

THE DETR EVALUATION FRAMEWORK FOR SUSTAINABLE BUILDING

A lecture by Roger Levett of CAG Consultants, given at the AiH Estate of the Nation conference, 24th May 2000. This Design for Homes CPD module should take you about half an hour to go through. The publication referred to is the DETR report *Millenium Vilages and Sustainable Communities*. (see end)

I am Roger Levett. I was asked to talk about the evaluation of sustainable settlements, drawing on some of the work we have been doing for the DETR with Llewellyn Davies, which is about to be published by the DETR. It might be published within a matter of hours, not even days. The Department did not know whether it was coming out today or tomorrow. Anyway, they have asked me to try and entice you to buy it rather than save you doing so, so I will try and give you a few flashes of beguiling bits from this research rather than the Full Monty. I am not going to show you any pictures; I am afraid I am of the school that believes that one sentence can be worth a million pixels.

My starting point, and starting point of the research, is what we could call the new orthodoxy of housing, which you are all familiar with; what PPG3 calls for: building on brownfield land in urban areas; high density; mixed-use; mixed tenure; social mixture; building near amenities; good public transport; and build it energy and resource efficiently. That we can contrast with what one might call the traditional module, which is, in a sense, everything the PPG3 favoured housing is not.

We settled into a kind of comfortable orthodoxy about this. Our starting point was to start to ask a few questions about that. What if a brownfield site has very rich ecological benefits, which many of them do compared with a greenfield site which is actually very uninteresting ecologically and not much use for recreation etc. Where is the benefit of building on brown or green?

Likewise, one can see, intuitively, building in urban areas is a good idea, but supposing it overloads its capacity, affects the infrastructure of those urban areas and reduces the quality of life around them? Conversely, the country side area is sparsely populated and development outside urban areas can be important to anchor amenities by providing enough use. So there is a slightly uncomfortable twist to this. High density; great idea, but as Peter Hall referred to earlier, high density of people rather than high density of roofs.

I live in a textbook example of high density urban living, in Islington. There is a very high density of houses per hectare. Many of the houses in my road could comfortably accommodate a family of at least six. More than half of them are occupied by single people or couples, some of whom spend quite a lot of time away at their other residences. Chance would be a fine thing. We are the only family of five in that road. There are a few families of four people, and some of the houses are empty for various reasons, so the density of people per hectare there is much lower than the built structure could allow. Low density buildings could be very highly occupied, so the number of people you get per hectare of land could be much higher.

Mixed-use: some research shows that even in the textbook definition of mixed-use estates, people tend to network with people like themselves. Even where you have a social mixture, people tend to form their network among their own kind, and the amount of interchange is relatively small. Even with mixed-use, they won't necessarily use the amenities on site. They might drive away for their shopping, recreation and employment elsewhere.

We are not, in a sense, saying these are not good ideas. What we are saying is the benefit you get from them may be much less than you might expect, compared with the typical residential-only monoculture. Even if a development is purely housing, it is quite possible people living in there are going to use very local amenities just outside the development for a lot of their social life, work, education, shopping and so on. There's not much point in putting things near public transport if people still get in their cars.

I have been travelling around the countryside quite a lot recently, and I am so often struck by the number of buses trundling around the countryside that are empty. For whatever reasons, people are not using them. So the fact they live near the bus stops is actually quite beside the point.

The new orthodoxy for sustainable housing (eg PPG3):		
New orthodoxy	... but what if ...	Traditional
'Brownfield'	'brown' site had rich ecology <i>'green' site had no ecological value</i>	'Greenfield'
In urban areas	overloads urban infrastructure <i>anchors local amenities</i>	Fringe / rural
High density	sparsely occupied <i>intensely occupied</i>	Low density
Mixed use	residents shop / work elsewhere <i>residents shop / work nearby</i>	Residential
Mixed tenure	people network / socialise with peers <i>/ interest groups anyway</i>	Owner occupied
Socially mixed		Monoculture
Near amenities, public transport	people drive to distant amenities anyway	Few local amenities, poor public transport
Energy efficient	profligate behaviour <i>frugal behaviour</i>	Energy wasteful

You can build a home energy efficient but if you are careless enough, you can still run up a huge energy bill, by not switching off the lights, turning the heating down etc.; leaving things on all the time. Conversely, you can live frugally in a house that is not energy efficient by just doing basic things like turning things off when not using them, turning the heating down, closing the curtains etc.

So what are the lessons we want to draw from this? There are several, I think, quite important ones for the way we think of achieving the ideals -- which I must state I totally support -- that all this is trying to achieve. First of all one can lead a horse to water but ten can't make it drink. Planning design and construction can only encourage and facilitate certain types of behaviour; they can't require it or enforce it. The X factor, the fudge factor, in this one is behaviour, preferences and values; how people actually choose to live in whatever we build for them. We can't be deterministic. We can't say, if we build houses with certain things in mind, that is the way people are going to live in them. The key point in the whole research problem is that we should not treat recipes as religions.

I show you a recipe in danger of becoming a religion. Remember the 1960s? The people who built the high-rise estates did so out of fine motives and high ideals. The mistake was not to recognise the recipe was not actually delivering what it was supposed to, because of the factors people did not take into account when designing the recipe. And we are living with the consequences of that today. We have to get back to outcomes. We have to ask, what are we actually trying to achieve? An awful lot of the time we are forced to use proxy measures and, I have to suggest, all the things on the left hand side of the last slide: proxies, rules of thumb, decision rules which point us in the right direction. We have to use them all the time when a planner is deciding, what sort of development there should be in a place where they can't say what the outcome will be. They can only say what sort of site it should be on, or this kind of build form or that kind, built in this way or that way, the proxies, inputs, processes, are the things we have to manage. But we have to distrust them and test them back on the outcomes they are achieving and, if necessary, tear up orthodoxies and refine them.

The final lesson from this really is; evaluating a single settlement or development is artificial, because what happens in that settlement or development depends on what happens around it. This is a two way street. For a start; how sustainably people live in a particular place will depend upon the infrastructure, services and surrounding. It is much easier to live a low car use life at Greenwich village than by water, say at Allerton Bywater, simply because of the good public transport there is from Greenwich compared with Allerton.

How does it affect what goes on around it? No good piling lots of services and benefits in one area if that denudes the area around it. Can I recount a bit of history from some of the previous regeneration experiences. You draw a line..... and provide tax breaks, commissions and so on, and you find the businesses from the surrounding area simply hop into the designated area in order to take advantage of all the tax breaks, commissions etc. and the area they popped off from is left high and dry with few or no amenities. You have to avoid that happening.

So there are some, I think, quite cautionary thoughts which we went through in this project. What we came up with is an attempt to -- I hate to use the term, 'get back to basics' -- but that is what we are actually trying to evaluate for. We came up with seven or eight themes. I will explain why it is seven or eight; here they are. I will go through them the way we measured them. One key interest of sustainability is obviously resource consumption. One of those is energy consumption, particularly fossil fuels use, which results in greenhouse gases. The physical energy efficiency of a building is an important element of that. But you also have to look at the way people go to and from housing in particular places, and we have to look at the energy used in buildings and so on. So we have to put all those energy impacts of people living in a particular place into a common currency, and greenhouse emission is a fairly handy way of measuring them.

We need to look at water waste and other dimensions of development impact. There is a technique which you can use, which is called the ecological footprint. You look at the land area needed to grow crops, or mop up the pollution we put into the water, or regenerate waste. This is quite a promising way of putting a clump of things together into a single measure. For a start, energy is a really good proxy, and you don't need to go to the footprinting.

The second theme then is venal capital. What are the benefits and services of site producers lost by development, and conversely, of course, what are the venal qualities which development creates? Of course one is trying to get more pluses than minuses. So the question we think appraisal should be asking is what damage is done to important benefits and services that come from this site, which is not in some sense substituted or compensated? Some things can be compensated more easily than others. We feel that if this approach to venal capital..... where you look at what the environment is doing and what benefits we are providing, if this was entrenched in planning obligations, we could turn round, reverse, the incentives we currently see.

If, for example, somebody was wanting to build a new development on a nice greenbelt site on the edge of a town, with beautiful views and rich biodiversity, and he was told you can build there if you like but if you build there you're going to have to provide the same amount of habitat for the same species somewhere else, and you're going to have to provide somewhere for the people who currently walk their dogs in this patch of woodland to do so, equally in reach of those people, and have to provide a bit of green land to preserve the settlement which it is there to achieve and so on, you get to a situation where developing that site looks a lot more expensive than developing the gas site with its poor ground, pollution etc., in the inner city area, where there is no venal benefit worth speaking of. So there is a potential tool there.

Anyway, to go on; third thing is design quality. I am probably the last person to talk authoritatively about this. I will list some of the dimensions of that which are important in the literature. Let me get into things a bit less familiar in appraisal. What sort of quality of life do you get from living in a settlement? The sorts of aspects of quality of life that design of settlements or developments that greatly influence this is, what sort of services you get access to. How easily? Is it safe? Does it feel safe?

Can you move around without worrying? That is obviously a very quick sort of summary about quite a lot of different issues.

Another thing we are concerned about nowadays is equality. One way of looking at this is; what is the diversity of opportunities and where are different kinds of deprivations concentrated? What sort of things do people tend to suffer and how much do these actually affect the quality of life? How much are the people, affected by the settlement, who live in and around it? How much say do they have in how it is planned and decided on, and how it is run once it is there?

The final one is commercial viability. All sorts of commercial measures. In a sense the public policy -- the relevant one -- is, does it need a drip feed of public money to keep itself going once set up? If you can throw enough money at it, it becomes relatively easy to produce all these things. The real test is whether you can get it without the subsidies, because that money affects what happens elsewhere.

The eighth one -- which I said you may think is not actually a criteria or a theme in itself -- is, do all these things work together? Integration: one can summarise that as saying things like, does the settlement enable people to live a good quality of life without using much knowledge or without travelling so much or without needing a great deal of space? That triggers you into thinking about things like shared use public amenities. The things we can all have privately owned in our own homes and have room for; can we share them; for example, city car clubs? The slogan of the City Car Club is: "Why own two or three cars when subscribing to this club you can have your choice of eight or ten cars, each matched to whatever use you want it for?" The sort of ratio of the Dutch and German city car clubs is 10 cars to 50 or 100 houses, which is a huge saving of physical space the cars would otherwise occupy, and therefore, the more use you can get out of that land.

So this, in very brief summary, is the framework that we are suggesting. Looking at this together, with the millennium villages in particular, and other examples, we arrived at some messages about development process. The very unpopular one is; if you want it to be innovative, it takes longer to fit all the pieces together or it costs more. So innovation, cheapness and speed really pull in different directions. If we are really serious about innovation, we have not got to say, it's got to be quick and cheap as well. We have to give it a bit more space in order to achieve innovation. Once we have done that, we can do that, but unless we give it space, even if it takes longer and costs more, we are not going to innovate it at all.

Secondly, a rather uncomfortable message is delivery of modules. In the millennium villages we are seeking to deliver very innovative and ambitious new public goods through an ultra conventional development module of a big consortium, led by a commercial developer, who is obviously needing to make a profit out of it. There are concerns about the intention of that. Obviously what is going to happen is, the public agency are going to try and stitch in all the public goods they want, and extort all they can, and the developer is going to want to extort as much money as they can in order to do it. So you set yourselves up to have the sort of arguments we have seen at Greenwich. We are not taking any views about the rights and wrongs of that but the fact that kind of brawl could develop -- when everybody went into it wanting it to be an ideal -- is particularly, I think, an interesting message.

Another important point is context. You can't get nice sustainable lifestyles unless the right infrastructure is there; also unless there is demand. It is extremely difficult to do untried, unpopular things in a place where there is not a strong demand for housing in the first place. It is easier where there is a buoyant market and the average house buyer is prepared to accept the sustainability, high density nonsense in order to get somewhere else to live, rather than be able to pick and choose between developers struggling to make a living and selling things.

The proposed evaluation framework	
Theme	Measure
Resource consumption	'Greenhouse' gas emissions per resident (building embodied and use and transport); water, materials efficiency / reuse
Environmental capital	Unsubstituted damage to environmental benefits / services; enhancement / creation
Design quality	Identity, beauty, accessibility, adaptability
Quality of life	Access to good local services and opportunities; crime
Equity / inclusion	Diversity; multiple deprivation
Participation	in planning and running the settlement
Commercial viability	Not needing ongoing subsidy
Integration	Objectives support each other, eg reduce the energy consumption / motorised mobility / waste / space required for pleasant lifestyle

The role of culture and perceptions. Here I will talk a little bit about Europe if I have time. We were very leery about trying to extract too much from European examples, because so many things are different in different countries. Something we found very striking was comparing what is going on in Britain with one particular development on the edge of Friedberg in Germany, which is a former French military base being turned into a sustainable settlement. There are two things very different about that. One is that the development module is quite different. The city council owns the site. The city council, under the deal for this whole development, will have to pay the federal government any profit it makes from selling land over and above what it receives. It means the city council has no incentive to maximize turnover, so it maximises policy turnover.

So what the council has done is to set sustainable development parameters and standards for what happens on that site, and then to invite people to buy slabs of land and build houses, small apartment blocks and other buildings on the site. It is mostly individuals, households and consortia, and actually quite active in helping people get together to build consortia, to build blocks of flats they will then live in. There is no role for big commercial companies at all. It is a social democratic module. It enables people to make specific lifestyle choices and put them into effect in the process of buying land and building it on some quite tough ecological targets whereas in the British model, where the development consortium attempts to build with lower targets so it can then sell and cover its costs and make a living. Whereas in Friedberg, people say: "We want to live this way and we want to have homes that can enable us to do this".

That comes back to this point about cultural perceptions. It's car free. There is car parking around the edge of the site but people can only bring cars in, in order to unload, and then they have to drive them back off the site to park. The mobility standard for that development is that a five year old child should be able to walk from home to school or the shops, without escort, safely. That is what they are trying to achieve, and everything in the public spaces is designed to allow for that.

In Britain that sounds looney and outrageous; as outrageous as triple glazing and the like. In Friedberg, it is only a slight accentuation of what is already a perfectly acceptable lifestyle. In a city where most Bourgeois people will make most of their weekly journeys by tram, bus or bicycle anyway, and only get the car out if there is a special reason to do so, it is only a small step from that to not having a car in the first place. Contrast that to where buses are only for losers and nutters, and normal people don't go on them if they can possibly avoid it. So we thought that that sustainable lifestyle was very important.

Finally, a message about institutions. We have set ourselves up quite a challenge in going for joined up government and joined up thinking, because trying to optimise across a range of different objectives will generally involve you in accepting some compromises of your main original objective. In this country we have finished a 20 year job of setting up very tight, very tough, single-minded performance measures for each individual organisation and each individual centre, across the public sector as well as private.

So having just brought in this ordered culture, which had some very good reasons for being -- you know, if it proved efficient... be explicit about what you are trying to achieve -- having finally got this in place, we now have to sort of backtrack from that and say we can accept a slight loss in what you as a developer might want to achieve financially in order to get social benefits, or we accept a slight loss in terms of the efficiency of delivery of education in return for having more schools locally, so people don't have to travel so much. We require each organisation, each sector, to take some responsibility for the other organisations' objectives. We need a new approach of joined up policy appraisal to catch up with this. We have not got that yet.

All the sustainable settlements projects we looked at involved the bending of existing rules. Highway layouts actually reducing space for vehicles rather than based on large turning circles for lorries going up cul-de-sacs. Rules need to be bent, rules need to be broken and suspended. That requires time for people to negotiate between different organisations and go through their own decision processes. The more consultative, the more consensual, the more transparent decision processes are, the harder it is for anybody sitting in an office to say: "Okay, I've decided we're going to go and break the rules on this one". It all takes time.

In Germany there is a full-time group of people whose job it is negotiating with the building control people; people who set the rules about parking fees etc., to get agreed breaking and bending of rules. It is going to take them more than 10 years to do what Greenwich was trying to do in about three years, partly because of this rule bending problem. We swim against the tide anyway on sustainable settlements in Britain. We have an economy pushing in all the wrong directions.

There are several ways of dealing with that. Throw more money at it in order to be able to row harder against the tide. The other is to find the backwaters, the places where the tide is pushing slower. And the other is something else. Again this goes against orthodoxy. We have been keen to open up cities, competitiveness between cities, which seems balmy to make a policy end in itself. Of course, if you set up competition, it is harder for anybody to make that co-ordinated pattern of behaviour which is different from the standard.

So the overall message, if there is a single overall message from this research, which I hope you will all rush out and buy, is, when you are doing these things, which are all admirable and all -- I believe in them. I am a believer. I'm not knocking this. I think this is the right thing to do in almost all the places. When you are doing that, don't miss out on the fact this is why you are doing it. These are the overall objectives, and the challenge we all have is to keep this in the back of our minds, and make sure, when we are doing what we are doing, we are pushing for these, rather than fetishising a few little bits of the clockwork.

For a copy of the DETR report *Millenium Vilages and Sustainable Communities* prepared by Llewellyn Davies and CAG Consultants, please write to th DETR Publications sales Centre, Unit 8 Goldthorpe Rd Industrial Estate, Rotherham S63 9BL.