.1.7 Sustainable transport campaign

It will be vital to mount a longer-term campaign to change travel behaviour. Improved linkages coupled with 'smart cards' and better waiting/information facilities that make it easier to use the new system will be vital, and here the latest breed of phones will probably end up serving as the main means of payment. As an example, those who bought homes in the redevelopment of Caterham Barracks in Surrey have benefited from a community based trust, that runs arts and sports facilities. But they also are given a season ticket for use on the buses, which gets people into the habit of using a bus, before they have to pay for it.

The Second Yeovil Transport Review makes a shift from car use to bus use for short journeys a priority, and this is something that can be made to work in Summerhouse Village, and the adjoining residential areas, before it is extended more widely. Thus

the new bus stop that will be required at the bottom of Stars Lane will not only look modern and attractive, but will also have easily accessible information on where and when buses, and other forms of public transport operate. Positioned next to the Yeo Leisure Centre, there is a great opportunity to reinforce the message that 'healthier living pays', and to get more people using the buses. An important part of the campaign will involve cutting traffic speeds in the vicinity of the town centre, where for example '20 is plenty' and making it easier and safer to cross the roads. Research has shown that improvements to the public realm that are 'human scale' and 'put people first' can increase turnover in the high street by 5 to 15%.

4.1.8 Test-bed for the wider area

If the urban village is to test out, and learn from new approaches that are fundamentally different from the norm, then it is important to build in a learning process. A dedicated team should bring together the necessary organisations, and learn from both reports and from visits to relevant examples. There also needs to be some budget for surveying those who move in to monitor their experience. By feeding the results back into the much larger developments, such as the urban extension, the payoff will be considerable.

A good way of doing this would to be to link up again with UWE, who have considerable expertise in both transport and community planning, so that what happens in Yeovil is well-recorded, and feeds into national policy and practice. For example, the design of the homes should support working from home, and using public transport. In turn this functions better when trips can be easily made to the town centre to get a coffee or enjoy some fresh air. By monitoring how people use time, and encouraging a café in one of the retail units in Stars Lane, or at the new hotel there is likely to be a greater shift towards a different way of living than if people were isolated in a conventional housing estate.

Solar panels and edible gardens in Graylingwell Park, Chichester

4.2 Environmental strategy (energy, waste and water)

This section sets out how Summerhouse Village will work towards the eco-town objective of 'zero carbon' development as a whole through the use of locally produced energy, and a range of other measures. It will touch on the related issues of waste and water and biodiversity, all of which feature in the Eco-town Supplement to PPS1. The proposals draw on work by South Somerset District Council to examine the feasibility of a district heat network for the urban village, research by URBED into planning Combined Heat and Power in different situations,[22] and the TCPA's energy worksheet.[23] The feasibility of the basic ideas were also tested out at the visioning day with potential utility partners. Detailed proposals regarding PassivHaus standards should be applied as Codes for a proportion of the new homes that face South, as this could be an important experiment in finding out how far energy consumption can practically be reduced in the English climate.

4.2.1 Energy proposals

Having tested out the principles with local stakeholders, further research has confirmed the viability of a number of concepts.

PhotoVoltaic As the site is sheltered and South facing, and Yeovil lies in the part of the country best suited for solar power, all the homes should take full advantage of solar energy. House mounted PhotoVoltaic (PV) cells can benefit from substantial financial incentives, now that the energy they produce can be sold back to the National Grid. Any surplus could also be sold to a local customer. PVs can be installed on sloping roofs, or where the roof does not face due South, on flat roofs, which may also be used as roof gardens.

Not only are the costs coming down all the time, but PV cells clearly mark out housing as being 'future proofed', and so should help sales. The precise system would be up to the developer and will depend on what is on the market at the time. PVs will probably be required to meet Code for Sustainable Development, though specifications may be relaxed. They will effectively turn the site into a small power station during much of the day, as they function even when the skies are cloudy.

Solar panels on the homes, along with large windows, will over a number of benefits:

- They will clearly signify that the development is forward looking and energy conscious.
- They can be installed more economically, benefiting from bulk purchases and net work supply agreements.
- They will contribute to the idea of the scheme being a demonstration project for eco-town principles.

Top left: Solar panels on new homes in Upton, Northampton
Top right: Solar panels in Freiburg, Germany
Bottom: Experimental homes at BRE Innovation Park

[22] *Community Energy: urban planning for a low carbon future,* Nick Dodd for TCPA and the CHPA, 2008
[23] *Developing energy efficient and zero carbon strategies for eco-towns,* TCPA, 2010

Passive Houses The idea behind a passive house is to use high levels of insulation plus careful orientation and window sizing to make the most of solar gain, and the concept has been developed to a significant extent in Germany. A proportion of the homes should also be designed to 'PassivHaus' standard, as set out in the table. As typical energy bills increase to over several thousand pounds a year, houses built to PassivHaus standards should gain a marketing advantage. Such a policy is likely to be of most interest to those acquiring the 'executive homes' on the Vauxhall showrooms site. However higher levels of insulation offer much wider benefits, and are closely tied up with the method of construction. Prefabricated panels with high specification windows offer a number of advantages, not least the opportunity to get the structure up much faster, and in the controlled conditions of a factory.

Terraced houses or flats will require less heating (or cooling) anyway, and the site should also benefit from cooling winds off the hill in Summer. However experience shows a wide divergence between planned energy consumption and savings and actual performance. This is influenced not just by design and construction, but also by occupier knowledge and practices. Consequently an important part of the project relies on providing households with individual advice in the same way as individual travel plans.

	PassivHaus Standard	UK New Build Common Practice
Compact form and good insulation:	All components of the exterior shell of a PassivHaus are insulated to achieve a U-Value that does not exceed 0.15 W/m^2/K	Limiting U-values of approximately 0.25-0.35 W/m^2/K
Southern orientation and shade considerations:	Passive use of solar energy is a significant factor in PassivHaus design.	Some consideration is given with regard to north/south orientation, but the improved energy savings resulting from passive site design are often overlooked.
Energy-efficient window glazing and frames:	Windows should have U-values not exceeding 0.80 W/m^2.K for both glazing and frames - this requires the window frame to incorporate insulation and the glazing to be triple. Solar Heat Gain Co-efficient through the glazing should be at least 50%[1].	1.8-2.2 W/m^{2}K typical
Building envelope air-tightness:	Air leakage (n_{50}) through unwanted gaps and cracks in the building fabric must be less than 0.6 times the house volume per hour under negative and positive pressurisation.	Design air permeability of 7 to 10 m^2/hr/m^3@ 50 Pa. This is approximately a factor of 10 poorer than the PassivHaus standard. Research has also shown that air permeability values for completed dwellings frequently exceed these design limits.
Passive preheating of fresh air:	Fresh air may be brought into the house through underground ducts that exchange heat with the soil. This preheats fresh air to a temperature above 5°C (41°F), even on cold winter days.	The majority of new-builds do not achieve good enough air permeability values to warrant the incorporation of a whole house ventilation system - thus trickle vents, extract fans, or passive stack ventilation is commonly used.
Highly efficient heat recovery from exhaust air using an air-to-air heat exchanger:	Most of the perceptible heat in the exhaust air is transferred to the incoming fresh air (heat recovery rate over 80%).	
Energy-saving household appliances:	Low energy refrigerators, stoves, freezers, lamps, washers, dryers, etc. are indispensable in a PassivHaus.	Dedicated low-energy lights are provided in a number of rooms in a new dwelling - if appliances are supplied they will be generally C-rated or perhaps 'Energy Saving Recommended' in some instances (as these are widely available).
Total energy demand for space heating and cooling	**Less than 15 kWh/m^2/yr**	**Typically 55 kWh/m^2/yr**

Combined Heat and Power (CHP) In addition to the solar panels, we are proposing as a major innovation, the use of Combined Heat and Power for local energy generation. CHP is extensively used on the Continent to save energy, for example in Vathorst in Amersfoort, as only 30% of the energy used in generating electricity is utilised, with a lot lost in transmission. Indeed in Freiburg, which is promoted Europe's solar energy capital, half the energy (and therefore saving in carbon emissions) comes from CHP, generated close to the housing that it serves. One of the main benefits from CHP is that central heating boilers are no longer needed in houses, which not only saves space but also the maintenance and other costs of looking after a system. The cost of installing the heat main can be no greater than putting in gas pipes, and there may even be savings on 'carcassing' each house.

Viability depends on having a commercial outlet for the heat, as contracts can then be entered into to support the longer term investment. A start has been made on laying a heat main at Zero C, and research by South Somerset DC suggests that there is enough local demand from the two nearby swimming pools to make this aspect of the scheme viable, which takes full advantage of the location next to a town centre. It will also benefit from the Government's incentives for renewable heat, and make a major contribution to achieving the goal of a zero carbon community, that is one that generates more energy than it consumes.

CHP can use many different fuel sources, and it has become common in the UK to go for wood chips, which are often imported, and which are intrinsically bulky. We propose instead using gas to run the energy centre, which is available and reliable. We also propose investigating the production of biogas from local sources. A Dutch firm specialising in energy solutions has confirmed the suitability of the site, as the 'energy centre' or power plant could be sited on the ski slope site and would work well with an adjoining hotel, which would be a major user of heat.

While experience with biogas in the UK is still at an early stage, it can be produced from either food waste or potentially from animal slurry. Currently much of Somerset's food waste goes to a pioneering AD plant in Ludlow, but others are planned, for example at Dorchester. As cows are still important to the local economy, this is a source that merits further work. Advice from Northern Italy suggests that farmers can earn as much from producing energy as from producing food. In the process, this could also save unnecessary lorry journeys taking waste to landfill site, or dealing with slurry.

Electricity produced in the plant could be sold directly to a major local user such as the Yeo Leisure Centre. The town centre location of the village enables pipes and wires to be kept to a minimum, thus boosting the efficiency of the system. Advice from the TCPA's worksheet suggests that at least 2MW of capacity will be needed to make the project viable, a recent scheme at Graylingwell in Chichester has two 500 kw engines. Even on a larger scheme, phasing would be required, this could provide a valuable test bed for larger scale applications. It could also form part of a wider strategy for making the South West a leader in renewable energy, with experience from Great Bow Yard in Langport and later Hanham Hall in Bristol providing other examples.

Other measures Energy consumption, and hence carbon emissions, will also be saved through the way the village is designed and constructed. Lower than usual car usage will help. So too will requiring construction materials to avoid using embodied energy, for example by recycling construction waste on site. Off site construction of highly insulated panels and well-fitting windows, along with careful orientation will all help in cutting energy consumption, and hence making housing much more affordable than it would otherwise have been.

4.2.2 Water proposal

As well as running out of supplies of energy, the world is also facing the consequence of erratic weather events, linked to climate change. This means not only periods of drought, but also cloud bursts when the levels of run-off may exceed the capacity of the drains, leading to localised flooding. With a hilly site and next to a brook that used to flood, a strategy is needed for dealing with water in ways that add value rather than just costs.

Above: CHP plant in Freiburg, Germany
Bottom: Energy centre, Graylingwell Park, Chichester

Dodham Lake A central element in the masterplan is turning the Dodham Brook back from an engineered channel into a natural feature. This can be done relatively easily by changing the weir so that it holds a higher and wider stretch of water. This will give Yeovil the waterside promenade that people have craved, and produce another lake, but this time one that will be overlooked by housing. Research has shown that views over water typically add 18% to house values, which will help to make the proposals for executive homes on the site of the Rowcliffe Garage financially attractive.

With a larger body of water, as in Dutch new settlements, some of the run-off from the buildings can be cleaned and held on site, rather than pouring into the sewers, thus helping with water management. Water will also be held longer on site through a series of trees connecting the town with the country park, permeable services for the main diagonal walk and car parking spaces, and 'green roofs' on flat buildings. As well as helping to 'future proof; the site, these measures will also increase the attractiveness of the development, and contribute to making it feel like a traditional village.

Sustainable Urban Drainage Systems
When SUDs have been used elsewhere, for example in Upton in Northants, problems have been found in connecting up the different elements. Great care must be taken in getting the levels right, and hence the system should be provided as part of the basic infrastructure, and not rely on individual developers doing their bit. As water has to be supplied to each home, as well as taken away, there is the potential to create a system of ducts under the pavements, which can carry all the services. Not only will this save the costs of continually digging up the roads every time a change has to be made, but it could also be used to generate an income to cover the ongoing costs of maintaining the public realm. This may be through an agreement with a commercial MUSCO (Multi Utility Service Company) or through some form of development trust, as recommended for both urban villages and eco-towns.

4.2.3 Food

One of the main sources of carbon emissions is food production and distribution, and eco-towns are expected to consider what they can do to minimise waste.[24] Given the growth of interest in allotments and local organic food, we believe there is scope to provide space for food production that will add to the attractions of both the new housing and the town centre. The challenge is how to ensure that these are properly managed and maintained so they reinforce the area's natural beauty. In particular, the proposal for a hotel with an energy centre alongside could be strengthened if the adjoining land was managed as a series of public gardens, including an area given over to allotments, with priority for those moving into Summerhouse Village.

There are now a number of successful community enterprises that have transformed areas of countryside using the labour of young people as well as volunteers. An outstanding example at Ruskin Mill near Stroud, where an educational trust has turned a whole valley into a series of public gardens, working with young people with learning difficulties. The trust has gone on to undertake similar projects in other parts of the country. Other examples are the Care Farms, like Jamie's Farm near Box, Wiltshire, which offer 'eco-therapy' to children in need of care.[25]

By working with the existing farm, who play a key role in managing the adjoining grassland, and also The GateWay, it may be possible to set up something similar, which would overcome the issue of how to fund ongoing maintenance. Alternatively this is a role that the Town Council may be prepared to play. A further source of income could be a stream of rental income from the Energy Centre, which could be run on biogas, itself produced from food and animal waste. By combining a number of related elements, and using land that would otherwise go to waste, a viable business plan can be realised, along with the aims of the Yeovil Vision.

Above and middle: Sustainable Urban Drainage Scheme in Upton, Northants

Bottom: Preschool garden area on the village green at Dickens Heath, Solihull

[24] *What is an Eco-town?* BioRegional with CABE, 2008
[25] Society Guardian, August 3rd 2011