UC Berkeley

Berkeley Planning Journal

Title
INNOVATION, THE AGRICULTURAL BELT, AND THE EARLY GARDEN CITY

Permalink
https://escholarship.org/uc/item/5mj270zj

Journal
Berkeley Planning Journal, 28(1)

Author
Livesey, Graham

Publication Date
2016

DOI
10.5070/BP328133865

Peer reviewed

INNOVATION,
THE AGRICULTURAL BELT, AND
THE EARLY GARDEN CITY

Graham Livesey

AUTHOR BIO

Graham Livesey is a Professor and Associate Dean (Academic – Architecture) in the Master of Architecture Program (Faculty of Environmental Design) at the University of Calgary where he teaches design, architectural history, and urban design theory. He holds BArch and MArch degrees from McGill University, and a doctorate from the Technical University of Delft. Previously he was a principal of Down + Livesey Architects, and he has served with a wide range of organizations, including the Association of Collegiate Schools of Architecture and the Alberta Association of Architects. He is currently the chair of the Council of Canadian University Schools of Architecture (CCUSA). He has undertaken research in the areas of modern architecture and contemporary urbanism, and has published a number of books. He is presently co-editing a 4-volume anthology of writings on Le Corbusier for Routledge, and is co-editing a book on Canadian architecture since 1967 for Princeton Architectural Press.

The emergence of the Garden City movement, inspired by Ebenezer Howard's book *To-morrow: a Peaceful Path to Real Reform* (1898), subsequently published as *Garden Cities of To-Morrow* (1902), would have an enormous impact on future urban development and town-planning worldwide (e.g., Parsons and Schuyler 2002, 78; Ward 1992; Cooke 1978). Lewis Mumford claimed that the two most important inventions of the early twentieth century were the airplane and the Garden City (Mumford 1960). The Garden City model in many ways represents the antithesis to the historic city, as a model derived from smaller rural communities with a defined size, low densities, and a wealth of green space. Many subsequent urban models have expanded upon, altered, and diverged from Howard's ideas. The Garden City has radically challenged the expectation that a city is a dense, vibrant, and largely hard-landscaped environment. In fact, urban environments developed over the last half-century have in many cases been dispersed, low-intensity, and soft-landscaped environments, resulting in substantial changes to the way cities are constructed, managed, and inhabited.

Letchworth, in Hertfordshire, was established in 1903 as the first Garden City, with the purchase of inexpensive farmland by the Garden City Pioneer Company, Ltd. Following a town plan designed by the architects Barry Parker and Raymond Unwin, the first decade of Letchworth's history provides a case study for examining Howard's ideals. The founders of Letchworth emphasized the concept of a delimited, healthy town permanently surrounded by countryside, a community based on cooperation, and a central role for productive labour. The scheme by Parker and Unwin was originally designed to accommodate 30,000 residents on 1,250 acres, resulting in an overall average of twenty-four persons per acre; 2,500 acres of the estate was set aside for the agricultural belt. The construction of

infrastructure on the site began in the summer of 1904, along with the first houses by various private builders. By 1907, the population had grown to 4,300 and a number of businesses had located in the town, and the demand for churches, clubs, and amusements rose as a result. By 1913, enough of the town was built to determine the relative strengths and weaknesses of its many concepts. C.B. Purdom, an early employee of Letchworth Garden City and a lifelong promoter of the Garden City movement, suggested that the most innovative period in the development of Letchworth occurred during the first decade, and after this there was a decline in the visionary effort on the part of the enterprise (Purdom 1913).

There is no doubt that the early Garden City was in many ways innovative; a number of proponents and historians of the movement have attempted to define those aspects of the model. For example, describing the Garden City pattern, the advocate F.J. Osborn summarized the Garden City in the following terms:

..towns of limited size, of controlled density, on a background of safeguarded countryside; towns where people live near work, with planned industrial zones; towns which are real communities of all classes, fully equipped for social life; towns with gardens and open space; towns in which architectural control aims at harmony in diversity. And as a means to these ends, unified landownership of large areas, with leasehold control to maintain good planning (Osborn 1946, 48).

This succinct description, by a key proponent of the Garden City, sums up its essential components. Complementing this description, Osborn listed what he believed to be the main innovations of Howard's Garden City as: 1) planned dispersal, 2) limit of town size, 3) amenities, 4) town and country relationship, 5) planning control, 6) neighborhoods, 7) unified landownership, and 8) municipal and cooperative enterprise (Osborn 1946, 32–33). All of these fall into general categories of planning and administration, and underscore Howard's key concepts. Further, Mervyn Miller, who has extensively documented the history of Letchworth, suggests that the key innovations of the enterprise were the simplicity and directness of Howard's ideas, the broad appeal of the concepts, the use of existing techniques, the employment of professionals in its early execution, and the persistently pragmatic approach of the founders (Miller 1989, 210–11).

The historian Walter L. Creese, in his detailed study of the Garden City and its influence, also has identified a number of key ideas, including: using the village as a model for the town; implementing the picturesque design of townscapes; the density of the town; the careful design of road systems (for example, the use of cul-de-sacs); and the attention to site (Creese 1992, 169–73, 181). Creese notes that Unwin, in particular, used the village as a social and formal model for town design, was committed to understanding the past and championing the Middle Ages, and emphasized beauty in designing communities (Creese 1992, 169–73). Creese also identifies specific innovations for the Garden City movement, beyond Parker and Unwin's concept of "twelve houses to the acre" and "nothing gained by overcrowding" (Unwin 1967); these include "the side path and internal circulation, the cul-de-sac, the superblock, the curving street, the tree-lined verge, the closing and opening vista, the varied setbacks, climatological and focal siting, and any number of other refinements in the disposition of houses and buildings within a given setting" (Creese 1992, 181). He then outlines four general benefits of Garden City design:

a) It called attention to the ground as a distinct entity in itself, not merely a quantity waiting to be "improved" by structures; (b) it meant that the sequence of planning, from house to the community, to the region and thence the whole country could seem a more apposite process and that the planner's skill ought to be increasingly needed as the units enlarged; (c) it proved that the petty tyranny of the street over the home, or the opposite, as happened in early Leeds, could be restrained if other elements of urban composition could be better interpreted; (d) it indicated that visual planning was at its best when it was understood as an adjustment of solids, voids, edges, planes, and directions (Creese 1992, 181).

Surprisingly, none of these authors underscore one of the most important innovations of the early Garden City—the "agricultural belt" (later to become the greenbelt).

Integral to Howard's vision was the concept of the agricultural estate or agricultural belt (see Diagram 2 from Howard's 1898 text at the beginning of this article), which, in harmony with a range of pub-

lic and private green spaces, created a particular quality at Letch-worth. In the nineteenth century, the agricultural belt developed as a concept for dealing with the edge—to act as a mediating condition between town and country—and for limiting growth as a means for controlling land speculation. The nineteenth-century precedents for the agricultural belt, or greenbelt, include the 1837 plan for Ad-elaide attributed to William Light, and James Silk Buckingham's scheme for a model town (Osborn 1946, 167–80). While not invented by Howard the agricultural belt was promoted by the early Garden City movement, although the concept has gained relatively limited application. Describing this aspect of his vision, Howard wrote:

All the sewage and other refuse of the town is utilised on the agricultural portions of the estate... which is held by various individuals in large farms, small holdings, allotments, cow pastures, etc.; the natural competition for these various methods of agriculture, tested by the willingness of occupiers to offer the highest rent to the municipality, tending to bring the best systems of husbandry... (Howard 1898, 17).

For Howard, the agricultural estate, or belt, supported agriculture, some institutions, and natural preserves; managed waste; and pro-vided a vital source of rent for the whole Garden City enterprise (Howard 1898, 24). The agricultural belt was also intended to give a precise edge to the town, provide fresh air, act as a buffer from sur-rounding communities, and be used for the production of food (Pur-dom 1949, 442). Economically, it was a way of limiting the growth of the town, of controlling land speculation on the edges of the town, and of stabilizing the value of land in the surrounding agricultur-al area. Purdom wrote in 1949 that the agricultural belt "is a wide stretch of food-producing land surrounding the town retained as an integral part of the town's economy" (Purdom 1949, 439).

Addressing Howard's original text and the concept of the agri-cultural belt, Thomas Adams, an early administrator at Letchworth and then an advocate for town planning in North America, suggest-ed that the belt would not effect a new relationship between the town and country in and of itself (Adams 1905, 38–39). Accord-ing to Adams, the agricultural belt, rather than the Garden City in general, was designed to support small agricultural operations and labor; he wrote that it was:

1st   To convert as much land as practicable into small holdings...
2nd   To encourage agricultural labourers to acquire small holdings, and the factory workers to cultivate allotments or gardens...
3rd   To promote co-operation among the tenants...
4th   To promote technical education and provide advice...
5th   To give long leases and equitable conditions of tenure, and to en-courage tenants to invest capital in improvements and housing accommodation.
6th   To establish credit banks in order to give small holders financial assistance.
7th   To encourage the development of suitable small industries in the villages.
8th   To provide up-to-date facilities such as water supply under pres-sure, siding accommodation, good roads, etc., for increasing the productiveness of the soil, and for promoting the rural industries (Adams 1905, 43–44).

The objectives for the agricultural belt were never fully realized in practice; however, they describe the union of land, labor, infrastruc-ture, and community that was the basis of the Garden City. Adams argued that gardens and allotments can "produce wealth," and that this is better than "dissipating both time and money in the pub-lic-house" (Adams 1905, 48). Consistent with the reformist agen-da of the period, Adams wrote: "The marriage of town and country effected by Garden City will not only improve the physique of the factory worker, it will improve the intelligence and character of the rural labourer" (Adams 1905, 51). He cited examples of smallholding and cooperative associations throughout England. Adams suggest-ed, following Howard, that the agricultural estate (or belt) be divided between large farms, smallholdings or allotments, rural residences (with over two acres of land), and public institutions (Adams 1905, 87). The most suitable types of agriculture would have been small dairy farms or market gardens. He discussed smallholdings as both primary and secondary sources of income, and also describes the role of allotments (Adams 1905, 90–97). Adams wrote:

It will generally be found that a factory worker or artisan who is engaged in a profitable industry cannot afford, and does not require from a health point of view, to cultivate more than an eighth of an acre.... When ordinary farm land is first converted into garden land it requires patient, careful and skillful cultivation for two or three years... (Adams 1905, 95).

However, as Michael Simpson points out in his biographical study of Thomas Adams, the rural policy of the Garden City struggled from the beginning, in light of general living and working improvements in Britain and the failure of the smallholdings movement (Simpson 1985, 26). Purdom described the produce from the agricultural belt at Letchworth in 1949 in the following terms:

The chief products of the agricultural belt are fruit and dairy produce. A small amount of land is used for market gardening; but the land is not specifically suitable for this purpose, being, in the main, rather exposed and needing considerable ' making.' Apples, pears, and soft fruit are grown in quantity for the local market.... It is not possible to tell to what precise extent the demands of the new town are met by the produce of the agricultural belt. That the area does not meet the needs of the town is certain (Purdom 1949, 145).

Despite this, Purdom also suggested that the agricultural belt was an essential part of Letchworth's economy and structure, and that, by 1949, the original goals for the belt had been achieved. He wrote:

The effect of the garden city on agricultural life can already be seen at Letchworth, although the rural belt is the least developed part of the town. The agricultural population has been increased, the cultivation of the soil has enormously improved, wages are higher, and the condition of the farm worker, his outlook and interests, have been raised to the level of those of the town worker. On the other hand, the townsman and factory worker have been brought into immediate touch with the country (Purdom 1949, 146).

The plan for Letchworth does not go as far as integrating farming into the structure of the town, although the growing of food was intended to occur in private gardens and in the agricultural belt. However, the presence of farming was evident in the compact size of the town, and the proximity of the surrounding farms to all parts of the town. This was particularly the case in the first decade, as the town developed in a relatively haphazard way. By 1913, the agricultural belt, which originally comprised two-thirds of the entire land area, supported seventy-five tenants working parcels of land of varying sizes; the rates of return and condition of the agriculture were deemed "satisfactory" (Burr 1913). As Purdom stated, the Garden City "does not, like other towns, destroy rural pursuits; it intensifies them" (Purdom 1913, 116). Many of the original inhabitants came from cities, and had little or no knowledge of rural life;

however, it was hoped that they would develop a country sensibility. An example of this was W.G. Furmston, the manager of the Skittles Inn, who left a factory job in London and, with his family, moved to Letchworth as one of the first tenants. He learned to manage a productive smallholding while maintaining his job, and would be considered an ideal example of the Letchworth social and economic experiment (Furmston 1920). While the agricultural belt supported a range of tenants and was strong in the production of dairy products, fruits, and vegetables, it did not truly integrate agriculture into the life of the town or provide the expected economic benefits that were hoped for in the original vision.

Ultimately, the use of the agricultural belt attempted to reorganize the traditional relationship between farmer and urbanite, and between city and country. The separation between city and country is addressed in a unified scheme, through the creation of a thick boundary condition designed to negotiate between the town and the surrounding agricultural land in a productive way. Describing the agricultural belt, Purdom wrote:

This rural belt surrounds the town like the walls of a mediaeval city. It limits its boundaries, protects it from the attack of other towns, and preserves its shape and style. It also gives it finish and completedness. The ragged edges of the ordinary town... are not found in Garden City. There, where the town finishes the country begins... (Purdom 1949, 115–16).

As noted above, one of the major concepts for the development of the agricultural belt was to limit growth, and to eliminate the land speculation found on the edges of most towns. With a predetermined population limit, Howard's scheme involved the purchase of inexpensive agricultural land. Then, through the common ownership of the town and the charging of rent based on land only, it allowed the citizens of the town to benefit directly from the increased value placed on the land by urbanization. The controlled improvement of land was to produce dividends for the company—what Howard termed the "unearned increment" (Purdom 1913, 26). The agricultural belt ensured that the land value for surrounding farms would remain relatively stable. Further, the agricultural belt was intended to enhance the relationship between farm the and the town by creating a local market for farm products, thereby intensifying the production of the surrounding farms. According to H. Burr, Surveyor to

the First Garden City, Ltd., writing in 1913, there were approximately 300 acres used for smallholdings of a quarter acre (or larger), and twelve acres held for allotment gardens (Osborn 1946). By 1949 the area devoted to allotments had grown to 71.5 acres (Purdom 1949, 145).

Raymond Unwin, who would become an important proponent of town planning, wasconcerned with the visual beauty—or picturesque qualities—of townscapes, and commented on the ragged edges of modern towns, which he described as "...that irregular ring of half-developed suburb and half-spoiled country which forms a hideous and depressing girdle around modern growing towns" (Unwin 1971, 154). He argued for agricultural belts to define the edges of the town, and coherent gates on the major approach roads and railway stations. Further, he questioned the role of allotments and smallholdings in the agricultural belt, as he found these to often be unsightly, equating them with "shanties" (Unwin 1971, 164). The multi-functional aspect of the agricultural belt suggests that it played an important role in the development of the Garden City concept. However, the agricultural belt or greenbelt has also become an ambiguous kind of space encircling many cities around the world. As the concept for the greenbelt developed, it produced various problems, including increasing land costs and dispersing development beyond the belt (Freestone 2002, 82–83). In the original vision of Howard's plan, the agricultural belt played an active role in the life of the town, providing a vital interim layer between town and country. However, many subsequent greenbelts, while they conserve and preserve land, do not necessarily play this role.

The original agricultural belt was conceived as a fixed spatial element that acted as a permeable boundary, a habitat both cultivated and wild, a source of food, and a zone for managing waste. The bounding of the community was to provide a town-country interface, and, most importantly, to put an end to land speculation and the endless creep of cities—an anti-sprawl device. Further, as Robert Fishman states:

The garden city was also limited in size in order to concentrate and intensify the life that took place within its limits. The garden city was not only an escape from the overcrowded, inhuman metropolis but also a new and higher locus of urbanity, a place where a genuinely urban complexity of activities could be carried out within a human-scaled container (Fishman 2002, 58–59).

Fishman argues that the bounding of the city opposed the early twentieth-century tendency towards progress and expansion. Fishman also states that the model of a bounded community can avoid the high costs associated with the large metropolis, providing high-quality environments and stable conditions for employers and workers alike (Fishman 2002, 60–61). This model has worked, but has been undermined by the common disconnect between employment and residence (often linked to the automobile) and the uncertainties of employment. Fishman suggests that the boundedness of the Garden City is a vital, and overlooked, aspect of its legacy. The agricultural belt also protected the amenities of the town, supplies food, and restricts expansion on the edges (Purdom 1949, 447). The agricultural belt, or greenbelt, concept was supposed to check urban sprawl, dampen land speculation, stimulate urban infill, protect agricultural land and scenic resources, promote recreation, preserve town character, promote proximity to rural life, provide greenfield sites for particular institutions, and preserve wildlife and vegetation (Freestone 2002, 78). However, Freestone has recognized that the agricultural belt has generally restricted sprawl and protected agricultural land adjacent to cities. After analyzing various planning studies, he suggests that there are the following problems associated with this approach:

1   *Greenbelts increase land and house prices.*
2   *Greenbelts can protect land of average environmental quality.*
3   *Greenbelts increase car travel.*
4   *Greenbelts divert development deeper into the countryside.*
5   *Greenbelts increase development pressures within existing centers.*
6   *Greenbelts can have a range of unpredictable effects.*
7   *Greenbelts do not necessarily increase public access to non-urban land.*
8   *Greenbelts are not always environmentally just.*
9   *Greenbelts are a negative and inflexible means of development control.*
10 *Greenbelts do not constitute a regional settlement strategy (Freestone 2002, 82–83).*

From the concept of the agricultural belt developed a whole host of new green typologies that have that informed twentieth-century urban design: greenbelts, green wedges, greenwebs, green corridors, and greenways. The agricultural belt concept has been modified and made more flexible, as found in the "parkbelt" concept outlined by Unwin (Freestone 2002, 71–73). The "green girdle" is another model promoted by Unwin, as a "possibly discontinuous chain of open

spaces at the extremity of large cities" (Freestone 2002, 74). As a more practical model, it was adopted by London in the 1930s. Since the Greater London Plan of 1944, Britain has been the most determined jurisdiction in creating and maintaining greenbelts, where they have protected agricultural land, controlled sprawl, separated cities, and provided recreation amenities (Freestone 2002, 81). Other green-space typologies include the "parkway," or "greenweb,"which is a type of American green space that is created within the fabric of the city to establish separations and corridors. This notion was first developed by Frederick Law Olmstead in Boston with the "emerald necklace" set of parks, and was employed as an integrated system in Seattle in 1903 and in Chicago in 1909 (Freestone 2002, 75–76). The "green backcloth" uses the satellite city concept, set in large green areas around a major center. Promoted by Thomas Adams and others is the "green wedge or corridor," exemplified by Copenhagen's "Finger Plan" of the 1940s. This typology is an important method for injecting large green-space systems into the full structure of a city, and providing good linkages between the city and the surrounding country. The "greenway" is often a community-generated linear system that preserves ecosystems, and can incorporate trails (Freestone 2002, 88). The "green zone" is a large, permanently held green area that can be used as an urban-growth boundary, and can include wetlands, golf courses, national parks, and conservation areas. There are many overlapping types of greenspace, as Freestone states, citing Peter Calthorpe:

These basically comprise a threefold hierarchy giving form and shape to the region: greenbelts that form a natural and ultimate edge to the urban field, open spaces that form a large-scale connecting greenweb within the region, and spaces that provide neighbourhood identity and recreation (Freestone 2002, 94).

Beyond the two original Garden Cities of Letchworth and Welwyn (begun in 1919 under Howard's leadership), agricultural belts transformed into greenbelts which tended to concentrate on preserving surrounding natural and agricultural areas. This tends to be the case in the three American towns of Greenbelt (Maryland), Greendale (Wisconsin), and Greenhills (Ohio), begun during the New Deal era using Garden City concepts with mixed results. Notably, a greenbelt was not used in the earlier Radburn (New Jersey) experiment (Stein

1966; Arnold 1971). Greenbelts have become a common planning mechanism in Britain to control growth and preserve landscapes around major metropolitan areas, although they were not adopted by the New Towns program begun in 1946. One of the most enduring examples is the Ottawa greenbelt proposed by Jacques Gréber in 1950 and, since its implementation in 1956, managed by the National Capital Commission; a study undertaken in 1972 comprehensively documented the system at that time (Page 1972). In recent years, there has been much interest in the sustainable city, and linkages have been made to the Garden City (Hall and Ward 1998). Further, the American New Urbanist movement employs the greenbelt, and related typologies, on occasion (Duany and Plater-Zyberk 1991).

At Letchworth, the designers and builders of the town attempted to produce a synthetic model that addressed a broad range of urban issues, from structure, spatial organization, housing design, and civic education to political, social, and cultural organization. As an experiment in the design of a total community, it was relatively successful, despite the many years it took to reach its target population. The agricultural belt at Letchworth has been an enduring and important aspect of the town since its inception. However, the agricultural and economic impact of the belt has waned over time. Writing in 1945, F.J. Osborn stated:

For Letchworth was, and remains, a faithful fulfillment of Howard's essential ideas. It has to-day a wide range of prosperous industries, it is a town of homes and gardens with ample open spaces and a spirited community life, virtually all its people find employment locally, it is girded by an inviolate agricultural belt, and the principles of single ownership, limited profit, and the earmarking of surplus revenue for the benefit of the town have been fully maintained (Osborn 1960, 13).

While not originally defined by ecological, or sustainable, design principles, there is no doubt that the Garden City model codified many aspects of twentieth-century urban planning and design, and many of the innovations associated with the concept are now considered to be essential in contemporary sustainable urban design. Beyond the agricultural belt garden, there are four other types of green space types that contribute to the Letchworth plan. These are: 1) the central square and adjacent green spaces, which is not

significantly different from a traditional town center; 2) public parks, such as Howard Park and Norton Common; 3) neighborhood common areas; and 4) private gardens modeled after the rural cottage garden, in which gardening was intended to be a productive activity. Undoubtedly, the major green-space innovations were the agricultural belt, and the emphasis on private gardens and the act of gardening. The widespread use of greenery at Letchworth created a particular set of open spaces and inter-relationships between them, captured by Purdom in the following description:

In the Garden City the characteristics of the open space belong to the town as a whole. When you walk about the town for the first time what you notice most is the spaciousness of the streets and the great width of the sky. The roadways are, if anything, rather narrower than in other towns, but the trees and greenswards and the distance between the houses make the streets a continuous open space, to which occasional shrubberies and beds of flowers give additional variety. Each street has a slightly different character, so that you may walk around the town and think yourself to be in a garden all the while. In every part of it you can hear, if you cannot see, the unmistakable signs of the open country. In the very heart of the town the pleasant noises of the farm are heard.... There is no need for formal public gardens where this experience is shared by all.... There is no occasion to mention parks and open spaces, for the mere idea of them never occurs to you (Purdom 1913, 112–13).

What is striking about this passage is the emphasis on spatial openness, the presence of greenery, and the proximity of the surrounding agriculture. Rather than relying on the urban park as localized phenomena, green space was conceived as being generalized and open; in other words, the town is conceived of as a garden (Purdom 1949). Purdom argued that this was a comprehensive spatial idea that pervaded the town, supported by the extensive role of green space throughout the community. The continuity of green space from outlying farm through to private gardens in town was proposed as a unifying factor, breaking down historic divisions and creating interconnectivity, and yet also providing legibility between elements. The preponderance of greenery and green space provided an ecological overlay to the engineered infrastructural systems on and below the surface of the earth. The advent of many new green-space typologies during the twentieth century, inspired by the concept of the agricultural belt, would do much to reorganize the relationship of a city or town to its region, and also would aid in the significant impact of green-space networks on urban structures and organiza-

tions (Cranz 1982).

Ultimately, the Garden City drew together many ideas and forces that were operating in British society at the end of the nineteenth century—factors as wide-ranging as labor improvement, land reform, housing design, gardening, agricultural practices, community development, infrastructure planning, site design, governance, development and financing, and technology. Many aspects of twentieth-century urban planning were conceived or refined at Letchworth, including many ideas that have been both developed and rejected in subsequent iterations of Garden City thinking (Hall 1988; Cherry 1974; Buder 1990). As Purdom stated, Letchworth was conceived around the experience of being in a garden, at both the intimate level of the residential garden and at the communal level of the town (Purdom 1913, 113). Further, the use of the agricultural belt, or greenbelt, as a wide boundary separating the town from the country, and providing a protected zone for agricultural and cultural amenities, helped create the sense of a town engulfed in greenery.

The Garden City provided an urban model where the agricultural belt was integral to the plan of the town. The stated aim of the Garden City movement was to unite city and country (Howard and Osborn 1960, 46), to draw from the best of the two worlds, and to break down what was seen as an artificial divide; in other words, to activate or remove the historic boundary between town and country, allowing for a greater range of interflows between the two. This is augmented by green spaces throughout the town itself, and enhanced by the generally single-family housing fabric and the emphasis placed on private gardens. However, despite the successes of various greenbelt initiatives in Britain, Canada, and the United States, the role of the greenbelt has been largely reduced to an urban-growth boundary and as a mechanism for preserving landscapes. The economic import placed by Howard on the original concept has been effectively rejected; this is evident in the transformation of the original agricultural belt into the greenbelt. Nevertheless, the host of greenspace typologies that have emerged as a result of the Garden City provide a whole range of related urban amenities. The influence of Howard's theories has been widespread and continues to be felt, despite the fact that the Garden City as a total concept, agricultural belt included, has been largely abandoned.

REFERENCES

Adams, Thomas. *Garden City and Agriculture; How to Solve the Problem of Rural De-population*. London: Simpkin, Marshall, Hamilton Kent, 1905.

Arnold, Joseph L. *The New Deal in the Suburbs: a History of the Greenbelt Town Program, 1935-1954*. Columbus, OH: Ohio State University Press, 1971.

Buder, Stanley. *Visionaries and Planners: The Garden City Movement and the Modern Community*. New York: Oxford University Press, 1990.

Burr, H. "Agriculture and Small-Holdings in Garden City." In *The Garden City: a Study in the Development of a Modern Town*, 272–83. London: J.M. Dent & Sons, 1913.

Cherry, Gordon E. *The Evolution of British Town Planning: A History of Town Planning in the United Kingdom during the 20th Century and of the Royal Town Planning Institute, 1917-74*. Leighton Buzzard, UK: Leonard Hill Books, 1974.

Cooke, Catherine. "Russian Responses to the Garden City Idea." *The Architectural Review* 9 (1978): 354–65.

Cranz, Galen. *The Politics of Park Design: A History of Urban Parks in America*. Cambridge, MA: MIT Press, 1982.

Creese, Walter L. *The Search for Environment: The Garden City--Before and After*. Baltimore: Johns Hopkins University Press, 1992.

Duany, Andres, and Elizabeth Plater-Zyberk. *Towns and Town-making Principles*. New York: Rizzoli, 1991.

Fishman, Robert. "The Bounded City." In *From Garden City to Green City: The Legacy of Ebenezer Howard*, edited by Kermit C. Parsons and David Schuyler. Baltimore: Johns Hopkins University Press, 2002.

Freestone, Robert. "Greenbelts in City and Regional Planning." In *From Garden City to Green City: The Legacy of Ebenezer Howard*, edited by Kermit C. Parsons and David Schuyler. Baltimore: Johns Hopkins University Press, 2002.

Furmston, W.G. "A Small Holding in Letchworth." *Garden City and Town Planning Magazine* August (1920).

Hall, Peter. *Cities of Tomorrow: An Intellectual History of Urban Planning and Design in the Twentieth Century*. Oxford, UK; Malden, MA: Wiley-Blackwell, 1988.

Hall, Peter Geoffrey, and Colin Ward. *Sociable Cities: The Legacy of Ebenezer Howard*. Chichester, UK: John Wiley & Sons, 1998.

Howard, Ebenezer. *To-morrow; a Peaceful Path to Real Reform*. London: S. Sonnenschein, 1898.

Howard, Ebenezer, and Frederic J Osborn. *Garden Cities of To-Morrow*. London: Faber and Faber, 1960.

Miller, Mervyn. *Letchworth: The First Garden City*. Chichester, Sussex, UK: Phillimore, 1989.

Mumford, Lewis. "The Garden City Idea and Modern Town Planning." In *Garden Cities of To-Morrow*, edited by Ebenezer Howard, 29. Cambridge, MA: Faber and Faber Ltd, 1960.

Osborn, Frederic J. *Green-Belt Cities, the British Contribution*. London: Faber and Faber Ltd, 1946.

Osborn, Frederic J. "Preface." In *Garden Cities of To-Morrow*, edited by Ebenezer Howard and Frederic J. Osborn. London: Faber and Faber, 1960.

Page, Don. *The Greenbelt*. Ottawa: National Capital Commission, Development Branch. 1972.

Parsons, Kermit C., and David Schuyler. *From Garden City to Green City: The Legacy of Ebenezer Howard*. Baltimore: Johns Hopkins University Press, 2002.

Purdom, C.B. *The Garden City: a Study in the Development of a Modern Town*. London: J.M. Dent & Sons, 1913.

Purdom, C.B. *The Building of Satellite Towns*. London: Dent, 1949.

Simpson, Michael. *Thomas Adams and the Modern Planning Movement: Britain, Canada and the United States, 1900-1940*. London: Mansell, 1985.

Stein, Clarence S. *Toward New Towns for America*. Cambridge, MA: MIT Press, 1966.

Unwin, Raymond. "Nothing Gained by Overcrowding." In *The Legacy of Raymond Unwin: A Human Pattern for Planning*, edited by Walter L. Creese. Cambridge, MA: MIT Press, 1967.

Unwin, Raymond. *Town Planning in Practice; an Introduction to the Art of Designing Cities and Suburbs*. New York: B. Blom, 1971.

Ward, Stephen V., ed. *The Garden City: Past, Present, and Future*. London; New York: E & FN Spon, 1992.