

# Health Environment

## Abstract

The research explains the situation of the bad living conditions to which city planners, politicians and tycoons reacted. Both the healing environment (Wesfort) and the healthy environment (Company Towns and Garden Cities) have in common that the intention is to enhance the quality of life in order to increase productivity and community feeling. The health environment tries to find a balance between life in the city and life in the countryside. This balance allows citizens to live in an environment that is not threatened by industrial progress. The paradox is that the industry is not abandoned but used as a tool, becoming part of the daily life of people. The escape to the countryside therefore is enhanced by allowing productivity to take place. Past reconciles with the present, city and countryside merge.

*Keywords: Health, Healty, Healing environment, Garden City, Company Town, Wesfort, living conditions, community, ventilation, veil, proximity, distance, open space, hierarchy.*

Research Report  
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Project Wesfort; the challenge of Wesfort  
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## 0 Research question

During the Industrial Revolution the environment changed drastically which made some people react on it. People started to discuss the cities in which they lived; the living conditions and hygiene were taken into account. People were becoming aware and therefore action could be undertaken (Creese, 1966). In the same era the leprosarium of Wesfort -built in 1898- was a reaction on the rapid increase of leper patients across the ZAR. Also parallel to this - published in 1898- was the first book of Ebenezer Howard (1850-1928) about the Garden City which was a reaction on the dense and unhealthy city of the Great Britain.

Wesfort’s landscape and urban lay-out were designed to express a healthy environment that should contribute to the curing of the patients. Wesfort’s design therefore might follow the same principles applied by the Garden City Movement. To understand Wesfort as a healing

environment, the research investigates the tools and principles of the concept of the health environment, which can be seen as an overall term for both healing and healthy environments. Another example of a health environment constituted in the same era as Wesfort is the Company Town and the Garden City. Both were a reaction to bad living conditions and both concepts were a solution to improve people's lives. The comparisons make the Company Town and Garden City case studies that both explain the discourse of the 19<sup>th</sup> century.

Wesfort will be modelled back to the original state of Wierda's design in order to explore the pure concept of Wesfort as a healing environment, supported by the above mentioned similar health environments. Now the intention of the research is marked; Wesfort was designed as a healing environments, a place to cure patients from leper by giving them medical treatment and providing activities that makes use of the healthy environment, i.e. being in the outdoor and working in vegetable gardens. The research is not focussing on hospital architecture but on the abstract concept of a health environment during its constitution in the Industrial Revolution. Parallel to the Garden City Movement and its ascendants and descendants, Wesfort will be explained as a healing environment. This reveals the opposition between a healthy and healing environment; an urban concept such as the Garden City is a healthy environment; designed to be a better alternative for an unhealthy environment. Not necessarily to heal people but to keep them healthy. Wesfort was healing, a place to cure patients that suffer from some kind of disease. This research takes both into account since both environments are constituted in the same era and since both environments were constituted due to the same causes, hence the title of this research.

As mentioned before, both the Company Town, the Garden City and Wesfort were constituted in the same era. The supporting frame is time; the changing society of the nineteenth and twentieth century did influence city design and the way we should live in cities. Both oppositions and similarities form the research question:

What were the principles of the health environments as a reaction to the bad living conditions?

The aim is to answer if technological, political or social (or a combination) intentions formed the base of the reaction that health environments should be build.

Literature about the healthy environment and healing environment (Wesfort) will be compared. Wesfort is going to get a context in order to understand the intentions of this healing environment. Although there is a difference between a healthy and healing environment, the similarities and opposites might be interesting.

For the graduation studio of Heritage and Architecture the research about the health environment will give more insight into not only the intentions of a healing environment (Wesfort) but of Wesfort in the context of health environments that were all –not by accident– constituted in the end of the nineteenth century.

The research is part of the graduation studio of Wesfort which has the aim to research and redesign Wesfort according to the values that are present. Wesfort is threatened by a growing urban sprawl that is surrounding the green open space of Wesfort. For Wesfort there is a dilemma whether it should change according to the suburbs of whether it should change from within.

Broadening the subject of healthy into health environment might help in redeveloping Wesfort, taking into account not only the architecture of the site, but also the meaning of its architecture of the nineteenth century. Understanding the past makes it easier to change from within.

## **1 Healing environment**

The leper colony of Wesfort was built in the last years of the 19<sup>th</sup> century. In this period the Boer Republic, the Zuid-Afrikaanse Republiek, was executing a nation building plan in which a proper capital was built, funded by gold and diamond exports. Not connected to the sea, this state was surrounded by mostly British territory.

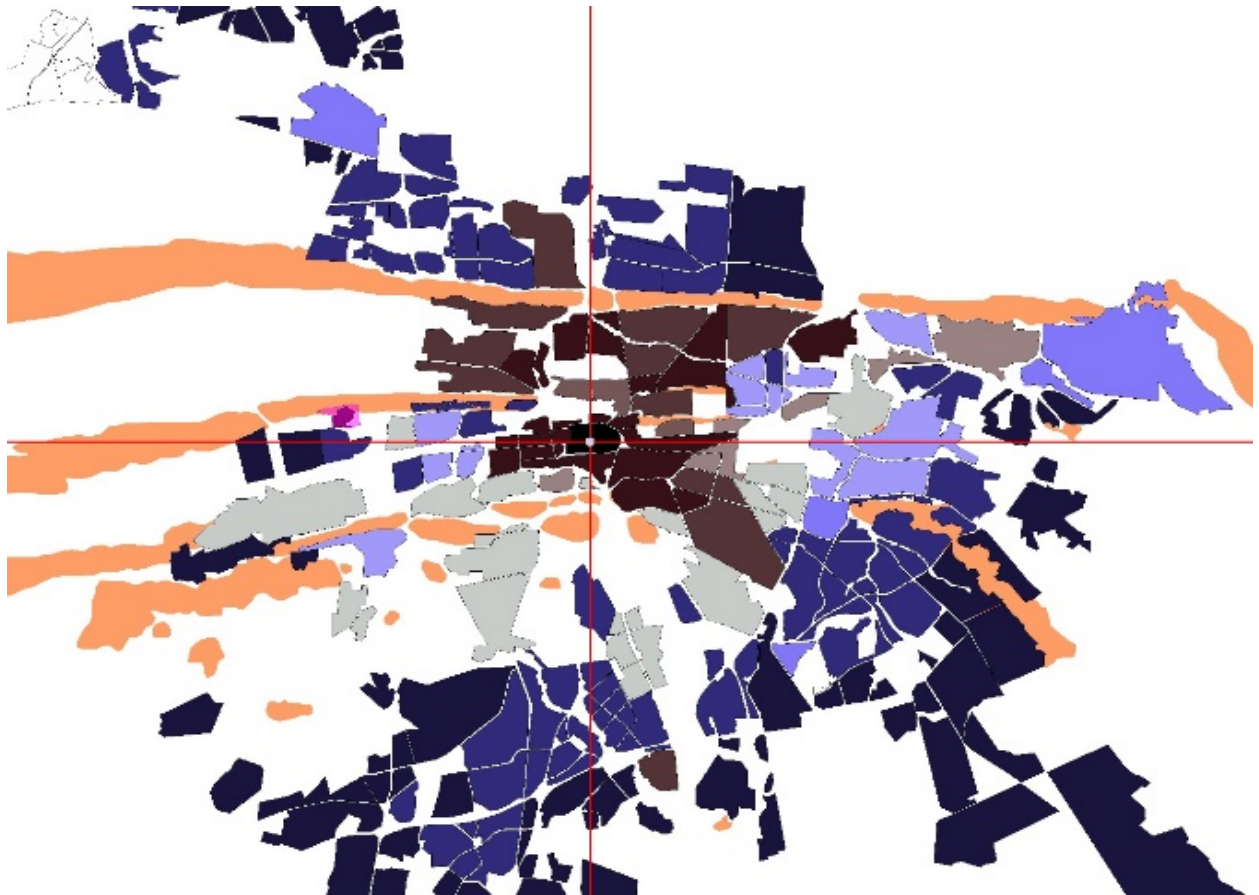


Image 1.1: Urban development of Pretoria and Wesfort. Wesfort is depicted in pink located at one of the ridges (orange). Pretoria's development started at Church Square (center of the map). From dark brown to light blue and eventually dark blue, the cities expanded mostly to the East, probably since more space was available here. The western part of the city contains more ridges and is therefore more difficult to build on. For a long time Wesfort has not been surrounded with suburbs. Source: (Group Analysis M-Scale, 2015)

Legend

- Patients quarters
- Doctors house - administration
- Laboratory
- Superintendent
- Stable
- Staff quarter
- Recreation room
- Hospital 1896
- Childrens house
- Kitchen and store
- Dutch Reformed Church 1899
- Black bathrooms
- Engine house

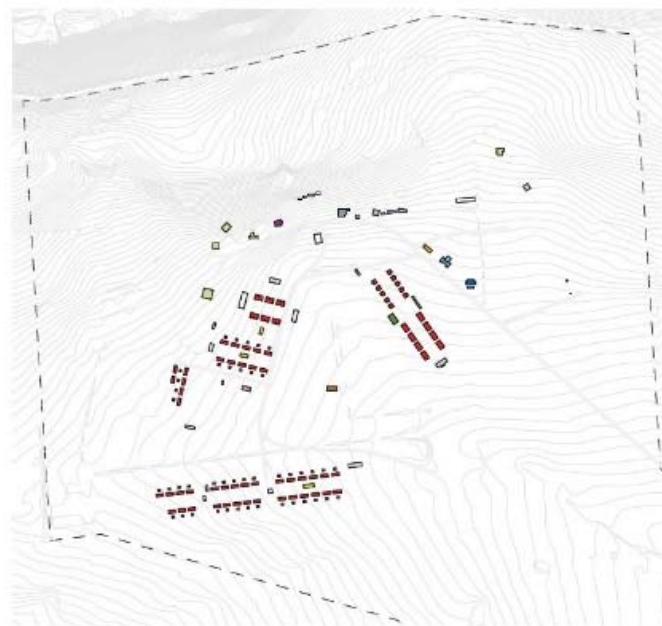


Image 1.2: First development Wesfort by Wierda. Source: (Group Analysis S-Scale, 2015)

The country was isolated but its citizens felt they were special and chosen to build a nation in the South of Africa. The enormous wealth gained by exploiting mines turned the ZAR from small Boer country into a flourishing nation. Therefore new public buildings were built; Pretoria was becoming a capital that would match other capitals around the world (Bakker, Clarke, & Fisher, 2014). At the same time new technical innovations entered the market. New thinking on health care changed the way people should be treated. To accommodate a group of people suffering from leper, a colony was built (Horwitz, 2006).

The construction of the Leproenenrichting nabij Pretoria was commissioned by the DPW (Departement Publieke Werken/Department of Public Works). Wesfort was built in the remote area in the West of the city. This part of the city was undeveloped which was helpful to prevent contamination (Bakker et al., 2014, p. 166). At that time leper was seen as a very contaminating disease (image 1.1 & 1.2).

In the book *Architecture of the Well-tempered Environment*, by Reyner Banham (1922-1988) the author mentions an industrializing nineteenth century characterized by bad living conditions (Banham, 1969, p. 29). The development of a new nation, including the leper colony of Wesfort, took place during this period in which a more efficient way of living was being formed. Industrial Capitalism brought new innovations that would eventually lead to a more social society. Since a lot of people were moving from the countryside to the city, a dense city with a lot of public space was needed. Architects followed society, by which new typologies arose. However, the city could not fulfill all wishes and became unhealthy. American historian Lewis Mumford calls the period between 1830 and 1930 the Paleotechnic era. Not fully developed technology was changing the (urban) landscape. Pollution became present. Profit and production were keywords (Garner, 1992, p. 3).

It is not as if in the Pre-paleotechnic era people did not consider health and living. The rich people in the cities of Delft, The Hague and many other Dutch cities lived on higher grounds (sand grounds); less moist and less flooding made these living spaces healthier than others. In nineteenth century Paris Hausmann cleared parts of the city center to replace it with wide boulevards and large building blocks (Watkin,

2001). The main reason was better social control, allowing a healthier society to arise. Although these plans changed and defined the urban landscape, it did not take into account the industry (which was not developed at that time). Banham makes clear in his book that in the nineteenth century cities changed rapidly (Banham, 1969, pp. 29-44). Wesfort and the concepts of a healthy environment were constituted during the paleotechnic era, and therefore might be seen as a reaction to the primitive industrial progress.

## 2.1 Causes

The cause of new urban design proposals such as the Garden City was the over-crowding; the city was becoming too dense. Over-crowding made the demand for good ventilation urgent. The industry caused bad smells and polluted air, but most of all, the presence of human beings in a closed space caused direct bad smells, and the ventilation was not sufficient enough to deal with it (Banham, 1969).

The Public Health Act of 1875 in Great Britain was an early reaction on circumstances that were bad. The spread of tuberculosis and social disorder in the narrow courts and yards in the dense cities made the government act. The urban instrument was the so-called bye-law street. People moved from living in dwellings with courts and yards to living in dwellings with wide streets with better social control and better ventilation (Creese, 1966, pp. 75-76) (image 2.1.1 & 2.1.2).

## 2.2 Technology

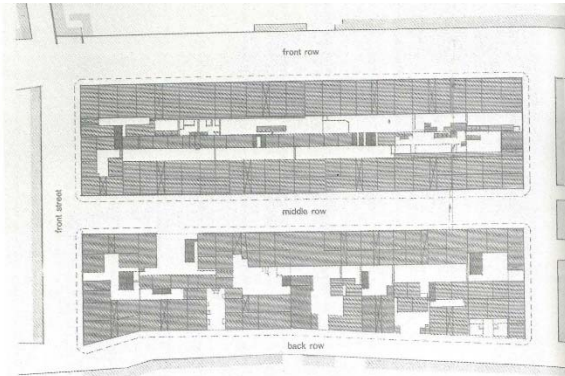


Fig. 26. Camp Field, Leeds, before improvement.

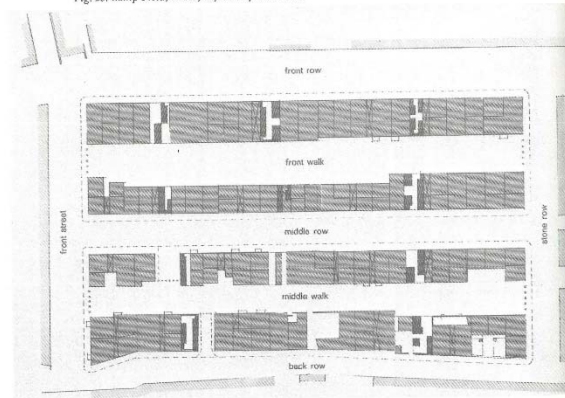
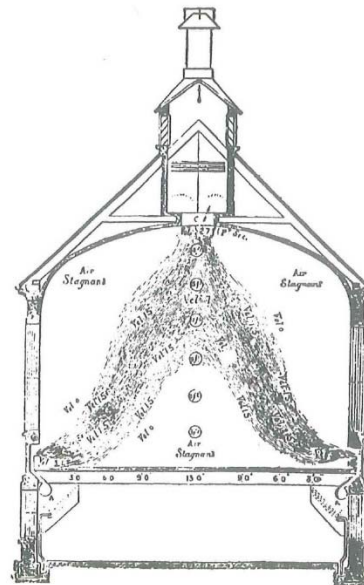
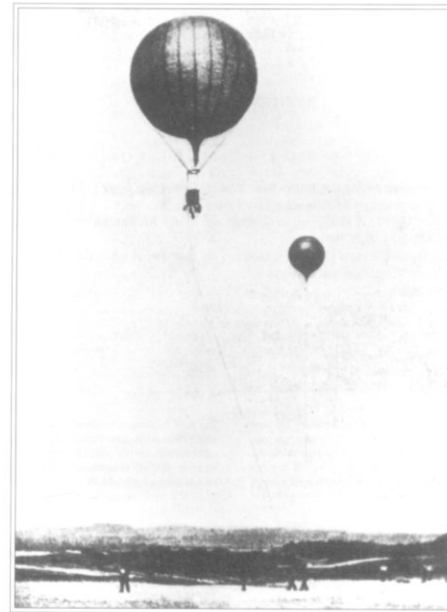


Fig. 27. Camp Field, Leeds, after improvement. At Camp Field, southwest of the town, bye-law streets were substituted for the older courts or yards, but they had no destination—instead, they were used as tidier, more open, courts, with posts at either end, continuing the conviction that a street should provide auxiliary living space for the houses, always too small in themselves.

Image 2.1.1: Camp Field, Leeds. Before and after improvement. The courtyards have been replaced by bye-law streets. Although they make streets more monotonous, the new situation is better ventilated, provides more sunlight and allows a better social control. Source: (Creese, 1966, p. 80)



Image 2.1.2: Wesfort hospital area in the western part of the leper colony. The hospitals are positioned in such a way, the prevailing wind ventilates the verandas and lanes, just as in the bye-law street. Source: own image



Top: Image 2.2.1: Testing wireless telegraphy with an air balloon during the second Anglo-Boer War. Source: <http://samilitaryhistory.org/vol112db.html>

Bottom: Image 2.2.2: Currents of air in a 'model' hospital ward. This image of 1880 illustrates the research of ventilation in buildings. Source: (Banham, 1969, p. 49)

Not only the government, companies and seekers for utopias reacted on the poor living conditions; many other groups of people started to discuss the built environment. During the turn of the 19<sup>th</sup> century many new technologies were introduced which influenced the architecture (during the Anglo-Boer war new cannons entered the market and wireless telegraphy



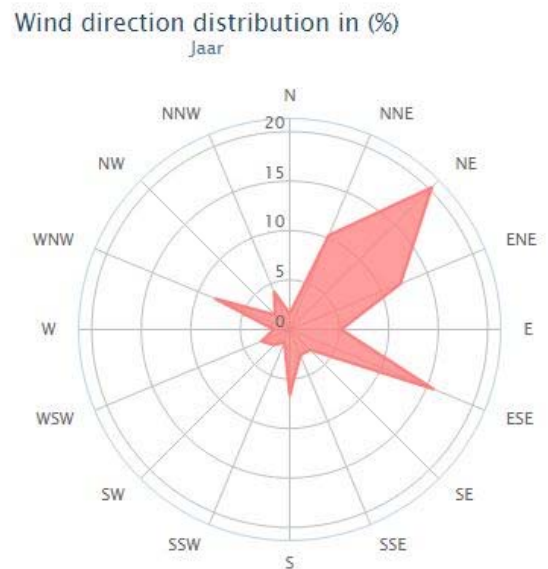
experiments took place (image 2.2.1)). However:

‘...the sudden availability of electric lighting marks the turning point in that revolution, the ferment of improvement and innovation had been going on for most of the century.’ (Banham, 1969, p. 44)

Banham states the introduction of electricity in the built environment was a turning point in the technical innovation of climate control (Banham, 1969, p. 44). The need for more space (less dense) could not only be solved by moving out of the city, since the human breath would not disappear. Therefore the technique of improving ventilation had to be adapted (Banham, 1969, p. 29). In Wesfort electricity was available. An engine room providing a current to lighten the ‘white’ quarters is the evidence. At the same time writer and urban planner Ebenezer Howard states all the machinery in new cities should be powered by electricity (Osborn, 1965) which follows the increasing electricity consumption of the years before Howard wrote about the Garden City (image 2.2.4). Both health environments adopted this new applicable technique. Electricity symbolizes the applicability of technique, improving living conditions for real. Not only the health environments as new concepts improved living conditions, the industry was trying to do the same; progress in the polluting industry was a cause for reducing air pollution. For example the use of secondary air to provide better combustion reduced dangerous exhaustions in factories (Creese, 1966, p. 67). Most of the buildings in Wesfort have ventilation systems; the hot sun warming the steel plated roof makes the air inside warm. Special ventilation holes make the air escape (image 2.2.2). Wierda even made these elements part of the architecture, giving chimneys and ventilation elements an ornamental task too.

But not only new technology dealing with climate control, also the climate created by nature can be a tool to improve climate control. Observing wind directions can help positioning dwellings and factories in such a way that they do not harm each other (Miller, 1992, p. 52). This principle is a reason for the introduction of the wide bye-law streets (paragraph 2). And natural ventilation was applied in Wesfort. Although it is not a direct industrial (mechanical) innovation it is being considered

in an era in which health became important (image 2.2.3). The Dutch Reformed church in Wesfort, designed by Klaas van Rijse had an octagonal structure (Bakker et al., 2014, p. 168). In the floorplan, a distinction between the seats for the patient and the pastor is visible. Between the seats and the pulpit an open space –well ventilated- prevents contamination.



*Image 2.2.3: Prevailing winds in Pretoria during the whole year. The prevailing wind comes from the North-East, although it should be stated that the wind directions vary over the year (wind directions). When the wind direction is placed on top of the map of Wesfort, the position of the buildings can get extra substantiation. All public buildings are located on the windward side of Wesfort. All patient quarters –except the white clusters- are located on the leeward side. This means all buildings on the leeward side get the air that has passed the building on the windward side. Or better stated, the buildings on the windward side get the freshest air available at Wesfort. The form of the hierarchy at Wesfort is (partly) determined by the ventilation. Source: windfinder.com.*

A third important innovation that reacted on the bad living conditions was the ability to convince people to change these conditions. The new science of statistics made urban planners and developers more convincing in their reasoning about better living conditions in –for example- a Company Town (Creese, 1966, p. 115). In a fast increasing population graphics about (literally) life and death became tools to cast light on the situation of the late nineteenth century.

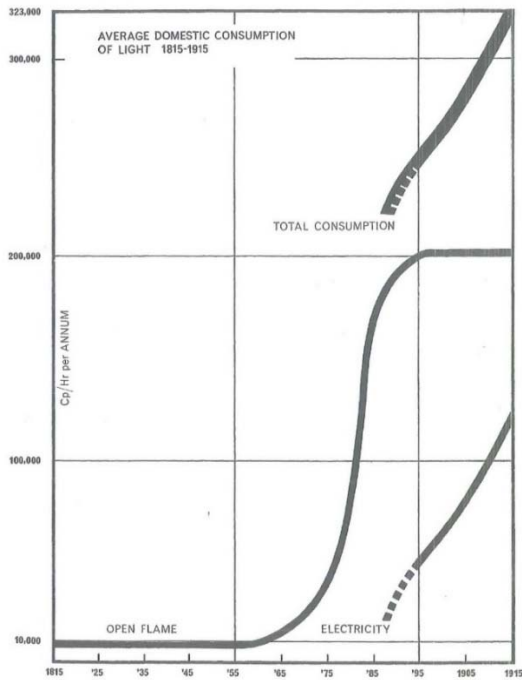


Image 2.2.4: Number of electricity consumers. Within a few year the amount of people using electricity in their house increased rapidly. It is a new technology not only entering the consumer market but is also adopted by the consumers. The modern era has started. Source: (Banham, 1969, p. 62)

In short, during the second half of the nineteenth century architects, city planners, the government and the medical world started to react on the bad living conditions. New technology and statistics made implementation possible. The distinction between a healing and healthy environment is not important in the sense they both took into account the same principles of reacting on situations that were being investigated for the first time and they both adopted the same innovations. The major difference is that the healing environment was built to support treatment, while the healthy environment wanted to prevent diseases to occur and to spread.

### 3 Company Town; 'wholesome air and open space'

The first examples of substantiated and healthy settlements reacting on the existing living conditions are the Company Towns. The Company Town can be described as a town built and maintained by a company, housing people that work for the same company in a healthy environment, mostly founded in the second half of the nineteenth century or later. To make the inhabitants (employees) feel comfortable, the Company Town was designed to be attractive. The town can be called a healthy environment, being a healthy alternative for the polluted city (Garner, 1992). In the Netherlands Agnethapark is a good example, and worldwide all Company Towns (and neighborhoods) have in common:

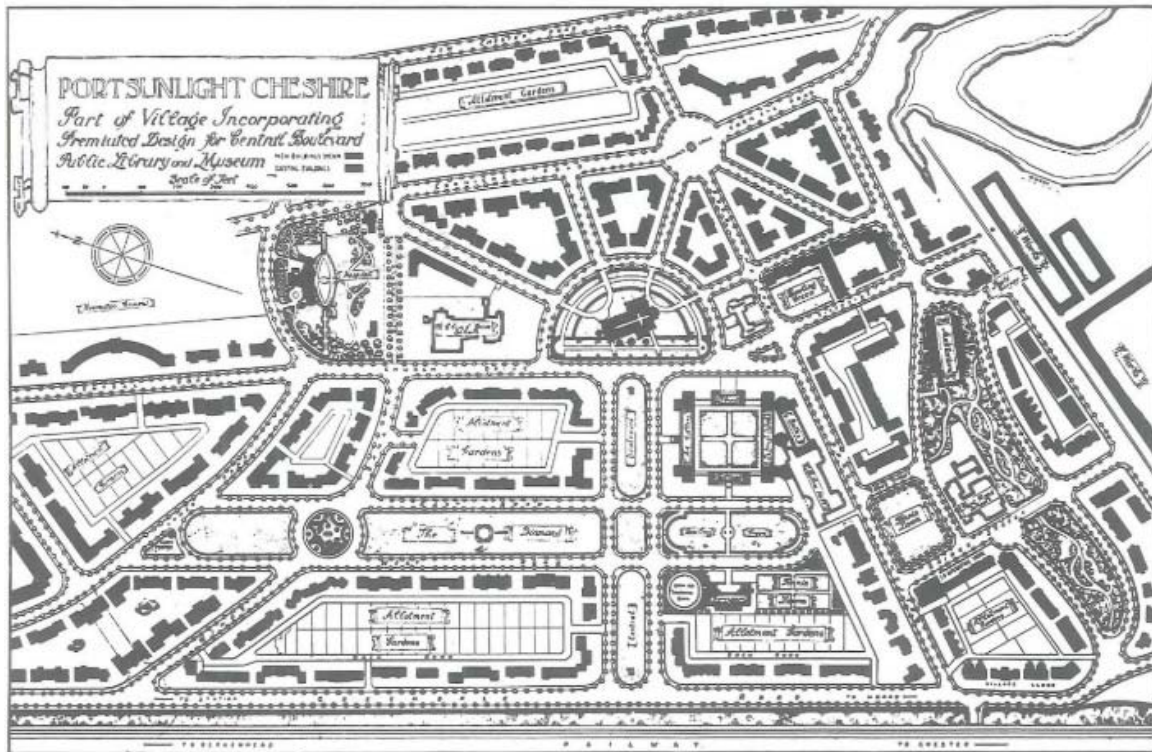


Fig. 52. Revised plan of Port Sunlight, incorporating the premised plan of Ernest Prestwich; Thomas Mawson, 1920. An axial plan has been developed and monumental buildings introduced, in emulation of the American City Beautiful movement.

Image 3.1: Port Sunlight. Parks, public buildings and allotment gardens are architectural tools that enhance the feeling of living in a community. For the company the purpose is to make the employees happy and therefore productive. Source: (Creese, 1966, p. 135)

‘Well-designed houses, parks, schools, libraries, and meeting halls, all set within an attractive landscape, represented an unusual degree of interest by the developer. But equally exceptional were the social programs that extended to the families of employees.’ (Garner, 1992, p. 4)

Both the variety of functions within the town and the social cohesion between its inhabitants were emphasized in a Company Town. As in a mediaeval town, an almost feudal system in which the master (employer) took care of the people (employees) would enhance the interdependency (community) and therefore the livability.

The purpose of the Company Town however remained to make production as effective as possible. The people were kept ‘healthy’ in order to make them more productive in the factories.

Two major Company Towns owned by influential people will be described shortly: Port

Sunlight founded by Leverhulme (image 3.1) and Bournville founded by Cadbury. Both industrialists of Port Sunlight and Bournville had a major influence on the forming of a new society in industrial England. Cadbury -who was a pacifist- bought the London Daily News to publicize his distaste for the military intervention in the ZAR (the Anglo-Boer War) (Creese, 1966, p. 114). Next to that Cadbury not only influenced his employees’ form of living but also their way of living by recommending them to wear ‘...stout shoes...bed warmers...’ and that they sleep ‘...with their mouths closed.’ (Creese, 1966, p. 109). And this power is proved by his capability of buying a media form.

Lord Leverhulme compared the new modern domestic architecture with naval architecture, stating traditions should be disregarded in order to build for the masses of the people (Creese, 1966, p. 131).



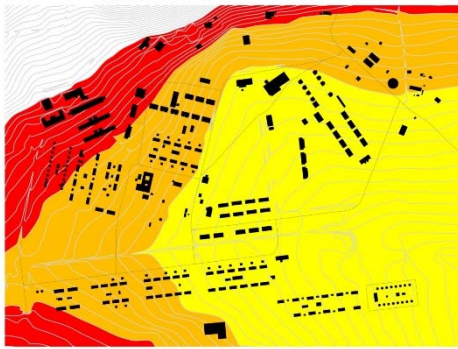


Image 3.2: High differences in Wesfort. The public buildings are all located on higher grounds, overlooking the patient quarters and creating a hierarchy. Source: (own image, 2015)

Both examples of the ability of the industrialists to influence society emphasize the importance of their role in this era. The motive was not only to enlarge the influence of the industrialists on city planning but also on company branding. The factories in Port Sunlight produced soap and the Company Town represented the clean(ing) products by showing the healthy elements adopted (Creese, 1966, p. 131). The same as in the industrial city, production was a keyword, with the tycoon on top of the system. This presence of hierarchy was also formed in the urban scheme. The church, chapel, library, public hall and institute are grouped on the hill overlooking the Extension of Port Sunlight (Jackson, 1985, p. 85). In Wesfort the same public buildings overlook the patient quarters (image 3.2). This social aspect of control is therefore more than symbolic. The layout of the first period of Wesfort was inspired by Dutch health institutions and similarities between Wesfort and for example Veenhuizen can be found (Bakker et al., 2014). The main administration building had a clear view to a cluster of patient rooms. Designed in a formal way, symmetrical and with a style that represents a well-organized government, the main building –together with the church and the post office- was the first building to see when arriving at Wesfort. The church represents religion, to be more specific, the Reformed Dutch Church that not only had a community role but also a political one. The ZAR was very religious and churches always had a central role. Next to the church the administration building – built in the so-called Wilhelmiens style- represented the new state. Designed by Wierda

the architecture symbolised the new nation that was capable of organizing itself. It was able to build a leper colony that represents the new health system of the new nation. Politics and religion had a central role, not only in Wesfort. The next chapter will stress the importance of religion and politics in the Garden City, another health environment.

#### 4 Utopian reaction: Garden City

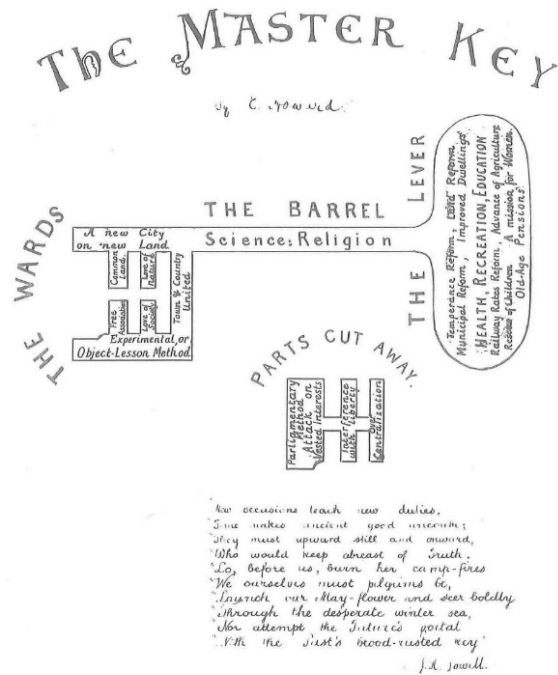


Image 4.1: The Master Key. Howard's first concept for a new city, combining science and religion. Source: (Beevers, 1988, p. 41)

The Company Town tried to interfere in people's life; the tycoon tried to implement his view of a healthy society. Ebenezer Howard wanted to make people be able to make their own choices. His vision for a town in which all is organized and owned by the people had a socialist perspective.

According to Howard, science and religion should be in harmony, being the barrel linking lever and ward. The lever is the motive for change; social reforms that make the barrel make a new society into action. In the wards town and country are united into a new city, a new society (Beevers, 1988, pp. 40-41) (image 4.1). Altogether the three elements for a key that opens a new healthy environment. Just as in the Company Town the presence of the church is of great importance, which is also the case in

Wesfort. The religious government controlled the Health Institute and therefore should be present, with the church on higher grounds, on top of the hierarchy. The difference is that in Howard's vision science and religion are tools to enable a better living environment, symbolizing the unity of all people building a Unionville.

However the spirit of Howard's time could not be convinced with socialistic reasoning. Therefore Howard had to change the perspective, adding more liberal proposals in his plan, adding scientific calculations and changing the name of his town.

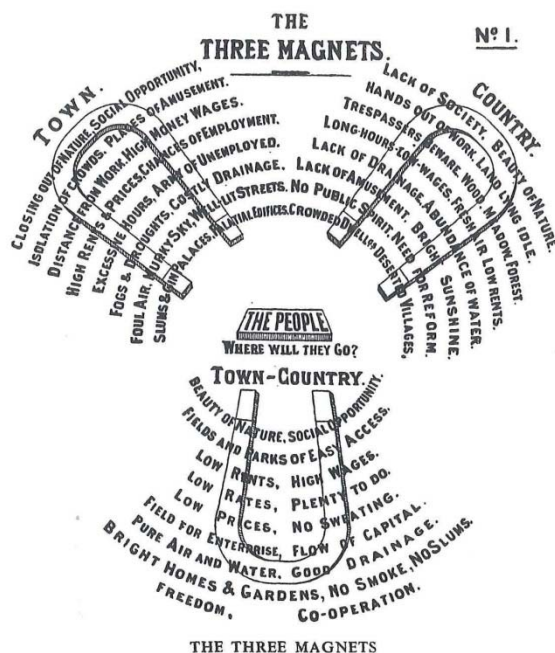


Image 4.2: Three Magnets. Both the advantages of the Towne and Country should be combined in the Town-Country, answering the rhetorical question. Source: (Osborn, 1965, p. 46)

The Garden City is described by Ebenezer Howard in the book Garden City of To-morrow. In this book diagrams show the perfect Garden City (Osborn, 1965). According to Howard, the Garden City consists of two elements; city and countryside which should be in harmony (image 4.2). The city should not be dense while programs of open space with gardens and parks should enhance the feeling of living in a village. In the countryside more open space and lower densities would enhance the pleasure of the citizen. It is a traditional, almost mediaeval view towards city planning, in which the autonomy and locality is emphasized. Just like the Company Town, the Garden City is

designed as a healthy environment, being a proposal to a new healthy way of living. In order to fit his earlier proposal for Unionville, some elements were redefined:

'...the town as the symbol of society and the country as the symbol of God's love and care for man.' (Beevers, 1988, p. 59)

Science and religion therefore were present, although different analogies were used, creating a sphere this proposal is more focused on production and progress.

The Garden City was a solution to the polluted dense city. In order to improve society cities should be built from scratch. Howard's scheme was an escape to the country, going back to the social city in which the people were able to influence their environment.

Howard criticized not only the urban form but the urban system as a whole. According to Howard the municipality (the people) should own all grounds, leasing them to private companies. In that way no ground speculations could occur, making it cheap to build large dwellings on agricultural priced ground. This system of ownership would convince '...Tory and Anarchist, single-taxer and socialist, individualist and collectivist...' (Osborn, 1965, p. 37). Howard was not only making schemes for new cities, but for new societies.

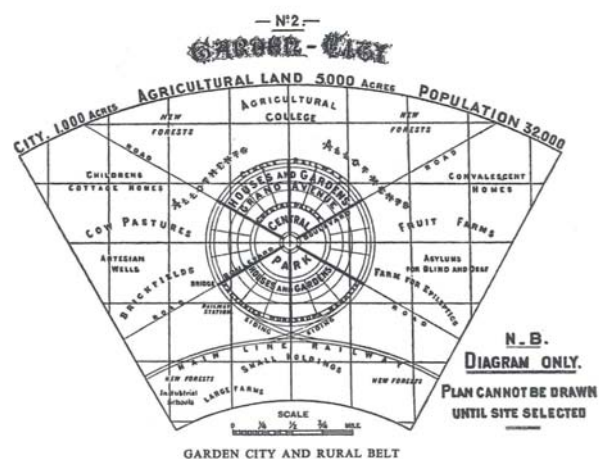


Image 4.3: Garden City and Rural Belt. N.B. Diagram only. A variety of program spread over a low density city, surrounded with countryside. This ideal city should house not more than 32.000 people. Source: (Osborn, 1965, p. 52)

The program described by Howard is also an implementation of the advantages of both the countryside AND the city. Parks and agriculture

and industry and railways are all present in the Garden City. According to Howard a healthy environment is not only based on open space and trees; the technology delivered by factories and good infrastructure make healthy cities possible too. 'In this splendid avenue...occupied by public schools...churches, of such denominations as the religious beliefs of the people may determine...' (Osborn, 1965, p. 55)

'...not a compartment of a model lodging house, not the number so-and-so Paradise Row, but a cottage all of our own, with its little garden, its healthy air, its clean kitchen, parlour and bedrooms.' (Jackson, 1985, p. 46)

Ruskin, one of Howard's followers, stressed the importance of sunlight and ventilation. At the same time, the urban layout should be given the streets subtle twists in order to create the picturesque. Focus points should be the school, a hall and a church (Jackson, 1985, p. 46). The focus on public buildings emphasizes the feeling of being part of a community. The community is placed back into a more feudal society in which community and form are unified. Again the characteristics of a Company Town are recalled here.

'The aim was...to instill beneficial habits of temperance and self-sufficiency into the working-class inhabitants.' (Jackson, 1985, p. 83)

The plot sizes of the dwellings were formed in order to allow the inhabitants to have large back gardens where they can grow vegetables. This labor on the soil was designed for compensating the labor in the factories (Creese, 1966, p. 114).

'Both conditions anticipated two of the later conscious principles of Parker and Unwin: low density on the land and a reduction in the length and the number of streets necessary for residential development.' (Creese, 1966, p. 110)

This allowed for flexible infill, making the town grow more organically. Or as Lord Leverhulme states; that houses should only last for fifty or sixty years, since by that time the construction methods would be obsolete. Steel and concrete should then be applied (Creese, 1966, p. 132).

Technology and innovation are not likely to be linked to the Garden City. Garden Cities look traditional, dull and even mediaeval. However,

the Garden City is a result of technical innovations, industrial progress and is the answer to a more social society. Garden Cities can be seen as an experiment, becoming a symbol of empirical tradition (Unwin & Parker, 1901, p. 92). The preferred outcome would be the forming of an organized life, an organic city or village and a home of a community (Jackson, 1985, p. 41).

Ebenezer Howard was one of the first who made a consistent and well substantiated scheme. A parallel with Wesfort can be made; both Wesfort and Howard's Garden City were constituted in the same era. Both Wesfort and the Garden City were a reaction to changing circumstances. Wesfort was built because they thought leper from now on could be cured –if done in a proper way, in a remote area. The Garden City should have been a cure for the unhealthy dense city, just as the Company Towns.

It was the intention all inhabitants of a Garden City would find their employment locally (Osborn, 1965, p. 13). However this system did not stand. Nowadays most jobs are available in city centers or industrial areas. People live in suburbs, far away from the jobs. Therefore valuable time is spent on commuting which weakens the local communities (Osborn, 1965, p. 15). People spend time travelling instead of being in the neighborhood. Howard did mention good public transport, connecting satellite cities with the central city, but his vision of electric transportation and production (Osborn, 1965, p. 55) was overtaken by individual (petrol fed) transport, making it easier to choose; people can therefore decide where to live and where to work. His ideal society became too capitalistic minded, which lacks the importance of a community. At the same time new suburbs arose that lacked variety in program, but did have in common the low density. The vast suburban landscape has the similarities with a Garden City. But Munford states (in 1945) that Howard was not advocating urban sprawls. On the contrary, his Garden Cities were not much less dense than the overcrowded city of London (30 people per acre versus 57 in London).

A healthy environment is not only about providing a space for people to feel physically healthy. The Garden City was not designed to make people cough less only, it was also designed to make cities socially healthy. Social reform, religion, science and liberalism are all taken into account making the Garden City not

only a plan for a new city, but also a plan for a new society. This new society is the health environment.

Howard's scheme was not applied many times. Only Welwyn and Letchworth are built according his scheme. When Letchworth was being 'crowdfunded' not many people applied. Companies were afraid of moving to a new place, having to leave existing sites. Therefore not many new citizens wanted to apply (Beever, 1988, pp. 92-93).

## 5 The veil: English Landscape Garden Style

In Howard's description of the Garden City a specific program is planned. In the diagram of the Garden City, a circle with layers as in a tree trunk, show the different functions. Howard notes correct that it is a diagram only. He explicitly writes the plan of a Garden City can only be drawn when the site is selected, which means, when the topography is known (image 4.3). Only then, cities can be designed.

Wesfort was designed as a combination of the healing environment using both practical and ornamental elements. In the master plan the patient quarters look like islands, connected by open spaces and lanes. Wierda was influenced by the -at that time- very popular English Landscape Style (Bakker et al., 2014). All the different elements that are applied on Wesfort make the site difficult to comprehend but cannot be seen without each other.

The Garden City Movement was a reaction to the dense and polluted city. To contrast with the brick and iron city, a softer environment was projected on a Garden City. An atmosphere was evoked that refers to nature, being an escape to a romantic garden. Although the English Landscape Garden Style as we know it is already been described in the 17<sup>th</sup> century (or even before that) the application and -perhaps more important- the validation was created during the industrial 19<sup>th</sup> century.

Joseph Spence became famous after writing about English gardens. In a letter to the Reverend Mr. Wheeler, Spence almost makes a checklist of elements that should be present in an English garden. In no less than sixteen rules, the professor mentions themes as the Genius of the place, the mix of useful things and perspective observations. His conclusion is -to

be stated in a single word- 'variety' (Hunt & Willis, 1988, pp. 268-271).

'From an even earlier and more famous person writing about gardens the authority is deriving that gardens should have '...serpentine lines, natural treatment of water, rural mounds, wooded theatres, and for the rejection of 'Nice Art/In Beds and curious knots' in favour of 'Nature boon/Poured forth profuse on Hill and Dale and Plaine'.' (Hunt & Willis, 1988, p. 79)

Written above is a quote by John Milton from Paradise Lost, in which a paradise as a garden is depicted. And again the conclusion can be made that a good garden contains a lot of variety.

In De Esthetische Revolutie Heumakers explains the reinterpretation of the meaning of art. Art developed in the era of the Enlightenment and the Romantic period into an autonomous subject. Both eras emphasized the individual mind. After centuries of copying Roman architecture and philosophy, personal development became important. Until then the aesthetics were considered as part of the reasoning and the sciences. The purpose of art was to convince or to represent a god or king. From now on the aesthetics should have its own autonomy in order to develop. The purpose of art became to please, and nothing more. Beauty was a goal not a tool (Heumakers, 2015). Philosopher Burke went one step further. According to him, beauty could develop. When something excites us a lot, we become possessed by it, feeling humble. The sublime is evoked. Where beauty is small, the sublime is vast (Boulton, 1958).

Obscurity can be compared with a veil. The veil covers an object, making us excited and curious. We want to unveil the object to see its beauty (Starobinski, 1989, pp. 1-2). So it can be stated that it is the veil that makes the object interesting; the veil is like the sublime, something that enhances the obscure. The vastness, the organic routing in English Gardens can be compared with the veil that make us want to investigate and walk through the garden. The escape from the (polluted) reality would fit a Garden City and can be seen as a reaction to the rational and unhealthy world.

However, it was important false imitation should be avoided (Jackson, 1985, p. 65). The industrial town should use the existing landscape, using the existing differences in height, in order to fit the new town in its



surrounding. Adding height differences can be applied but should not falsify the surroundings. Perhaps Unwin –another pioneer in urban designing- explained it the best, arguing the new town should be comprehensible yet human:

‘A degree of underlying order was essential to allow the plan –and more importantly the ultimate settlement –to be comprehensible, but he stopped short of a forced symmetry, ‘only appreciable on a paper plan or from the car of a balloon’.’ (Miller, 1992, p. 115)

Hierarchy in the layout is strongly present at Wesfort. The public buildings play a major role here. In the Garden City described by Howard, the public buildings are located in the center of the diagram. All boulevards run from the periphery to this center, making the public buildings easy accessible yet creating some distance since they are positioned in a formal area of importance (image 5.1 & 5.2). The administration building in the East and the (later built) hospital buildings in the West of Wesfort are all located on the higher grounds. From here the surveyors (doctors and administrators) have clear views on the patient quarters. From the other point of view, the patients see the public buildings from a lower level and are able to feel the representation of the authority.



Image 5.2: The picturesque is present in Wesfort. However, the orchards, meadows and vegetable gardens do not only please, they are production landscapes too. Source: (own image, 2016)

Wesfort between 1930-1950 shows the landscaping with its trees, gardens and orchards. The entrance lane is planted with eucalyptus trees. Arriving at Wesfort is emphasized. The lane forms a focus point towards the reception building. In Wesfort a second lane runs south from the reception building and then continues to run west. From the reception area, this lane brings people to the centre of Wesfort. At the same time, the lane forms a visible barrier between the northern and southern part. In this way the more privileged white patients would not see the black patients living at the southern part of Wesfort. Another physical barrier is the canal running west-east. A routing is designed in Wesfort that is not only picturesque but also practical. The vegetable gardens do not only provide food, they also provide work for the patients. The patient quarters do not only give the feeling of being in the countryside, they also allow for good ventilation. In short, Wesfort was not only designed as a picturesque English Garden, but also as a Healing environment. Wesfort was built in an era in which healing environments

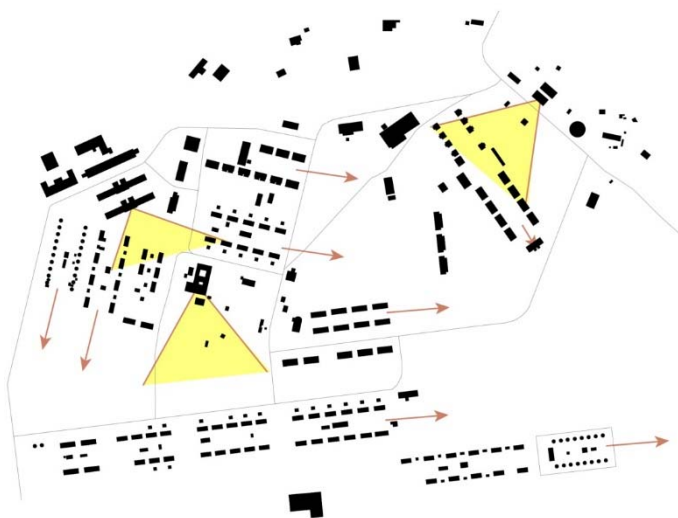


Image 5.1: Vistas and overviews. The public buildings all have a clear view over the patient quarters, while the clusters all have vistas looking towards open space. Source: (own image, 2015)

were a big topic, not only by architects but by engineers too. But they all had in common that they created a veil.

## 6 Paradox: proximity and distance

Both Wesfort and the Garden City are a result of technical innovations and implementations that were drastically changing the built environment. Wesfort adopted the change. At the same time Wesfort as healing environment has the characteristics of a settlement constituted by traditional ways of living. Just like the Garden City, the small scale and the community feeling is emphasized.

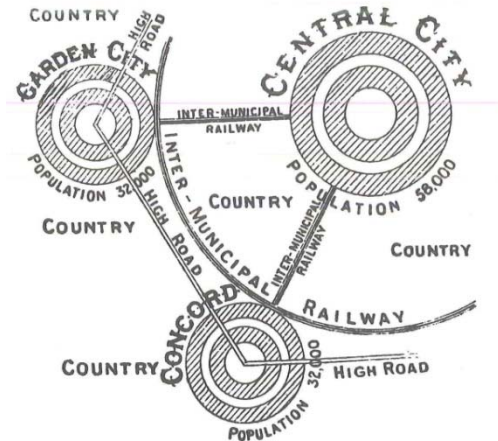
The Garden City Movement was not ignoring the industry; it was using the progress of the industrial revolution and the social and health principles of villages to be in harmony. Instead of ignoring the progress of the Industrial Revolution, the Garden City was searching for a more balanced and integrated solution for the unhealthy city. Both modern (city) and traditional (countryside) advantages were used.

'...its deeper harmony and greater success would depend upon how well it reconciled the past with the present, town with country, and agriculture with industry.' (Creese, 1966, p. 5)

The traditional and the modern are both present in the paradox of a Garden City. On one hand the Garden Cities and the central city described by Howard cannot be seen separately; both are part of a metropolitan area, since both cities produce and support each other, being connected with each other with high quality infrastructure. Together the cities form one metropolis, supporting each other and attributing to the communal economy (Osborn, 1965, p. 142) (image 5.1 & 5.2)). This is a modern view towards city planning, in which everything is interconnected, organized and progressive.

The Garden City was connected to the central city, but at the same time had a distance towards the central city. The Garden City was surrounded by countryside and all of its advantages (distance) (Osborn, 1965, p. 142).

The paradox is about the escape from the current situation (polluted city) and about the adaption of the current situation (technological innovations).



Top: Image 5.1: Garden City and Central City. The proximity between both is created by good infrastructure and interdependency. The distance is created by open landscapes, different identities and a certain autonomy. Source: (Osborn, 1965, p. 46)

Bottom: Image 5.2: Agnetapark, Delft. The cottage style evokes a countryside and low density atmosphere. At the same time the factory in which the inhabitants worked is visible and very nearby.

Perhaps the essence of Wesfort is that it was designed both as a picturesque landscape that enhances the community feeling that would help in the healing process of the patients. At the same time functional elements (good ventilation, orchards and vegetable gardens) enhances the community feeling too.

For the redevelopment of Wesfort, the value of the paradox is a chance to continue Wesfort as a place that reconciles the past with the present, Pretoria with the ridge landscape and the informal and formal.

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