Chapter 5: New Planning and Construction Systems

If we wish to provide sustainable settlements it is vital that existing villages, however modest, can expand to provide pedestrian accessible, high quality and affordable houses while retaining and improving their distinctive rural character. This cannot be done without planning and yet planning mechanisms and in particularly designation for development has not been particularly successful in channeling development in positive ways. Local Area Plans are the most common vehicle adopted by planning authorities to deliver their village development objectives. Offaly Co. Co. has already prepared a number of Area Plans for the larger villages; - Kilcormac had an Area Plan prepared in 2003.

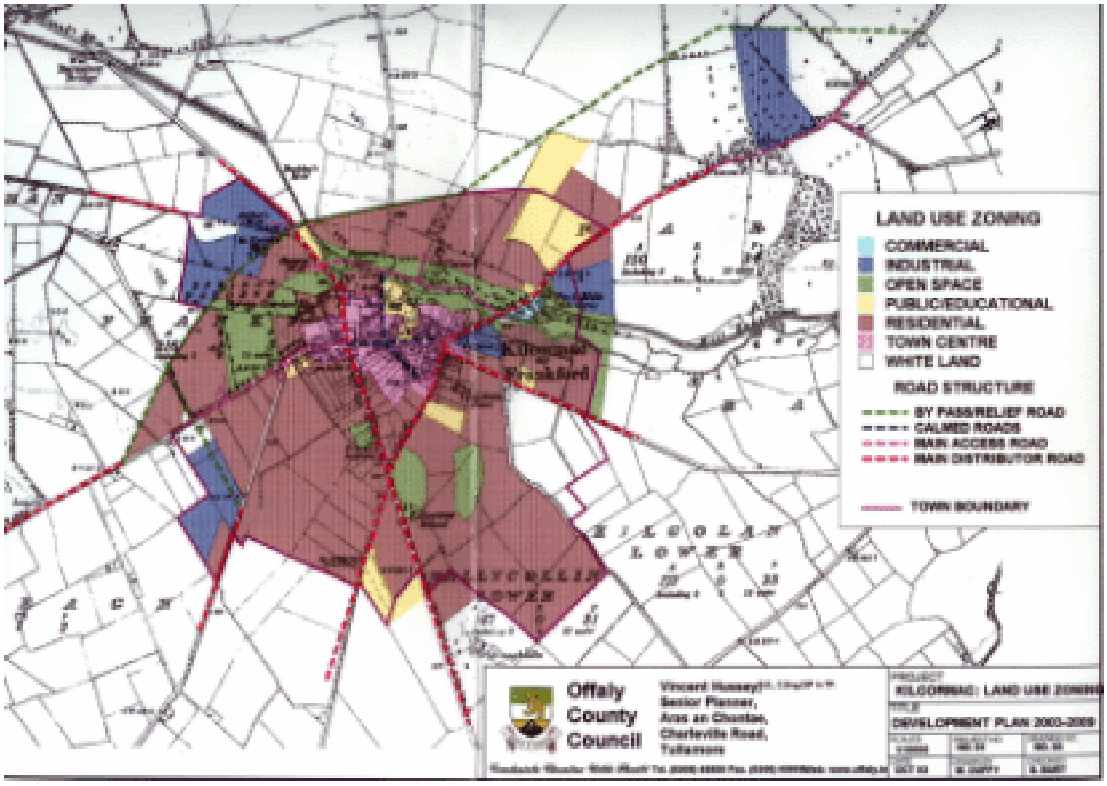

Figure 0-1 Kilcormac Area Plan

The Local Area Plan

The lack of success of local area plans is due to their large scale and very general nature comprising broad zoning and density standards. Planners ignore economic and physical realities on the ground such as the crucial issue of landownership to protect their objectivity. The plans have very little three-dimensional or visual content - design quality does not figure as an aspiration but is left to the planning control process. The preparation and adoption of local area plans does not necessarily promote development either. Planning officials bemoan the fact that landowners are very happy to participate

in local area plans but are then content to sit back and passively enjoy rising land values while refusing to take development risks themselves or sell to others that would. As a result, planners and councillors end up over-zoning villages and towns (often by a factor of five) so that at least some landowners will respond quickly to the development opportunity and that competition between them will prevent too high an increase in land values. The result on the ground is sporadic development of isolated sites often at some distance from the village or town centre. Where development pressure is high from commuters, the village can expand to such a size and at such a rate that it destroys local identification and any semblance of rural quality it might have had – such as Rochfordbridge in Westmeath. However, area plans are absolutely necessary to enable Part V of the 2000 Act to come into force. Part V only applies to land designated for housing and requires the landowners to transfer 15% of housing sites (on a site of five or more housing units) to the local authority for social and affordable housing. Without designation, this requirement can be waived. This happens routinely, for villages which have no specific zoning designation. Moreover, a full range of housing types, value and tenure is important for socially sustainable settlements

The Village Design Statement

Another planning mechanism, the village design statement, piloted by the Heritage Council in partnership with a number of local councils, has produced village plans which are laudable in two major respects; they are the result of a highly participative process and they recognize the unique local building types and styles and the value of local features and amenities.

> *A VDS can highlight the village's special features and inform designers as to what local people consider the main ways in which the new can harmonise with the old to add to that special character. A "Village Design Statement" is a non-statutory simple but effective design guidance document, which aims to reflect the visions and desires of local people. The "Village Design Statement" is a pro-active approach to enable local communities to participate in the management and shaping of change by providing design guidance, which demonstrates how the distinctive local character of these villages can be protected and enhanced, and how new development can be sensitively accommodated whilst respecting this local character.*[i] *Heritage Council*

Although they contribute enormously to visual literacy and set high standards for conservation of the existing built and natural environment, they offer only very general advice as regards the new development. It is too early yet to assess whether village design statements will lead to the better preservation of village heritage but it is likely that in the case of new development, they will have no more positive effect than local area plans.

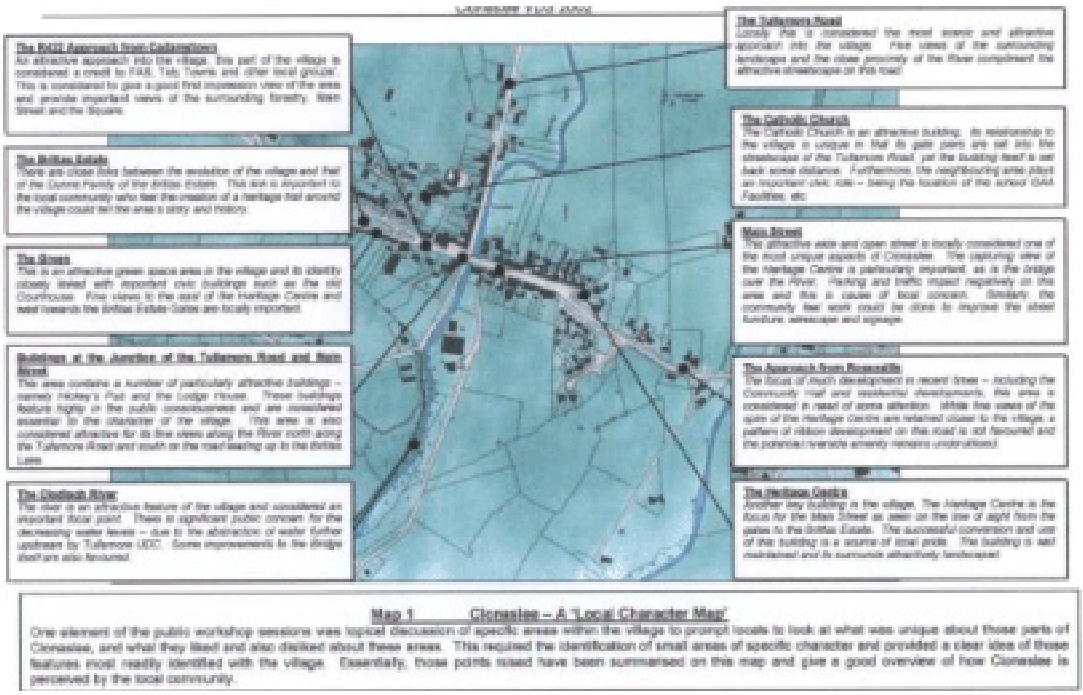

Figure 0-2 Clonaslee Co, Laois Village Design Statement

Both area plans and design statements lack an economic understanding of the development process within a market economy and ignore existing resource, power and capability structures which constraint development or direct it in particular directions. That is why we believe they are ineffective vehicles to deliver sustainable village development in rural areas. But there is a third kind of plan model we can consider, that of the framework plan.

The Framework Plan

The framework plan is an evolving concept that has no formal statutory authority. Dick Gleeson, senior planner in Dublin City Council has pioneered the framework plan in the context of promoting coherent high quality urban renewal. Two examples are the Heuston scheme as an example of a dense new mixed development and Inchicore framework plan for upgrading an existing area with mainly infill development.

Figure 0-3 Heuston Gateway

In this model, the crucial landownership pattern was mapped and the financial aspects of existing and proposed development were examined in detail. The framework plan was given a high urban design input both from the planning department itself and from contracted design consultants. Stakeholders were consulted fully but the main driver was Dublin City Council planning department. The framework plan is a very practical statement of intent very similar to the information content of an outline planning permission. New access roads and public spaces are clearly laid out and required public amenities and infrastructural elements included. The use categories and allowable densities are expressed directly in three dimensional block plans (or design coding) rather than disembodied figures and ratios. Important views and focal points are described fully.

The power of the framework plan concept lies in the persuasiveness of the financial argument and the attractiveness of the vision. In the first case, full costs are drawn up of the public space, services and amenity elements that the landowners will be required to provide as part of the plan. A valuation exercise by DTZ Sherry Fitzgerald then outlines the value added to the properties by virtue of the addition of these elements ad the fact that they are part of a coherent urban design. It is not difficult to show that, although the extra cost may be considerable, it is more than compensated for by the added sales or rental price for the finished buildings. The framework plan does not have to be passed by the city council, as it need not be a statutory document. Experience demonstrates that it carries considerable weight as planning control officers and an Bord Pleanala take it positively into account when they make their decisions. Kilkenny City Council has also adopted the framework plan model to plan the extension of the city.

> *The proposed plan describes how the development of the lands will be made contingent on the necessary community facilities, roads and other infrastructure being in place in advance of, or at the same time as new housing. Standards for the provision of recreational facilities (to be properly landscaped and incorporate play areas etc.) are set out. The plan will be accompanied by an Urban Design Guide, which will detail how a high quality urban environment will be achieved.* [ii] *Kilkenny County Council*

Historical Precedence

The framework plan process is very similar to that which produced the town plans of many fine villages prepared jointly by the landowner and principle tenants in the 18th and 19th centuries. These simple plans did no more than laid out the main streets and market place and identify sites for important public buildings. The landlord put in the roads, built the public buildings, and divided up the land into convenient building plots. The tenants took long ground leases and constructed buildings on the plots according to an architectural template.

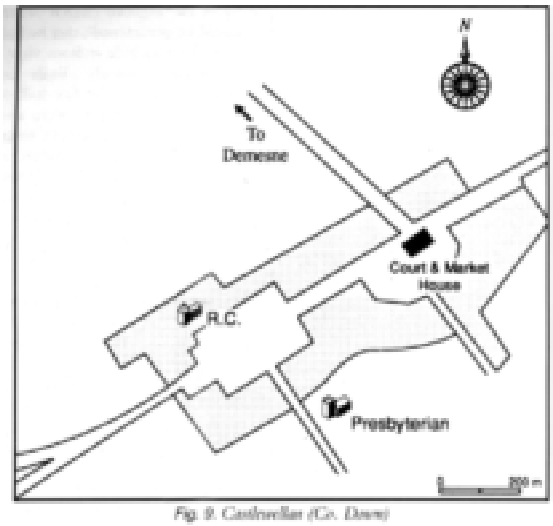

Fig. 9. Castlewellan (Co. Down)

Figure 0-4 Castlewellan

This was a very specific Irish village development model which differed significantly from English village development where the landlord undertook all construction and offered very limited leases thereby retaining far more of the interest in the land to this day.[iii] Detailed but modest framework designs with villagers driving the process better approximate the model above rather than local area plans prepared at an arms length by the local authority.

Section 48 and 49 of the 2000 Planning and Development Act

The 2000 Planning Development Act contains a very important section - Section 49 that provides the key to the implementation of a framework plan. This section empowers the local authority to impose extra levies over and above the normal development levies in specific instances.

> *Supplementary development contribution schemes.*
> *49.—(1) A planning authority may, when granting permission under section 34, include conditions requiring the payment of a contribution in respect of any public infrastructure service or project-*
> *(a) specified in a scheme made by the planning authority (hereafter in this section referred to as a "supplementary development contribution scheme",*
> *(b) provided or carried out, as may be appropriate, by a planning authority or, pursuant to an agreement entered into by a local authority, any other person, and*

(c) that will benefit the development to which the permission relates when carried out. [iv]

In essence, Section 49 provides the means for the local authority to recoup the total costs of infrastructure, services or amenities which are put in especially to benefit a particular bounded area – such as the area contained in a framework plan. These levies are payable on commencement of any development requiring planning permission within the designated area. Section 49 can even be used to recoup the cost of making the framework plan such as surveys and architects, engineers, valuers and quantity surveyors' consultancy fees etc. That fact is important as the civil service jobs embargo and the limited discretionary budgets of most rural county councils make it impossible to prepare plans for every village and town within their remits, which is required.

No rural council has used the framework plan/Section 49 mechanism so far to ensure the sustainable development of its smaller settlements although it is growing in acceptance in Dublin and other cities. This report suggests that it is particularly suited to rural locations because of the opportunity it affords to redress the fragmentation of landownership which stifles village development, to install state- of-the-art water and waste treatment systems and secure renewable (and even community owned) energy supplies. A secure energy supply will increase in importance as fossil fuels decline and will feature equally with drainage and waste treatment installations in locating development and adding value to land.

New Development Process

The process of village development then would change from incremental one-off house development in the rural village hinterland or the sudden unplanned development of private or public housing estates at the edge of the village for which there is insufficient services to a more controlled process as follows; -

- The community of a village in decline or under potentially damaging development pressure would request a framework plan for the village.
- A revolving fund would be available to manage the upfront costs of the plan and the infrastructure development that follows.
- The local authority would contract a team of consultants directly or approve a set chosen by the community and would partner the team in the preparation of the plan.

Design Phase

The team would establish the landownership pattern for the village and potential local energy resources much as this report has done for Cadamstown and Ballyboy. However, the plan should include more detailed surveys and local consultation than informed this report, limited as it was by time and resources. Discussions with landowners would establish who was in a position to develop their land or who was willing to sell to those who could within a three-year time horizon. These identified lands would be prioritized

for access to new infrastructure and investment if proper planning and sustainable development considerations were satisfied.. New access roads, parks, water, drainage and waste treatment facilities would be located, sized and costed. The community would decide where shortfalls existed in local amenities and services and their provision would be fully costed also. A three dimensional plan would show the new roads, squares, parks and the heights, shapes and uses of the buildings which enclosed them. A design guide would be developed which reflected the local building vernacular and the distinctive qualities of the local settlements into account. Finally the potential for renewable energy generation and the specification of works to develop them outlined and costed. The total costs would be apportioned fairly and equally over all the landowners benefiting and the cost of the development – less what would have to be paid anyway under the general levies and contributions (under Section 48 of the 2000 Act and part V) - established. The framework plan would be sufficiently detailed to provide the basis of a valuation exercise to compare the site value of the finished development under the plan with its current site value. This should show that the extra costs were more than recouped both through the extra development possible with proper infrastructure and the higher value created by the quality environment and better services and convenience.

Implementation

The plan preparation process is not unlike that useed by many urban authorities except for the energy infrastructure component. However, an important extra innovation is required to fully and equitably release development potential in many rural villages. Landowners are often older and have little experience of development and building nor the appetite for the borrowing and the concomitant risks involved even where the benefits are well established. The very real fear that full cooperation from all landowners will not be forthcoming or that critical access to lands will be denied cannot be ignored. The local authority could overcome this potential impasse by taking on the role of developing the public or shared elements of the plan under building leases from landowners, thus managing the critical phasing and enabling the landowners to sell fully developed sites subject to the agreed Section 49 levies. The local authority would use its powers to clear title and/or acquire key land where the community and authority as a whole thought it was necessary for the benefit of the wider community.

Again, in the very likely event of lack of in-house resources, the local authority could enter into partnership with an agency – preferably a not-for-profit – to take on this role. Such a dedicated agency could quickly gain experience that could be applied in further locations in different counties. Implementation costs would be recouped as before under Section 49.

Landowners could build on the fully developed sites or sell them singly or in groups to local builders. The community would have full control of the sale price and to whom it sold the houses and sites. This would ensure that locals were never priced out of their own area despite the high values created and that key skilled people could be attracted (mechanics, teachers or nurses for instance).

There is one very important further safeguard required for this process to succeed; it is that the landowners affected by the plan have to agree to develop within a short specified

period of time. This is because the special levies can only be recouped at the point of commencement of construction and considerable financing costs could accrue if this was delayed. Alternatively, if the implementation was fully funded by a revolving fund, delay in development and thus payment would also limit the numbers of communities that could benefit. This would not be acceptable when many communities in declining rural areas are desperate for help.

Range of Special Levy Costs

The special levies adopted for the Heuston development amounted to approx. €11,000 per apartment unit and €11 per m2 for office space. The value created by the public spaces and better transport links proposed by the framework plan made this cost a good deal for the site owners. The Kilkenny Western Environ Framework Plan added extra costs which brought the total levies per residential unit to circa €15,000. Landowners were very happy to pay this as the plan eliminated a large amount of development risk and planning uncertainty. It is worth noting that the City of Basle in Switzerland imposes a levy of 50% of the total increase in value of the land following planning permission, which includes the value of all contributions to the municipality such as open space or social housing requirements. Zurich developers are calling for it to follow suit.

It might be argued that an increase in levies, whether special or benefiting the site, might increase the cost of housing to first time buyers when the cost is passed on. This is a common misconception arising from the examination of the instance of a house site that is already bought. Where the site is in agricultural use, the extra cost of the levy would be factored in by the buyer and the amount paid for the land reduced by that amount. If the works that the levies paid for did not add extra value to the site, which would not be the case under a good Framework Plan.

Worked Example

A farmer owns an acre of land beside a small village. It has value as two half acre sites with planning permission - let us assume that there are no problems with traffic, drainage or environmental protection. The farmer might get €50,000 per site. This has to be set against the fact that his daughter may want to build a house in the future and selling sites on the best located land might prevent that outcome. The price of the sites is set by the market and already takes into account the usual local authority development levies. for the figures below are those for Offaly County Council;

Table 1 – Level of Contribution – Residential & Industrial/Commercial Development

Class of Infrastructure		€per residential unit	€per m_ of floor area industrial/commercial
A	Open Spaces, cultural, recreational and community facilities, amenities and landscaping works, town and village improvement – including land acquisition.	€530	€7.50
B	Roads, car parking, infrastructure to facilitate public transport, cycle and pedestrian facilities	€530	€11.50

	and traffic calming measures – including land acquisition.		
C	Wastewater treatment facilities, sewers and drains – including land acquisition.	€2110	€6.50
D	Water Treatment Facilities & Water Mains – including land acquisition	€1580	€6.50
	TOTAL	€4750	€32

The farmer would not have to make a contribution under Part V because the development consists of less than five houses. So the total sum he can expect before fees etc is €100,000.

Now let us look at the same scenario but with a framework plan for the village. As for Cadamstown, the plan contains a state-of-the-art sewage treatment plant, new parks and nature areas and a new community-owned business centre. It also shows that the rest of the village will be developed in a co-ordinated way and to a high architectural standard. On top of all that, a new minigrid will be available to provide cheap hot water and secure and price-capped electricity supplies. The plan shows the acre site can accommodate 6 new dwellings instead of two but one site must be for social housing as it exceeds the 5-unit threshold. Nevertheless the farmer now has the prospect of the sale of five sites. And these sites are worth more because of the improved amenities. They are valued at €80,000 each before levies. But there is a price, a Special Levy of €10,000 per site. So as the buyer of the site knows they will have to pay this special levy as well as the ordinary levy when they begin to build, thus the price they are willing to pay is reduced to €70,000. Five times €70,000 is €350,000 which is a 250% increase in what the farmer would have got for his two sites under the first scenario. And what is best about the deal is that he has the option of holding on to one site for his daughter for when she is ready to build. But he must agree to agree to sell quickly or to pay the levy on behalf of the eventual buyer, which he is happy to do, as he believes it that is a more than a fair deal.

Wider Benefits

Finally, it is worth looking at what benefits the wider village community may gain each scenario. In the first, the sale of two undeveloped sites, the farmer will sell to the highest bidder. In an area such as Cadamstown, well sited for walking recreation, the highest bidder might well be for a holiday home. Second homeowners are not great spenders in the local area even when they are in residence and they will take the water connection that might have supplied a full time family. But it is far more likely that the site would be sold to a local who cannot afford to buy a house in Birr or Tullamore where his work is and will commute there everyday and do the shopping too. Even with the best outcome of two new families with young children, the extra demand will be unlikely to bring back the primary school or keep a local a crèche going. So taken all in all, there would be no great gain for community.

In the second scenario under a framework plan, the six houses along with the others supported in the same way in the village will begin to make a real difference to spending power in the local economy. Maybe it will be worthwhile for one of the new residents to quit their job in Birr and set up as a hairdresser in the Village. Furthermore, the secure

electricity and cheap heat will attract a number of new businesses. For instance, the biomass plant will need woodchip, which will make work for forest harvesters; the cheap hot water may attract a laundry; the secure location and electricity supply may attract a computer back up archivist. It may be worthwhile to start a carpool, minibus cooperative or attract better public transport provision so people can get rid of the second car.

Even farmers with sites for sale within the hinterland of the village will get a better price because of the proximity to an attractive and vibrant settlement if there are no drainage, traffic or landscape or environmental constraints. And then, there are the environmental benefits, less road traffic, less acidification in rivers because of the utilization of thinnings from the conifer forests or less nitrogen on the groundwater because less raw slurry and artificial fertilizers is applied to the land. In addition, there are national environmental benefits listed elsewhere in this report.

Ecological Construction and Regulations and Standards

The delivery of significantly higher ecological and energy savings in use for construction in Ireland is more than a simple technical design exercise; there are also many regulatory hurdles to overcome. The building regulations govern how buildings are constructed not the planning system as most assume; local authority planners are concerned about the form and external appearance of the buildings for the most part and would have little expertise in some case to assess construction methods.

Building Regulations

The building regulations are the chief regulatory system governing building standards in Ireland. They set minimum standards of performance and provide a set of guidelines for construction, which are deemed to achieve these standards while leaving some flexibility for new construction systems to be recognised separately under a self-certification system unique to Ireland. Part L of the Regulations has been revised recently to set a higher standard for energy efficiency for housing. The standards set are necessarily conservative and establish easily achievable targets using the currently dominant construction methods. No standards have been set for non-residential construction. The building regulations that deal with ventilation standards prioritize human health factors and address energy efficiency to a lesser extent. Air tightness is a very important factor both for health and energy efficiency and without modern technology or carefully considered material specification, these respective objectives can be at odds with each other. Other parts of the building regulations deal with waste, fire. Etc. The building regulations do not include standards for Green House Gas (GHG) emissions although energy use is generally a good proxy for them. There are no regulations covering the resource use *per se* nor bio-diversity or social and economic equity issues.

Certification systems

Certification is separate to the regulatory environment but is essential and integral to it. Certification of building materials and components is under the authority of the National Standards Authority of Ireland, NSAI. It consists of product certification; verified tests that the product is fit for its intended use. These standards and certifications have been

undergoing a process of EU wide coordination under the Construction Products Directive. Separate to the certification of particular construction products, a national certification is required for entire construction systems such as a composite wall or roof construction. This form of certification is the Irish agrément certificate and it tests composite construction systems for the very particular climatic conditions experienced in Ireland. However, existing conventional cavity masonry construction does not have, nor does it require, an agrément certificate because of its long history of use in Ireland. Many new construction systems do not have agrément certificates but instead rely on 'self certification' by design professionals for the design and similarly, certification by the contractor for the built quality and performance. Certification gains its effectiveness through the legal systems for property transfer and insurance. Lending agencies require that the property is insured before mortgages or other finance are advanced against it as collateral.

The National House building Guarantee Scheme

The NHBGS (National House Building Guarantee Scheme) promoted by the Construction Industry Federation has provided the bulk of the insurance guarantees to financing agencies for housing until very recently. The NHBGS insures conventional construction meeting building regulations standards and to date has been very reluctant to accept architects' certificates in support of new construction systems or the inclusion of new products in conventional construction systems. Recently Premier Guarantee has stepped in to provide insurance where the individual products have certification and where a suitably qualified and indemnified professional certifies the non-conventional aspects of the construction. This new route to insuring buildings has had a liberating effect on construction innovation and the adoption of more sustainable building methods but is not sufficient in itself to create the conditions for widespread adoption of best practice.

Department of Heritage Environment and Local Government : Durability Standards

A further barrier to widespread adoption of new methods is the 'durability test' required by the Standards Section of the Department of Heritage Environment and Local Government for any form of social housing grant aid or for any form of tax exemption or reliefs for housing. This requirement effectively demands inter alia, that all construction must be conventional (cavity masonry construction) meeting building regulations requirements or must have an Irish agrement certification for the precise building construction systems employed. Thus, the housing sector that in other EU countries is typically the most innovatory is held back in Ireland by self-imposed restrictions.

Energy Performance Rating

Energy performance rating is a relatively new concept in Ireland and promises to provide a major boost to sustainable construction. The Energy Performance of Buildings Directive is driving the adoption of an energy rating system for Ireland. The new energy rating systems is likely to build on the Home Energy Rating model and may not include performance ratings for GHG emissions, an optional element under the Directive. It does not prescribe how the house construction can or could meet a high energy rating as its

emphasize will be on outcome or performance. This is a welcome flexibility and a necessary additional regulatory safeguard as some evidence has shown that prescribed construction systems do not meet regulation energy targets in practice due to operator skill weaknesses and site management problems. The proposed energy rating system will help link user benefit to higher energy specification and may deliver a premium to the producer of more sustainable design, materials and products that will provide impetus for change.

The construction system proposed for the Cadamstown Project, hemp/lime composite around a timber frame, is very innovatory and will certainly not satisfy the NHBG Scheme nor can it prove it can pass the DoHELG durability standard, as it does not yet have an Irish agrement certificate. The ENLIVEN design team believe it will more than satisfy building regulations standards and will achieve the highest rating under any energy performance standard for housing. The new Irish rating system for new housing construction is being formulated at this time and it is likely architects will have to take it into account for planning applications sometime in 2006[v].

The ENLIVEN building design team will work closely with the Royal Institute of Architects of Ireland (RIAI) who are leading the 18 month Saor Project which will help overcome some of the hurdles to innovative sustainable construction outlined above. Saor, funded by the EPA, will establish an ambitious but achievable sustainability (Saor) standard for domestic construction, demonstrate construction systems that achieve it, and develop an open (non-proprietorial) certification for the systems, and disseminate them widely in the sector. Saor has plans to develop a specification for an agrement certificate application for 'Breathing Wall Timber Frame' construction and it is hoped, an 'Hemp/Lime' construction specifically detailed for Irish climatic and working conditions.

It is vital that this work is taken forward and funds raised to complete the certification process. While the Cadamstown project will proceed anyway underpinned by the Premier Insurance scheme and professional indemnity insurances, no social housing or any housing which might otherwise qualify for a grant of tax aid can be constructed in either novel construction system. Nor will it be possible for ordinary people, without a skilled and professionally indemnified architect to use hemp/lime construction for self build. That would be a serious loss as hemp/lime has so many benefits for GHG reduction, requires much lower embodied energy than conventional concrete and frame construction and provides a very valuable new crop for farmers in many rural areas.

Part V

This section cannot be completed without a discussion of the role of Part V of the 2000 Planning and Development Act that aims to deliver affordability in housing. Developers have the option of paying the local authority a sum of money in lieu of the provision of land. This situation frequently arises in rural areas of there is not a demand – as evidenced by the housing list- for social or affordable housing in the immediate local area. This report wishes to make the case that affordability pertains to more than the level of mortgage or rent payments; it also covers other unavoidable costs of running the home especially the heating costs. Fuel poverty is a serious problem in Ireland; that is

where the tenant or owner cannot afford to heat the dwelling to a comfort level most would consider the minimum for comfortable living. This is because of poor insulation and lack of efficient heating systems. Many rural houses still rely on the open fire supplemented by expensive electric radiant heating. We suggest that instead of the sums raised under Part V being used elsewhere in the county to provide social housing, they be made available to upgrade existing local authority and private housing of people with limited means in the immediate area to an acceptable standard.

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[i] Heritage Council website, **Village Design Statements for Ballisodare and** Grange, Co. Sligo (Pilot Project), 2001http://www.heritagecouncil.ie/planning/index.html

[ii] Proposed Local Area Plan for the Western Environs

[ii]http://www.kilkennycoco.ie/publications/council_publications/default.aspx?id=572

[iii] Urban Improvement in Provincial Ireland 1700-1840, Graham and Proudfoot, Irish Settlement Studies No.4 1994

[iv] Irish Statute Book Database

http://www.irishstatutebook.ie/ZZA30Y2000S48.htmlhttp://www.irishstatutebook.ie/2000_30.htmlhttp://www.irishstatutebook.ie/ZZA30Y2000S50.html

[v] Consultation Document: Draft Action Plan for the Implementation of the EU Energy Performance of Buildings Directive in Ireland. April 2005. www.epbd.ie