MODELLING SUSTAINABLE COMMUNITY DEVELOPMENT IN EDINBURGH’S SOUTH EAST WEDGE

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Abstract

Chester-ton’s (1996) final report on the Edinburgh South East Wedge, represents the ‘interim framework’ for the development of a 1,400 hectare site on the edge of the City[1]. Commissioned by a consortium of public-private sector interests, including the former Regional and District Councils, enterprise agencies and respective landowners, the document provides the said ‘partnership’ with the strategic guidance and direction required to develop an area of land wedged between the City’s South East boundary, green belt and surrounding settlements of East and Mid Lothian.

This paper aims to set out the new style of economic development and environmental planning the interim framework for the Edinburgh South East Wedge represents by looking at the conceptual model the proposal draws upon and by examining the principles of sustainable community development the plan puts in place to balance the conflicting demands of growth, expansion and conservation in the City. The paper suggests that the model of sustainable community development adopted for Edinburgh’s South East Wedge is flawed in the sense it relies too much on the economic development of land and property markets and does not give sufficient attention to the ecology of environmental planning.

Keywords: economic development, environmental planning, sustainable communities.
New style planning

As an experiment in the new style of economic development and environmental planning, the framework’s strategy for the ‘balancing’ of development, growth, expansion and conservation, proposes to adopt the principles of sustainability as a means of improving the relationship between the natural and built environment. In addressing this matter, the framework suggests the answer to this question of ‘balance’ and search for a form of development which reconciles the competing demands of growth, expansion and conservation, lies the distinctive urban design, layout and pattern of settlement the interim framework sets out for the growth and expansion of the City into the area of land known as Edinburgh’s South East Wedge.

The conceptual model

The distinctive form of urban development it proposes is set out in the conceptual model of the South East Wedge. What the model proposes is that the design, layout and settlement pattern of the distinctive urban development in question should be based on:-

- the integration of existing urban settlements with new community developments;
- the planning of a new community development in a responsible, sustainable way;
- the development of a strong landscape framework.

Defining integration as the effective fusion of existing settlements with the new community forming part of the proposal, the report suggests the South East Wedge has the potential to create a distinctive urban character for the land in question via the formation of three distinct clusters of settlement. Three distinct settlement clusters, linked by the public transportation corridor, the framework also proposes, should be developed for such purposes. Expanding on this point, the document proposes the distinct urban character of the development should take the following form:

- the regeneration of a run down urban settlement;
- the expansion of an existing settlement;
- development of a new community.

In total, the framework anticipates that the clusters of settlements and new community will provide about 5,000 additional residential units and an expanded resident population of approximately 20,000. Reflecting further on the question of urban form, the document states: “.... the urban design challenge will be to create a high quality living and working environment. The [regenerated, expanded and new community] neighbourhoods should be conceived as essentially urban in character and designed on the following principles of sustainable development.” (p.5). The principles in question are those of settlements and communities exhibiting:
• a spatially compact urban form;
• a high density of population;
• a balance of uses, economic and social structures;
• energy conscious public transportation;
• designs to provide a high quality living and working environment in identifiable
  neighbourhood units;
• a strong degree of financial viability in the short, medium and long term horizon.

The principles in question

The question of a spatially compact urban form can be read in a number of ways. First, as a development and environmental strategy on a sub-regional scale, the framework can be seen to concentrate the pressure for growth and expansion in one part of the city and conserve the environment of others. Secondly, on the district scale, it can be seen to concentrate pressure for growth and expansion in a collection of settlements, clustering them together in a form that avoids coalescence and conserves the environment (see figure 1).

It is this clustering of growth and expansion into existing settlements and new communities, while conserving the environment, that requires higher population densities. The balance of uses: residential, commercial, infrastructural and communal, are required for the communities to form four identifiable neighbourhood units. The question of energy conscious settlements rests with the high level public transportation network proposed for the development. This transportation network includes a number of measures such as a public transport corridor; bus priority proposals; park and ride provision and traffic calming. It also proposes that some of the neighbourhood units should be car free and residents ought to be within easy walking distance of public transport facilities. Together this combination of design factors are seen to provide for a high quality living and working environment, further augmented by the fact that the principles of sustainability underlying the development of the South East Wedge are to be strengthened by the layout and settlement of both communities and neighbourhood units in accordance with a ‘strong landscape framework’.

The matter of financial viability tackles the particular difficulties the site confronts in terms of geo-technic problems associated with the extensive mining activities previously carried out in the area. Given the ‘abnormal’ site preparation costs, high infrastructure and communal content, the framework sets out what the strategy for the development, growth, expansion and conservation of the environment yield in the form of land receipts. As the viability study points out, the assumptions of the exercise and calculations show a net welfare improvement (in the form of an internal rate of return) of 8% p.a. over an inter-generational development period of 20 years.

Sustainable community development

It is evident that the distinct urban form proposed for the South East Wedge follows the commitment to sustainable development found in *The Bruntland Report* and in the EU’s *Green Paper on the Urban Environment* [2-3]. The latter, having a
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Higher density/Mixed use
New Class 4 Development
Neighbourhood Centre/Town Centre
Industry/Distribution
Greenspace including Woodland and Parkland
Hospital
Medi-Park
Principle roads and transport routes
Park and Ride site

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EDINBURGH SOUTH EAST WEDGE
Interim Framework for Development
Land Use Plan
Scale -
DEGW - January 1996
particular commitment to the development of sustainable urban forms in terms of the compact city, with higher densities, balanced uses and energy conscious forms of public transport, reducing the need to travel and providing high quality living and working environments for communities with identifiable neighbourhood units. It is a form of commitment also reflected in the UK Government’s *Common Inheritance*, the EU’s *Towards Sustainability* and reiterated in the *Rio Earth Summit* [4-6]. Commitments to compactness, high densities, mixed uses and energy conscious public transportation most recently promoted in the UK Government’s *Sustainable Development Strategy, Planning Policy, Guidance Notes*, (PPGN’s) Nos. 12 and 13 [7-9]. Arguments on urban form, design, layout and settlement, also well rehearsed by Elkin, McLaren and Hillman (1991), Breheny (1992a; 1992b) Owen (1992), Nijkamp and Parrels (1994) Haughton and Hunter (1994) [10-15]. Arguments that Rydin (1997) points out, while well rehearsed are ultimately contestable, representing a discourse within the policy community and networks of the UK that is difficult to either draw upon or operationalise as a means to measure the exact degree of commitment which exists to the development of sustainable communities [16].

**Sustainable community development in Edinburgh**

While contestable, what is clear is that strong evidence does exist to show the policy community in Edinburgh draws heavily on *This Common Inheritance*, the *Sustainable Development Strategy* and *PPGN’s* 13 and 14 and form networks of communication which operationalise such instruments by guiding and directing the growth, expansion and conservation in question through a consultative and partnership approach to urban design, layout and settlement [17]. It is perhaps, however, the matter of what form the planning guidance and direction takes within the policy community and networks of Edinburgh’s South East Wedge that represents the question in hand and matter which requires particular attention. For while the interim framework is put forward to represent a radical experiment in the shift away from property market-led development and towards forms of environmental planning under the policy commitment to sustainability, it is evident a number of the conventions underlying the former type of development can still be found in environmentalism of the latter. This is because, far from representing a break with convention, it is evident that many of the neo-liberal traditions underlying the pro-growth, expansion-minded development rhetoric and enterprise culture of market economies, also survives the transition towards environmental planning - albeit under the more inclusive rubric of economic development, growth, expansion and environmental conservation [18].

The way in which the framework for the South East Wedge manages to stick with convention, rather than make a radical break with tradition is instructive and deserves further attention. This is because in focusing attention on the continuation of past trends, conventions and extension of traditions built up over the past decade, it has the effect of highlighting questions about the communicative and technical qualities of enterprise culture founded upon the civic virtues, consultation, partnership and competition of pro-growth, expansion-minded economic development, while drawing attention away from matters concerning the transition
to appropriate forms of environmental planning strategy and conservation [19-20]. The tactic the framework adopts in this aim is simple. What is does is to focus attention on the one common denominator in the ‘economic development cum environmental planning strategy’ equation, that of the ‘market’ and questions about the use which land should be put in order for the economic development and environmental planning strategy to meet the needs of growth, expansion and conservation. What this does is reduce the question of economic development and environmental planning strategy surrounding the matter of distinctive urban forms, design, layout and settlement patterns to concerns about the use of land in sustainable communities. To be more precise, to the economic development and environmental planning of land as the strategic means to balance growth, expansion and conservation in the production of distinct urban forms, layouts and settlements for sustainable communities.

As a form of land management, the economic development and environmental planning strategy the framework adopts for this purpose also has to be recognised as having its rationale firmly rooted in the market. For nowhere in the framework do the proposals for the development of the South East Wedge manage to transcend the market or its mechanisms for the allocation of uses to land. This is because in line with the conventions and traditions built up over the past decade, the main point of concern lies not so much with the communicative and technical demands of an economic development cum environmental planning strategy, as with the accountability, value for money, economy, efficiency and effectiveness disclosures needed to fund expenditures on the servicing of infrastructures with abnormal costs under the growth, expansion and conservation measures laid down for the South East Wedge [21-25].

Of perhaps even greater concern is the fact that in restricting the economic development and environmental strategy to the market, the framework also reduces the form of environmental economics it takes to a question over the exchange of land and as a consequence is silent on the question of built forms. This has the unfortunate effect of concentrating attention on the release of development value from the economics of the environmental planning strategy and ‘gain’ resulting from the allocation of land into a distinct urban form, layout and settlement pattern, rather than the impact resulting from the engineering and construction of the buildings forming the sustainable communities in question. Nowhere does the examination transcend the market for land, or matter of planning gain. Neither does it manage to address questions about built forms, attempt to ‘green’ economic development, or make planning ‘environmentally friendly’ by either ‘valuing the environment’, or ‘costing the earth’ through impact assessments based on a full cost pricing mechanism, hedonic, or contingency style appraisal [26-27].

Some comments on the South East Wedge

If it can be accepted that the interim framework takes a sectoral rather than holistic approach to the development of the South East Wedge - if only for the fact its urban character centres on land uses as opposed to the built, let alone natural environment - it is necessary to identify the reasons for this so a more meaningful search for
sustainable communities can be undertaken. The following discussion will do this by making a number of comments on the development of the South East Wedge:

- first of all, it has to be recognised the problems do not lie in the confusion over the meaning of sustainability in terms of either its economic or environmental components [28-29] but in how it is drawn upon and operated as a tool of economic development, growth, expansion and environmental conservation. The problem lies in the fact it reduces the issue to a question of land management under market exchange, rather than appropriate form of economic development and environmental planning strategy for land and buildings.
- the effect of this is to leave the economic and environmental relationship between the distinct urban form, clustering, identifiable communities, neighbourhood units and coalescence restrictions of the framework unclear. The economic and environmental nature of the relationship between spatially compact urban forms, separate communities and neighbourhoods needs further clarification. At present it cuts across what are accepted to represent alternative models of highly concentrated compact, or decentralised and dispersed forms of communities [32-33]. As it is, the image of such urban forms goes back to the early modern reformers such as Howard, Geddes and Abercrombie, how compatible these are with the economic development and environmental planning of the contemporary era is not evident and needs to be clarified if further confusion is to be avoided.
- if the exact nature of the said relationships are to be clarified, it is evident that it will be necessary to get behind the ‘green gloss’ of the ‘economically efficient’ and ‘environmentally friendly’ development images of the framework and inject a much stronger ecological dimension into the analysis. Like, for example, that which exists in the debate on ‘carrying capacity’ [33-34]. At present and contrary to what is proposed, it is the economics of land and property market development, rather than the ecology of environmental planning that lies at the centre of the framework. What the framework needs to recognise is that the two exist independent of each other and the question is whether the latter has the capacity to carry the former and not the other way around! Asking this question opens up a much neglected issue of the framework - that of environmental impact assessment as a development planning tool, be it to do with the effects of the urban form, density, use, transport or any other such matter.
- at present the framework is not only too far removed from the ecology of environmental planning for any credible form of impact assessment, but equally too isolated from the urban and regional structure of the city the communities and neighbourhood units in question form part of. This is particularly noticeable in the matter of transportation, for while the framework raises a number of questions about impact of transport on the South East Wedge and City as a whole, it focuses on the former and excludes the latter. At present there is little evidence available to suggest that a City-wide assessment of the impact which the development of the required transportation networks will have upon Edinburgh exists, for while the plan says it ‘hopes’ the impact will stay within projected levels, it also goes on to say may not.
it is also clear that the discounting mechanism the framework draws upon for the appraisal of development land is too simplistic in the manner it echoes the logic of Alonso (1967) and Denman (1972) [35-36]. In its current form it fails to give due recognition to the uncertainty and risk which underlies the development, is deterministic as opposed to probabilistic and as a consequence is not duly sensitive to the contingencies it faces [37-38]. The fact it also reduces the appraisal to a measurement of receipts from land sales means that it only captures about 20-30% of the capital expenditure in question and little, if any of the subsequent revenue commitments. Perhaps of greater significance though is the fact that such an appraisal restricts the measurement of income to capital receipts from land sales, relative to expenditure on the servicing sites, rather than capital costs and revenues from the engineering and construction of built structures forming the bulk of the development. In effectively negating the possibility of adopting ‘net annual return’ models for the development of land and buildings, it undermines the ability to not only measure the rate of return on capital investment from the economic development in question, but makes it virtually impossible to measure the ecology of the environment it also plans to produce in any meaningful way [39-40].

Summary

From this brief examination of the framework for the South East Wedge of Edinburgh, it is evident that as an experiment in the new post-1990 style of plan-led economic development and environmental planning strategy, much of the growth, expansion and conservation, still leaves the balancing of the relationship between the natural and built environment to the market. If heavy reliance on the plan as an instrument of strategic guidance and direction means that a great deal of the urban form, design, layout and settlement proposed in the name of sustainable development is left to the economics of the land and property market and fails to penetrate the ecology of the environment, it has to be recognised the consensus surrounding the framework’s claim to create sustainable communities with neighbourhood units, will begin to come under pressure.

References

30. Elkin, T., McLaren, D. and Hillman, M., (1991) op.cit no. 10
32. Haughton, G. and Hunter, C. (1994) op.cit no. 15
33. Pearce, D and Turner K (1990) op cit no.26