rural new settlements in 2018 – what might ebenezer howard say?

Steve Newman outlines the elements of a replicable model for new rural settlements in which infrastructure becomes part of the local environment and ecology and contributes to the restoration of the countryside and natural capital

In community-supported silvo-pastoral systems there is potential for import substitution and linked carbon footprint reduction by using home-grown timber – while the landowner gets full grazier rent for the life of the system and there is ecosystem services payment potential for, for example, flood control and carbon-fixing

The current debate about new settlements seems to have concentrated on the contribution that 'Garden Cities, Towns and Villages' could make to the supply of new housing. The focus on new housing provision clearly resonates with the rhetoric of a 'housing crisis' and the 'need for 300,000 new dwellings a year' and has resulted in the setting up of an All-Party Parliamentary Group on New Towns.

However, the potential benefits of new settlements in terms of ecology, local food systems, local energy generation, water management and biodiversity do not yet appear to have been explored adequately, or

at all. This may be because these issues are regarded as distractions from meeting the need for housing, or it may be a result of a lack of expertise and reliable data. This article argues that the success of new settlements in terms of their financing, sustainability (biodiversity and carbon dioxide emissions mitigation) and popular appeal depends fundamentally on how successfully the new residents and infrastructure become part of the local environment/ecology.

The general objective here is to develop a replicable model that shows how new settlements can be integral to the restoration of the countryside (natural capital) and not impositions upon it. In other words, in place of Ebenezer Howard's *To-morrow* we could today have the chance to follow a peaceful path to real rural and community reform. This was how villages first developed in the Neolithic period, but it was also fundamental to the vision of Ebenezer Howard at the end of the 19th century.

In 2012 the government issued the National Planning Policy Framework, which, in para. 52 stated that:

> *'The supply of new homes can sometimes be best achieved through planning for larger scale development, such as new settlements or extensions to existing villages and towns that follow the principles of Garden Cities.'*[1]

There is little if any evidence that any large-scale development being proposed or approved since 2012 has included anything approaching Howard's vision of marrying town and country. While the TCPA has made passing reference to food growing in one of its Garden City Principles – 'Beautifully and imaginatively designed homes with gardens, combining the best of town and country to create healthy communities, and including opportunities to grow food'[2] – this does not appear to acknowledge the full potential of integrating the new dwellings within the countryside, or that this can be a main selling point for the new settlement vision.

Another of the TCPA's Garden City Principles describes 'Development that enhances the natural environment, providing a comprehensive green infrastructure network and net biodiversity gains, and that uses zero-carbon and energy-positive technology to ensure climate resilience'. To secure these potential benefits, it is not only essential to integrate the new building with an enriched countryside, but also to model the way in which the financing of the new residential and commercial developments can complement both food growing and the regeneration of biodiversity.

Guiding influences

A number of key influences guide this article:

- Ebenezer Howard's 'peaceful path' for (rural) reform though Garden Cities;
- results from the latest research on agro-forestry re-wilding and micro-farms;

Walnut trees grown for nuts as part of a climate-smart silvo-arable system. The nuts are harvested from year 2 by using grafted trees to improve precocity. With climate change there is now a greater potential for new nut and fruit trees in the UK. Moving towards nuts for human food and reducing dependence on meat (and the cereals produced to feed livestock) could significantly reduce the carbon footprint of food production in rural and peri-urban areas, and there could also be health and import substitution benefits

- the Department for Environment, Food and Rural Affairs' 25 Year Environment Plan 2018;[3] and
- Chinese/Indian approaches to ecosystems, engineering and social development in rural areas, and 'climate-smart' reserve management.[4]

Agenda-setting can be key to the outcome of any programme. If new settlements are to be integrated into the countryside, the potential benefits to be gained from the land and its ecology should come first, before the nature of the housing and urban infrastructure:

- environmental improvement of land surrounding settlements, connecting wildlife corridors and protected areas;
- affordable and healthy settlements and work opportunities, with a negative carbon footprint, plus other social and environmental benefits;
- locally grown and produced food, beverages and building materials; and
- the development of social and political structures at the same time as, if not before, the development of houses, employment and bio-regeneration.

In community-supported silvo-arable systems, combining food production with energy generation (from forest and agricultural waste), there is again potential for import substitution and linked carbon footprint reduction through using home-grown timber and substituting palm oil with rape seed oil for specific products – while the landowner gets payments for material for energy generation as well as income from the arable tenant farmer, and there is potential for ecosystem services payment for improved biodiversity levels, flood control, pollination services, and carbon-fixing

The 2018 Oxford Real Farming Conference, attended by Environment Secretary Michael Gove, was a watershed event that indicated the energy for change in relation to rural land use. Over 800[5] mostly younger people were there, setting out the case for affordable land for rural enterprises. In reply to the question 'How will the Department take advantage of the recent exciting research in temperate agroforestry?', Michael Gove admitted that this country is at the bottom of the league in terms of standing trees and forests and accepted that:

> *'Policies in the past led to the wrong trees being planted in the wrong place at the wrong time … We need to look at incentives and the rules that have privileged a tree in a certain place in a way that is not just commercial but has more public benefit…'*

While the 25 Year Environment Plan has advocated the planting of 11 million trees in the next 25 years, there is no reference to the contribution that planning could make to the regeneration of the countryside and to the incorporation of new settlements.

The government – and new settlement advocates – seem to be unaware of the latest research on temperate agroforestry,[6] which shows that we can put and or manage the right woody perennials in the right place so that they can deliver habitat creation and reduce negative effects such as atmospheric carbon dioxide and flooding. Animals could also be used as part of re-wilding to help create a landscape such that water distribution, organic matter, spatial heterogeneity, etc. serve to increase public and wildlife benefit. The science of agroforestry has shown that by choosing the correct woody species and planting arrangement, it is possible to increase and not reduce food production.[6]

The basic model

Financial modelling has been carried out for a system in which 1,000 acres of rural land is purchased for restoration, with 30 acres taken to create a 'forest garden village'. The village would act as a 'mid-wife', delivering 1,000 acres of improved natural capital. The 'mid-wife' could also have a role in shaping policy and related instruments if appropriate monitoring, evaluation and learning were to be built into the management system. The spatial planning zones could include:

- a village zone with community green space and a 'social forest' (including forest school(s));
- serviced allotments and integrated local food growing/processing zones (equivalent to Howard's market gardening zones);
- a constellation of monitor farms;[7]
- specially created wildlife conservation zones – for example wetland and enhanced hedgerows; and
- a re-wilding zone, perhaps with enhanced income potential from camping/tourism.

Possible income streams include:

- rents (housing, bed and breakfast, amenity, retail, food processing, horticultural, agricultural, forest, etc.);
- renewable energy and or carbon sequestration/ offset payments;
- payments for ecosystem services; and
- brokerage (for example percentage payments for food/wood/material/social service procurement contracts).

Scale units and initial model values

As an example, Poundbury, the village in Dorset established by Prince Charles, had a population of 2,500 in 2015. Ebenezer Howard suggested a plot of 20 x 130 feet (2,600 square feet) for 5.5 persons, so the area needed for 2,500 people at his suggested density would be 1,181,818 square feet or 27.13 acres – say 30 acres. Household size has reduced compared with Howard's day, so calculations could now be based on three people per dwelling. This size of plot would allow for some green space with a development of 800 dwellings, assuming three persons per dwelling. Rents for dwellings would be between £1,000 and £2,000 per month. A target annual rent from the village of £10.92 million would be met in year 2 of the project.

A study by Scott Wilson for CABE (the Commission for Architecture and Built in Environment) published in 2010 showed that the median gross internal area (the internal area of the dwelling measured to the

Table 1
Financial analysis

Target or outcome variable	Scale	Year 1	Year 2	Year 3	Year 4	Year 5 'the vanishing point'	Year 6 'and every year forever'
		£					
Target land purchase price	1,000 acres	8,500,000					
Target village cost	30 acres of land, 2,500 people housed in 455 dwellings	30,000,000					
Total cost		38,500,000					
Total impact investment with 20% interest payment		46,200,000					
Target annual agricultural land income from rent and payment for public goods	970 acres	582,000	582,000	582,000	582,000	582,000	582,000
Target annual rental yield from 455 dwellings	455 dwellings including Airbnb, shops, etc.		10,920,000	10,920,000	10,920,000	10,920,000	
Total target income per year		582,000	11,502,000	11,502,000	11,502,000	11,502,000	
Cumulative income		582,000	12,084,000	23,586,000	35,088,000	46,590,000	
The outcome: surplus (the co-operative commonwealth cum 'nature and community restoration fund')						390,000	11,502,000

internal face of the perimeter walls) of a five-bedroom house in the UK is 158.65 square meters.[8] The Jewson build cost calculator gives the cost of using self-managed contractors to build a two-storey house of excellent quality in the South East as £1,168 per square metre.[9] This gives a total building cost of a little over £185,000 per dwelling. There would be savings by building terraced housing (which is also more easily made energy efficient) and economies of scale in providing services – for example roads, drains, schools, and other social goods. Self-build options can drop the figure down to build costs of £500 per square metre, giving half the cost.[10] Co-housing with shared buildings/land would also result in cost savings. The target build cost used in the model was £1 million per acre (£30 million in total).

With an average agricultural land price of £8,500 per acre, the total land cost would be £8.5 million. The target agricultural income for the model was £600 per acre. This gives a total of agricultural income from the 970 acres of £582,000.

Initial findings

Analysis of the 1,000 acre model (see Table 1) gave a total project cost (land purchase and building) of £38.5 million. A 20% return on the £38.5 million could be paid to impact fund investors after year 5 (the 'vanishing point' in Howardian economics). After the vanishing point, an annual income (rent-rate) to the 'village development board' would be over £11.5 million – as per the Letchworth Garden City model. The resulting 'nature restoration and

community belonging fund' or co-operative commonwealth could provide outcomes including:

- a carbon-negative village;
- improved biodiversity and ecosystem services, and enhanced natural capital;
- improved health and a cottage hospital;
- improved education via a forest school cum university (forest campus);
- carbon-negative transport;
- shops, markets and places building on the strengths of ethnic diversity and the variety of learning skills;
- a citizens' wage; and
- other sustainable development goals.

The model assumes no investment costs for rural land improvements and no increase in rents over a 20-year period.

The key components for further consideration are:

- a set of principles on lifestyle choices;
- routes to access land for purchase or long lease, etc.;
- the type or class of investors;
- the governance model – for example the constitution of the village development boards;
- the plan for monitoring, evaluation and learning, including monitor farms[7] and a 'sentinel landscape approach';[11] and
- partnership approaches to be used – for example tripartite environmental stewardship contracts in which the partners are landowner, the village development community interest company, and the state.

Neighbourhood planning has been operational for five years,[12] and has raised the profile of and general familiarity with land use planning. There are stories where this delegation of power has seemed to be illusory and a realisation that the statutory planning system does not cover some issues important to a low-carbon future and general wellbeing. There is an opportunity to harness this energy through providing new visions of how land use planning could be done differently, and to extend this to 'countryside restoration settlements' – both new settlements and models for adapting existing villages or towns.

A new vision of urban and rural development is also implied by the latest writings of George Monbiot[13] – a vision in which both the planning and occupation should be shared by affinity groups developing a sense of belonging. The 'countryside restoration settlement' model is conceived as a way of bringing town and country together in ways that would surely have the approval of Ebenezer Howard, incorporating the basic and cultural needs of people in a way that is entirely consistent with the regeneration of natural and ecological systems. The financial modelling is being developed to show that all this could be achieved without changing the economic models currently applied to land, labour and other resources.

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Notes

1 *National Planning Policy Framework.* Department for Communities and Local Government, Mar. 2012. www.gov.uk/government/publications/national-planning-policy-framework--2

2 The TCPA's Garden City Principles are set out at www.tcpa.org.uk/garden-city-principles

3 *A Green Future: Our 25 Year Plan to Improve the Environment.* HM Government, Jan. 2018. www.gov.uk/government/publications/25-year-environment-plan – launched by the Prime Minister, but incorporating the views and approaches advocated by the Environment Secretary Michael Gove at the Oxford Real Farming Conference, Jan. 2018

4 See projects carried out by BioDiversity International Ltd – www.biodiversity-int.co.uk

5 300 people were unable to obtain tickets for the over-subscribed event

6 AM Gordon, SM Newman and B Coleman: *Temperate Agroforestry Systems.* CABI Publishing, 2018

7 'Monitor farms' are based on the idea of community groups identifying key issues that impact on local production and farm performance and selecting a farmer and facilitator. The group then develops and implements a business plan and a three- to four-year monitoring plan. Local agribusiness people are on hand to support monitor farmers throughout the process – including vets, consultants, farmers, scientists, financiers and a corporate buyer concerned with sustainable procurement. Monitor farms draw on local expertise, planning and community collaboration to improve farm production and make a big difference to profits. Success on a single farm provides other local farmers with a wealth of practical and proven information to take home and use. The best monitor farms are set up as a company in their own right and the board produces triple bottom line accounts (financial, environmental and social performance). See https://beeflambnz.com/your-levies-at-work/monitor-farms

8 *Housing Standards: Evidence and Research – Dwelling Size Survey.* Scott Wilson, for CABE, Apr. 2010. http://webarchive.nationalarchives.gov.uk/20110118111538/http://www.cabe.org.uk/files/dwelling-size-survey.pdf

9 The Jewson Build Cost calculator is available at www.jewson.co.uk/working-with-you/for-self-builders/preliminary-planning/calculators/build-cost-calculator/

10 See *Build It*'s 'Self-build routes and costs' webpage, at www.self-build.co.uk/self-build-routes-costs/

11 See the Center for International Forestry Research's 'Sentinel landscapes' webpage, at www1.cifor.org/sentinel-landscapes/home.html

12 J Bishop: 'Neighbourhood plans – a five year healthcheck'. *Town & Country Planning,* 2018, Vol. 87, Jan., 22-27

13 G Monbiot: *Out of the Wreckage: A New Politics for an Age of Crisis.* Verso, 2017