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One Planet Development: opportunities and barriers

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Abstract

In recent years in Wales, Low Impact Development (LID) has been recognised as providing a valuable contribution to the search for more sustainable models of development, and in 2010, the One Planet Development (OPD) planning policy was introduced to 'take forward Low Impact Development principles in the Welsh context' (Welsh Assembly Government, 2010). The limited amount of OPD applications approved to date demonstrates a continued cultural resistance to LID, whilst the ad hoc self-build approach and use of local and unprocessed materials has resulted in further tensions with other regulatory frameworks. With the help of several real life examples, this paper asks what opportunities the OPD planning policy presents to those wishing to live sustainably and needing to make do with limited resources. A number of barriers to LID are identified, with reference to these examples. The study finds that cultural differences between those responsible for enacting and enforcing regulatory systems and LID practitioners are the root of many of the barriers to LID. The paper concludes with some suggestions for how this gulf can be bridged.

Keywords

Sustainability; environment; Low Impact Development; LID; One Planet Development; OPD; making do; planning; resilience.

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Introduction

LID and permaculture, which are closely related, both rely on a close connection between people and resources, many of which are derived from the land. This requirement for land, combined with historic cultural differences between the LID community and mainstream consumer culture have resulted in the location of many Low Impact Developments in a deep rural setting. This has inevitably meant that LIDs have been at odds with the model of sustainable development sanctioned by planning orthodoxy. Permaculture principles call for a rich and adaptable interplay between difference activities and land use, which is incompatible with the rigid zoning imposed by planning law. Meanwhile, the ad hoc self-build approach and use of local and unprocessed materials has resulted in further tensions with other regulatory frameworks.

In recent years in Wales, LID has been recognised as providing a valuable contribution to the search for more sustainable models of development (University of the West of England & Land Use Consultants, 2002; Baker Associates, 2004), and in 2010, the 'One Planet Development' planning policy was introduced to 'take forward Low Impact Development (LID) principles in the Welsh context' (Welsh Assembly Government, 2010).

Despite the Welsh Government's recognition of the opportunities for OPD to provide models of affordable, sustainable development, the limited amount of OPD applications approved to date demonstrates that there continue to be significant barriers preventing One Planet Developments from being realised. In order to find ways to overcome these barriers one needs to address the reasons for continuing cultural resistance to LID. To understand how to achieve this, we need first to make a study of the history of LID and permaculture.

Low impact development

Low Impact Development (LID) is the term commonly used to describe an approach to building and living that seeks to use natural and local resources wherever possible, and minimise reliance on outside providers. As a movement, it has a clearly identifiable heritage that extends back to the counter-culture of the late sixties and early seventies. It has historically attracted people who see consumer capitalism as one of the main causes of the social and environmental problems faced by society and, as a response, place great value on a combination of self-reliance and local cooperation as ways of reducing dependency and

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building resilience in communities. Low impact development can also be seen as part of the back-to-the-land movement, which has manifested itself in different ways across the developed world. Pickerill and Maxey identify LID as 'a radical approach to housing, livelihoods and everyday living' that offers valuable insights into how societies can adjust to more sustainable models in the future (Pickerill & Maxey, 2009). Halfacree countenances against overstating the associations between counterculture and back-to-the-land movements, which, he argues is 'a very diffusive concept, whose borders blur into both more 'traditional' forms of agriculture and more 'bourgeois' forms of counter-urbanisation' (Halfacree, 2007). He also points out that gaining a livelihood from the land is challenging, and so ideological commitment to reruralisation has to be accompanied by hard work and skills. John Seymour was instrumental in both inspiring back-to-the-landers and providing them with practical knowledge (Seymour, 1976), and his legacy continues in west Wales, where he lived for many years. In recent years, the principles of permaculture have gained in popularity, often supplementing the traditional skills of smallholding.

One of the key figures of the Low Impact movement, Simon Fairlie, has campaigned for many years for changes to the planning system to allow those with genuine interests in contributing to the rural economy to live near to where they gain their livelihoods. In fact, he is credited by many for coining the term Low Impact Development when he published his book of the same name in 1996. In this book, he defined a Low Impact Development as 'one that, through its low negative environmental impact, either enhances or does not significantly diminish environmental quality' (Fairlie, 1996). Fairlie is an editor of The Land Magazine and a founding member of Chapter 7, which provides planning advice to those in rural areas struggling with unsympathetic planning regimes. Chapter 7 is named after the synonymous chapter from the Agenda 21 report from the UN Rio Conference of 1992, which argued for more equitable and sustainable methods of land-use and settlement planning and management (United Nations, 1992).

Although LID has often been viewed with suspicion by mainstream society, a number of factors are causing the movement to grow in popularity. LID is becoming relevant to more people due to changes both within the movement and in wider society. The economic turbulence since the crash in 2008, combined with an increasing awareness of the urgency of the environmental crisis, have caused many to question the value that they had previously placed on consumerism and to look for alternative ways of meeting their needs and aspirations. At the same time, many significant players in the LID movement have made efforts to engage local communities and others and to promote the benefits of low impact living. In particular, Tao Paul Wimbush has been instrumental in raising the profile of LID by envisioning the Lammas project, and in particular the Tir y Gafel ecovillage near Glandwr in Pembrokshire. His

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book, 'The Birth of an Ecovillage' recounts the effort and time it took to counteract a resistant planning culture before it was approved in 2009 (Wimbush, 2012).

The design approach of permaculture

A permaculture approach is often adopted on land-based LIDs, as it provides useful design tools for food production and resource management on a small scale. Permaculture is a term that was invented by Bill Mollison and David Holmgren in the 1970s to describe an approach to sustainable design, land management and food production that aims to work with natural process to maximise the benefits to people without the need for continual inputs (Mollison & Holmgren, 1978; Mollison, 1979). Bill Mollison defined the term in his book, 'Permaculture, a Designers Manual':

> Permaculture (permanent agriculture) is the conscious design and maintenance of agriculturally productive ecosystems which have the diversity, stability and resilience of natural ecosystems.
>
> (Mollison, 1988)

From the outset, Mollison and Holmgren chose to maintain permaculture as a structured design methodology. Individual national Associations regulate the teaching of permaculture and ensure that courses follow a prescribed structure. One of the main aims of these courses is to encourage an organic, iterative approach to designing and adapting one's environment. In order to facilitate clear communication of the methodology, twelve key Permaculture Principles are taught on all the courses. Three of the twelve demonstrate the importance placed on an iterative approach to design. They are as follows: 'Observe and interact'; 'Apply self-regulation and accept feedback'; and 'Creatively use and respond to change'. Therefore it is evident that adaptation to changing conditions is at the core of the permaculture approach. The reasoning is that by mimicking the cyclical processes in nature, the permaculture designer intends to benefit from the inherent efficiency of the organic world. Aside from the design courses, there are a wealth of books that give advice to those wishing to follow permaculture principles in different settings. Some focus on food production and land management (e.g. Whitefield, 1993; Law, 2001; Crawford, 2010), whilst others aim to encompass a wider context of sustainable living (e.g. Bell, 1992).

Pickerill and Maxey argue that the flexibility inherent in LID and permaculture 'teaches us not only that we can survive changes in the environment, but that it is a process of constantly evolving and adopting to our changing needs and climatic uncertainty' (Pickerill & Maxey, 2009). There has however been criticism that many of the claims of

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permaculture are not backed up by empirical evidence. Peter Harper, Research Director at CAT challenges the claims of some permaculture advocates of its ability to create abundant productivity, arguing that it has 'entirely oversold the idea, claiming to have found the Holy Grail of a low-input/high-output system' (Harper, 2013). He also questions the relevance of permaculture methods when applied outside of the field of food production: 'for some people 'permaculture' is a generic term for sustainable living, giving another whole set of shifting, fuzzy meanings' (Ibid.). Harper does however recognise the importance of permaculture when viewed as a set of pragmatic rules of thumb, and suggests that since the conception of permaculture, Holmgren has followed a rigorous, evidence based methodology (e.g. Holmgren, 2011), while Mollison has not provided adequate evidence to back up his claims.

Despite some of the criticisms levelled at permaculture, as a methodology it does itself advocate that the practitioner gather evidence and respond appropriately. Any system that is based on low inputs of energy or other resources needs a deep understanding of the processes involved. The principles of observing, reflecting on what one sees and responding appropriately engender the type of long term thinking lacking in much of today's industrialised agricultural system (United Nations Conference on Trade and Development, 2013).

One Planet Development: a planning policy unique to Wales

Since the introduction of formal development control in 1947, the planning system has needed to act as a buffer to uncontrolled and unsustainable development in the countryside. It has had some success in this goal, but has been far less successful in allowing development that would support the economy and resilience of rural areas.

In 2002, the University of the West of England and Land Use Consultants carried out research into LID in Wales, and produced a report 'Low Impact Development - Planning Policy and Practice' (University of the West of England & Land Use Consultants, 2002). The research was funded by the Countryside Council for Wales, the Welsh Assembly Government, and Pembrokeshire Coast National Park Authority. This was followed in 2004 by a report by Baker Associates, which built on this research, but was focused specifically on 'issues raised by the possibility of developing a LID policy' (Baker Associates, 2004). The Baker report identifies the reason for a fundamental tension between the goals of LID and planning orthodoxy:

> At the heart of the difficulty posed by the consideration of LID and planning is this. The planning system has a fundamen tal role in the promotion of sustainable development and

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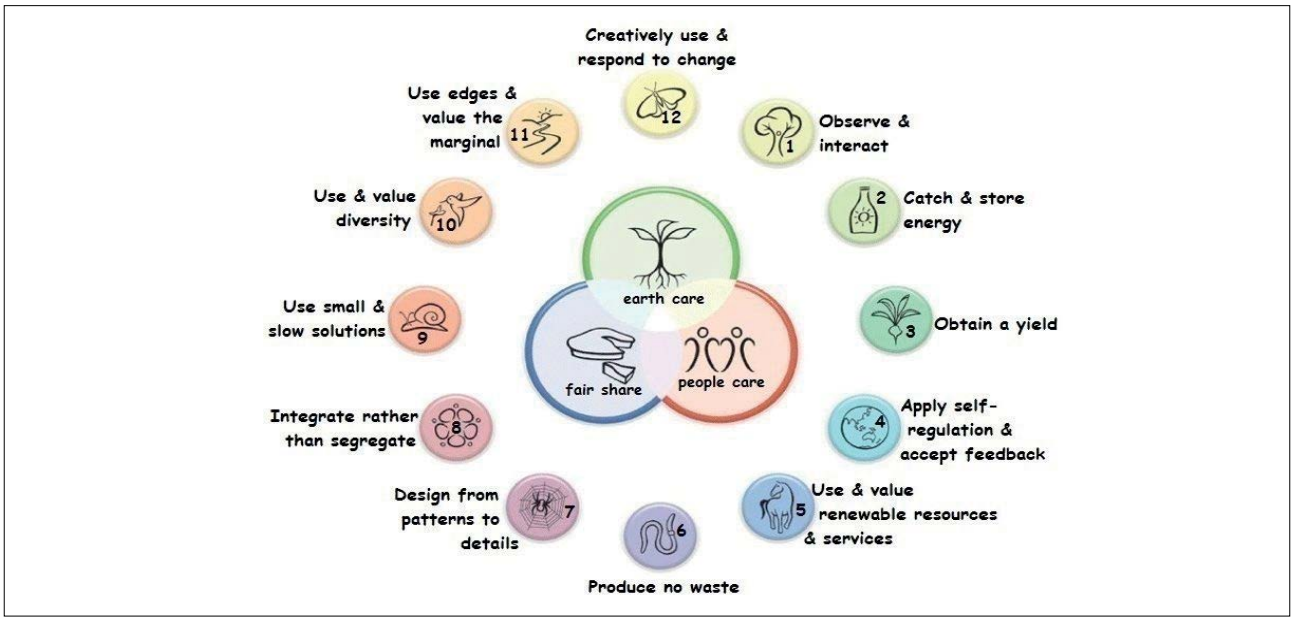

Figure 1.

The twelve permaculture principles

Source: https://nurturegreen.wordpress.com/2013/09/11/permaculture-principles/

Figure 2.

Photos from Nant-y-Cwm farm, a smallholding in Caerphilly — the first One Planet Development to be granted full permanent planning permission in April 2014.

Source: http://www.oneplanetcouncil.org.uk/resources-images/

Figure 3.

Simon Dale and Jasmine Saville's earth-sheltered home at Tir y Gafel, which was the subject of extensive disputes with local authority building control department. Photos: Simon Dale

Source: http://lammas.org.uk/gallery

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> LID is presented as a form of sustainable development, yet LID encompasses elements, notably housing, that are most fiercely resisted in the open countryside by use of the plan ning system, and with a concern for sustainable development cited amongst the justification for doing so. The task set for this project by the client and Brief is to find a practical way to resolve this paradox.
>
> (Baker Associates, 2004)

The report concluded that a policy framework for allowing LIDs in the open countryside could be developed, as long as rigorous tests were met. In response to the recommendations in this report, Pembrokeshire County Council introduced Policy 52, which related specifically to LID, in their Unitary Development Plan (UDP). It was under this policy that Tir y Gafel, also known as Lammas, was approved on appeal in 2009.
Low Impact Development has now been recognised by Welsh planning law in the form of the One Planet Development policy in TAN6 Planning Policy document, which came into force in 2010. TAN 6 states:

> One Planet Developments take forward Low Impact Development (LID) principles in the Welsh context. One Planet Development is development that through its low impact either enhances or does not significantly diminish environ mental quality.
>
> (Welsh Assembly Government, 2010)

The policy owes much to Fairlie's development of the LID model. In fact this definition of a One Planet Development (OPD) is almost identical to Fairlie's of a low impact development.

In planning terms, the OPD policy is highly significant, as it is the first national policy for LID, allowing development, including the building of new homes, in the open countryside. However, the policy sets stringent demands on those wishing to submit planning applications for One Planet Developments. Initially, very few applications were approved under this policy, partly because there was no technical help on how an applicant should go about compiling an application, or how a planning officer should assess one. In 2012, the release of the Practice Guidance addressed this weakness, and the number of applications and approvals has been increasing steadily. In early 2014, the One Planet Council was formed, as an independent voluntary body with the aim of promoting and supporting One Planet Developments, and soon after this the first full planning permission for and OPD was granted to Nant-y-Cwm, a smallholding in Caerphilly.

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Living within one's means: theory and practice

> Around ten years ago we became aware of the significant numbers of people in our country, who were opting to live very simple and sustainable lives. People who were living within their means, both financially and ecologically.
>
> (Dale & Saville, 2011)

The concept of living within one's means can be understood in both individual and collective terms. A wealthy person can live within their financial means but if their lifestyle is based on a high level of consumption and resource use it would be beyond the environment's means to support this way of living if it were replicated across society. Just as individuals need to behave in a way that recognises the constraints of their personal finances, society as a whole needs to work within the constraints imposed by the resource base of the planet in order to sustain itself.

On a day to day level, where a stable income is deemed likely for the foreseeable future, living within one's means is a simple balancing of income against outgoings. However, for those feeling the impact of turbulent economic conditions, the calculation is far more difficult to make as it requires a degree of speculation about the future. Favourable conditions need to be recognised and capitalised on, to improve survival chances during harsher times. Investments in the future may be financially quantifiable or their value may be more difficult to measure, and dependent on a particular set of conditions arising at some point in the future.

One Planet thinking, from which the OPD planning policy draws, is an attempt to apply a global perspective to the principle of living within one's means. It is argued that a typical UK individual is consuming enough resources to require three and a half planet Earths (Thorpe, 2015). Leaving aside the question of the reliability of the data underpinning such an assertion, it is a powerful image that helps one visualise a fact that few would question, that humanity is working its way through the planet's resources at an unsustainable rate. OPD planning applications require the submission of an Ecological Footprint Assessment (EFA). This way of quantifying one's environmental impact uses expenditure to estimate ecological footprint. Although this can only provide approximations based on certain assumptions, it does at least expand the scope beyond the carbon footprinting tools that have previously been the standard metric. Given that climate change is only one of many environmental threats, then despite the practical difficulties in quantifying such a complex measure as ecological footprint, the ef-

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fort to do so must be worthwhile. As Pooran Desai, the co-founder of Bioregional and One Planet Living argues: 'Science tells us we need to reinvent our relationship with the planet - the metrics of ecological footprint and planetary boundaries must be fundamental to our way of life. Now is the time to create new options. We have no option' (Desai, 2015).

For some, low impact lifestyles are more a question of necessity than choice. Those who are unable to access the funds or the credit needed to participate in the housing market, need to provide shelter for themselves as best they can, by making do with the limited resources they have available to them. With making do, necessity is the driver of creativity, instigating new ways of putting the world together. However, the necessity to improvise often places the person making do outside of the conventional parameters of mainstream society and challenges established notions of propriety and acceptable behaviour. When such norms are formalised into planning or building regulations then this inevitably results in conflict.

Conflict with the regulatory framework

Making do involves ad hoc processes that respond to needs as they arise. This organic approach to designing and adapting one's environment is central to the principles of permaculture, as commonly practiced in LIDs, but alien to the culture of the planning system. This is illustrated in Tolle's account of issues experienced at Tir y Gafel, otherwise known as Lammas:

> '…all residents described how they were rethinking their design to feedback from the land, e.g. experiences of frost pockets. But although an evolving process is fundamental to permaculture, every deviation from the planning permission could be revised. Thus, the expected visit of a planning inspector caused much tension.'
>
> (Tolle, 2011)

There is another fundamental cause for conflict between the worldview of the planning system and the requirements of making do. For some decades, the planning orthodoxy has been to rigorously control development in 'the open countryside', which is interpreted as outside a line called a 'settlement boundary' that the planning authority have drawn around everything they deem a settlement. This creates a split land market, with development land having a far greater value than land unlikely to receive planning approval. However, those needing to make do often find it easier to do so away from built-up areas. The low land

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values make the cost of owning or renting the land more affordable, and a degree of clutter that making do entails is often away from public view and tends not to draw complaints from those living in working rural communities. Even in cases where there is an approved dwelling on site, the type of site occupation typical of LID is often incompatible with the premises of the planning system. One example is the notion of a dwelling curtilage which is marked around the 'house', and which is intended for 'amenity' use. This is commonly understood as a garden, with mown lawn, ornamental planting and so on, whilst beyond this would be the 'agricultural land', commonly understood to be fields with crops or livestock. However, few such notions would have much relevance to an LID practitioner, and the idea of clear delineation between these zones goes against such permaculture principles as 'integrate rather than segregate' and 'use edges and value the marginal'.

The other major area of legislation that acts as a barrier to making do is the building regulations. The building regulations play an important role in ensuring buildings create healthy and safe environments, and their role in ensuring the safety of amateur self-builds is critical. However, recent issues that low impact developers have had with the enforcement of building regulations suggest that there is a risk of these regulations jeopardising the viability of low cost self-build. In 2011, Simon Dale and Jasmine Saville of Tir y Gafel wrote about their personal experience:

> It is apparent from our experience, as well as consideration of the wider matters involved, that there is at the very least a tension, if not an incompatibility, between the conventional application of the building regulations and LID.
>
> (Dale & Saville, 2011)

They cited the carrying of water to dwellings in containers, heating water on woodstoves, use of outdoor composting toilets and being off the electricity grid as examples of low impact living that they were practicing that the building inspectors had deemed to be contrary to regulations. However, while such examples might go against the expectations many in an industrialised society would have in terms of comfort and convenience, if the occupants choose to live in this way it is hard to see what justification there can be for them to be proscribed by the regulations. The process of delivery of a low impact self-build should not mean that it is any less safe than a conventionally delivered building, and this necessitates oversight by an building inspector. However, if the regulations that the inspectors are required to enforce place considerable financial burdens on a self-builder, then at some point either they will not be able to carry out the project or they will try to operate outside of the regulatory system. Neither of these eventualities is desirable.

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Conclusion

The difficulties that LID projects such as Lammas have faced in meeting the demands of the regulatory frameworks are derived from the profound difference in world views between LIDers and the writers and administrators of regulations. In her study of Lammas, Katherine Jones identified the types of knowledge required by the planning and building control systems to be based on 'dualism, reductionism and positivism' (Jones, 2015). In this context, the whole system thinking based on permaculture principles as practiced by the residents of Tir y Gafel was not accepted as legitimate by a regulatory system that required knowledge to be 'compartmentalised and reduced to its component parts'.
It is clear that the regulatory system needs to adapt to a more ecological world view, whereby systems, including buildings, are understood to be more than the sum of their parts. However, it is unreasonable to expect, as some residents of Tir y Gafel hoped, that LID will be allowed exemption from regulations that are applied universally to other buildings. The answer instead needs to derive from a continued dialogue between those pioneering new approaches to building and living based on LID principles and those required to regulate them.

Since LID practitioners cannot escape the requirement to meet regulations, they need to be creative in the way they respond to them, whilst still meet their own goals or providing sustainable and affordable homes for themselves. Standardised solutions may seem counterintuitive to adherents to permaculture principles, but they do present significant benefits the LID practitioner, allowing them to minimise cost and disruption when moving on site and allowing them to focus on the crucial task of establishing their land management strategy. These might vary in degree from repeating techniques that have been found to be successful in the past to the use of entire prefabricated structures.

Another way that the challenge of embarking on an LID can be made easier is through direct support of communities that are geographically close. The recent approval of three OPD applications in close proximity to Tir y Gafel is bound to have beneficial effects for both the established plot holders and those whose journey is only just beginning. The fact that two of these planning applications, Gardd y Gafel and Parc y Dwr were approved at local level suggest that exposure to the practical realities of LID projects has engendered in the local community a greater openness to LID as an acceptable, even desirable, model of development and land use. Further information about all approved and current OPD planning applications is available from the OPC website (http://www.oneplanetcouncil.org.uk/applications/).

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Figure 4.

a - Pwll Broga: Megan Williams and Charlie Hague's retrospective planning application for their 'hobbit house' near to Tir y Gafel in north Pembrokeshire was approved on appeal in July 2015; Photos: Amanda Jackson

Source: http://www.oneplanetcouncil.org.uk/approved-applications/ and https://charlieandmegshouse.wordpress.com

The sharing of knowledge is of critical importance in reducing the burden of satisfying the authorities. In the short period since its establishment in 2014, the One Planet Council (OPC) has been instrumental in supporting those wishing to follow the OPD route, as well as providing information to local authorities about the policy. In the summer of 2015, the OPC ran a successful series of training courses both for prospective applicants and for planning officers and professionals. The receptiveness of those charged with administering the regulations to the goals of OPD policy demonstrates the benefits of an active process of dialogue between the parties involved. The responsibility for finding sustainable solutions to the environmental crisis is a shared one, and the only realistic option is a strengthening and deepening of the processes of engagement and communication.

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