

Figure 1: Representation of between-wars modest houses in the Brussels dwellings stock before 1945.



Figure 2: Urban distribution of worker's houses in the garden cities (from 1920)

Preamble

« Let's make houses which will allow us to live as pleasantly and economically as possible, and in as hygienic a manner as possible; the rest follows by itself. » J.J Eggerix

The between-two-wars modest houses represent around 5 % of the Brussels pre-1945 housing stock, according to the analysis of residential stock carried out based on the land registry table No. 212AM (situation at 01.01.2012). It is estimated that worker houses in the garden-cities represent around half of these between-two-wars modest houses.

Historic background

Two of the main problems after the war are the reconstruction of the damaged cities and the shortage of housing assessed at some 200,000 dwellings in Belgium. Reconstruction is slow in the historic centres and is done identically, without taking into account the aspirations of the modernist architects of the period. These then turn to the construction of social housing.

The residence of many architects abroad during the war years plays a significant role in the construction of these dwellings. Indeed, a consensus is established and considers the garden-city concept as the best solution to the problem of worker housing. Under the influence of the English Garden City Movement, preference for social housing is most often given to the construction of single-family houses located in garden-cities, in the communes surrounding Brussels.

In 1917, the Union of Belgian Cities and Communes organises three competitions for the construction of garden-cities at Couillet, Jemappes and Willebroek.

In 1919, the national union government creates the SNHL-BM (Société Nationale des Habitations et Logements à Bon Marché). This is tasked to encourage and coordinate the initiatives of cooperative societies of tenants, by granting them long-term loans at low rates. It gives a new boost to housing construction : in a few years much social housing – around the cities, close to public transport stops or terminuses - is constructed throughout the country and the city receives a veritable fringe of garden-cities.

In Belgium, garden-cities depart from the idea of Ebenezer Howard (English theoretician), who foresees the construction of entire towns combining housing and professional activity. They are limited to the construction of single quarters of housing with some community infrastructures (schools, dispensaries, shops, playing fields) and cultural and sports installations intended to reinforce links of solidarity.

But the fear of a «red» belt around the major cities and the stopping of the German war reparation payments – that are used as subsidies to the worksites – lead firstly to the suppression of the collective equipments initially planned and then to the final and rapid abandonment of these construction programmes from 1925.

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In November 1930, the third CIAM, organised in Brussels, defends the apartment building as the one model for solving the social housing problem. The construction of garden-cities was gradually abandoned by the social housing societies, in favour of apartment buildings. Planned and managed by cooperative societies, the garden-city represents both a new social and urbanistic conception. It is a matter of creating around the city a new district that provides the transition between city and country. The garden-city would also enable better contact with nature and greater solidarity between inhabitants.

The choice of garden-cities is also an economic one. The construction of housing groups to the same plans with the same materials enables economies of scale and the availability of a lot of housing in a short time. They are also the opportunity for the architects of the time to use new materials (reinforced concrete) and new construction techniques. Several priorities are highlighted to reduce costs:

- standardisation of the construction elements;
- use of local materials or materials fabricated on the work-site (especially terracotta bricks)
- reduction of ceiling heights;
- simplification of façades even if the window receives special attention

Most of the garden-cities are built according to two architectural styles :

- the English cottage style conditioned by vernacular or rustic characteristics: wooden Brabançon type shutters, roofs with two or three slopes, tarred plinth, triangular or rectangular dormers;
- the modernist and/or cubist house with sober volumes and flat roofs.

This housing type at the time had the advantage of complying with the individualist trend of Belgian and Brussels thinking by adopting the model of the single-family house rather than that of multiple dwellings. This housing type is based in part on the different worker family types and their size and in part on household solvency.

Houses built between 1920 and 1929 have a lack of primary (cellars) and secondary (bathroom) equipment. The dwellings are often cramped and reduced to the notion of service. They have several typological variants.

Houses built after 1930 are more comfortable and their equipment is more complete. These houses have additional rooms including an entrance hall, a cloakroom, and in some a garage.

In the outskirts of Brussels, the largest ensembles are :

- **Cité de la Roue in Anderlecht**, whose conception and realisation started in 1907, is interrupted during the First World



Figure 3:
Garden cities and public transport network (trains and trams) around Brussels - 1894-1930

1. Moderne garden city
2. Social dwellings blocks «cité Hellemans»
3. Garden cities Le Logis and Floréal

Source : JP De Visscher, *Indivision*, PhD thesis, LOCI, UCL, 2013



Figure 4: Modest rowhouses of garden city «la Roue», in Anderlecht
Source: Google Street View



Figure 5: Modest row houses of garden city «Le Logis», in Watermael-Boitsfort
Source: Google Street View



Figure 6: Modest houses of garden city «Moderne», in Berchem St Agathe
Source: Google Street View



Figure 7: Modest houses of garden city «Kapelleveld», in Woluwé St Lambert
Source: Google Street View

War and really restarts in 1920. The design of 688 single-family houses is entrusted to a group of architects under the direction of Jean-Jules Eggericx and the town planner Louis Van der Swaelmen. The project constitutes a veritable field of experimentation for new techniques and materials. The uniform ensemble is comprised of some sixty different house models, each provided with a common room, a laundry, two box rooms, three bedrooms, a loft and small garden of 50 m².

- **Garden cities « Le Logis - Floréal » at Watermael-Boitsfort**, designed by the same town planner, Louis Van der Swaelmen, for developing the quarters and the layout of the houses and plantations, and by Jean-Jules Eggericx, main architect of the housing on behalf of two different cooperative societies.

Le Logis: the first works phase, the Trapèze and Triangle quarters, was carried out from 1922 to 1924 (314 houses). The other quarters were built in successive phases from 1926 to 1951. Constructed in total were 726 (752) single-family houses, 164 (350) apartments, 9 shops, 3 playgrounds and one social centre.

Floréal: construction, started from 1922, continued to 1930, then 108 new apartments were added in 1949, and 56 in 1965. In total, 700 dwellings were constructed, including 350 single-family houses

- **Moderne garden city at Berchem St Agathe (1)**, conceived by the architect Victor Bourgeois, built from 1922 to 1925, including 275 dwellings. The houses and small apartment buildings, with cubist style refusing any ornamentation, have plain volumes at right angles with flat roofs. The use of reinforced concrete, a novelty at the time, enables building costs to be reduced. Each house is oriented (some laid out in saw tooth pattern) so as to receive the best daylight and has a private garden that could be cultivated. It is the first example of the type of architecture in Belgium.

- **Garden city « Kapelleveld » at Woluwe Saint-Lambert** designed in the modernist spirit and due to the town planner Louis Van der Swaelmen, also author of Logis and Floréal, and built from 1922 to 1926 by the avant-garde architects Huib Hoste and Antoine Pompe. They designed more than 400 houses and 19 different types, including 10 shops. The Cité also offers services: party room, library, sports pitches, playing field, essential shops, offices of the Société Coopérative. Later a school, church and stadium, planned from the start, were also built. A halt on the Brussels-Tervueren railway line, located at Rue Arthur André, served the Cité. Later constructions are all designed after the Second World War, by the architect Paul Posno.

General description

Only the English cottage style is described below.

The garden-city is characterised by the omnipresence of nature. Vegetation constitutes in part the structural link between



Figures 8 et 9: The presence of nature and green spaces in the garden cities Le «Logis - Floréal»

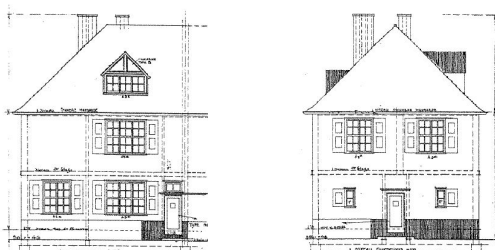


Figure 10: House's volume, shape and dimensions, type B - Le Logis - Floréal
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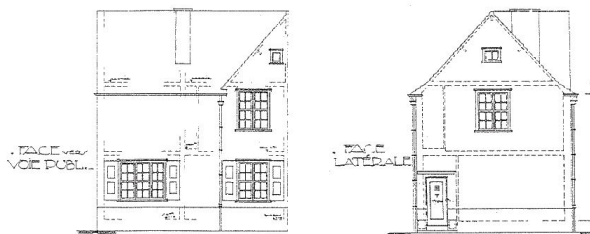


Figure 11: House's volume, shape and dimensions, type B - Le Logis - Floréal
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Figure 12: House's volume, shape and dimensions, type Y4 - Le Logis - Floréal
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the different ensembles of dwellings and in part the only real decorative element.

Unlike the city centre, the housing density is relatively low. The houses are all fronted with a garden and enjoy small cultivable plots at the back. This generally gives onto a small cul-de-sac or pedestrianised and paved alley that joins the plots, playing fields, etc.

The housing ensembles are set back from the street. Between the houses and streets, there is room for small gardens, with low walls topped with hedges. Each green space, whether private or collective, is separated by low hedges.

The garden-city house should be seen as a functional unit, i.e. a habitat with efficient consistency between the various functions of the habitat and a scarceness of middle-class excess. Its plan is conditioned by two principles:

- the floor area is adjusted to the number of inhabitants;
- the habitat is built with considerable economy of means to limit the financial restrictions.

Main characteristics

These worker houses are mainly small-size neighbouring houses, with two or three, sometimes four façades according to their location. This housing type has the following facilities : a common room, a kitchen laundry, several bedrooms and sometimes a parlour.

Urban situation

Garden-city worker houses are located in the outskirts of the city of Brussels. They are mostly located along one or several lines of public transport.

This dwelling type is located in the less dense and relatively green housing areas. It has and is surrounded by green spaces.

Scale

The plot this type of house is set on is larger than that of the pre-1900 worker house. Each plot has an average area from 400 to 800 m².

The worker house in the garden-city has a floor area and scale also larger than the pre-1914 worker house.

The cottage style home usually has the volume of a house with one or two floors under the roof with two or three slopes and has the following characteristics :

- width of façade from 5.5 metres (single-story terraced house) to 8.9 metres.
 - depth around 8 to 8.5 metres
 - façade height from 3.5 metres to 6 metres under cornice
- The roofs have small triangular or square dormers.

Spatial organisation

The variety of houses built (volume, scale, number of façades, etc.) in a garden-city makes generalisation difficult in terms of spatial organisation. However, we have set forth below what we think is the most characteristic of this housing type.

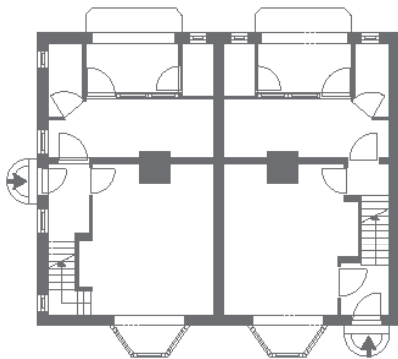


Figure 13: House plan - type D2 (1922) - Le Logis - Floréal

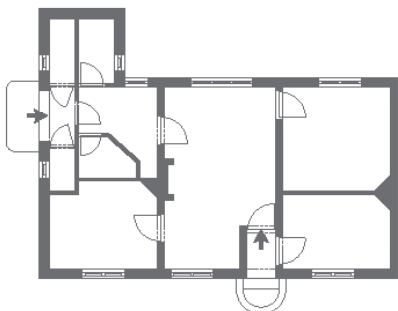


Figure 14: House plan - type E (1922) - Le Logis - Floréal

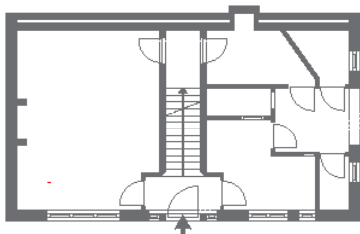


Figure 15: House plan - type G (1922) - Le Logis - Floréal



Figure 16: Plan of terraced house, 1930 - Le Logis - Floréal, avenue du Geal 4
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The garden-city worker house should be seen as a functional unit, easy to maintain, stripped of any middle-class excess and where the various functions of a house coexist coherently and efficiently.

While functional, this habitat has a more spacious interior enabling greater intimacy than the pre-1914 modest house. The houses are generally grouped by 2, 3, 4 or 5. Some are then terraced and others develop over three façades. However each entry is individualised (canopy, frame colour, etc.). The grouping of several dwelling units simulates a large house.

The plan of this housing type is conditioned by two principles : in part the adjustment of the floor area in relation to the number of family members, and in part the economy of means brought about by the financial restrictions.

The cottage style home explicitly refers to rural origins. Its standard plan is comprised of :

- an entrance with lock and in some house types, a toilet.

The entrance door usually has a canopy. The lock leads in part to the kitchen and in part to the common room. The stairs leading up leave from the entry lock, or from the family room.

The spatial organisation is expressed around :

- the family room at the front of the house, on the street side;
- the kitchen-laundry and services at the back, on the garden side;
- the bedrooms upstairs.

The plan of this housing type is structured according to the layout of the bearing walls. These are masonry using local bricks, mostly produced on the worksite with local clay.

The first houses built do not have cellars or bathrooms.

Each room is lit by windows whose frames are first wooden and then metal. The windows are manufactured according to a basic module which multiplies according to the use of the room and the need for light.

The toilets, for hygienic reasons, are outside the dwelling but appended to the building, unlike 19th century worker houses.

The kitchen, space where meals are prepared, is separate from the common room or dining room.

The rooms of the habitation are 2.8 metres high on the ground floor and 2.6 metres for the upper floor. These heights according to Eggericx provide a warm character and intimacy to the various rooms of the dwelling.

The architectural language used corresponds to a « utility aesthetic » : rectilinear and simple lines echo the reality of the market and the evolution of building methods, the areas are optimised to provide a certain comfort at a minimum price.

According to the floor area and the number of stories, the cottage style home can be classed in three categories:

- bungalow where the bedrooms are located under the rafters;
- single-storey house;



- two-storey house.

Each house is delimited at the street façade by a grassed set-back area and, at the back, a small cultivable garden.

Circulation and stairs

The entrance of the house is raised by one or two steps from the set-back grassed area. The entrance threshold is made of prefabricated concrete.

The entrance sometimes features a small wooden canopy.

The entrance door leads into a lock or small entrance hall.

This leads to:

- the common room and to one or two bedrooms and to the stairs leading to the attics, _in the case of a bungalow;
- to the common room and to a bedroom, in the case of the single-storey house;
- to the common room and sometimes to the kitchen, in the case of the two-storey house.

The circulation areas are reduced to their simplest expression : one room connects with another without the use of a corridor.

According to the house type, the stairs leading to the upper floor are straight or one quarter turn. They are made of local origin beech and fitted with a handrail also made of beech wood.

Construction system

The construction logic tends in part to favour the use of prefabricated and standardised elements, and the use of local and reused materials, like quarry stone.

The construction system used in building this housing type is relatively simple :

- reinforced concrete foundations surrounding the house and under the bearing walls;
- steel beams placed on reused bluestone courses that support an assembly of wooden joists (70/130 - red fir). The joists mainly span from façade to façade (span +/- 6 metres)

If there is a cellar, the slab between the ground floor and the cellar is composed of hollow reinforced concrete elements over the cellar area.

Some elements like the lintels, beams and joists, cellar stairs and door threshold are made of prefabricated reinforced concrete.

The bearing walls are made of masonry with fly ash concrete or clay bricks produced with local clay on site. These bricks are jointed with lime mortar (from Tournai) or cement mortar in the event of frost at the worksite.

Façades and materials

The houses are terraced, with two or three façades. The assemblies of several houses have a simple silhouette. These housing blocks should, according to the architects of the time, be treated as a whole. However each entry is individualised.

The composition of the façades is conditioned by vernacular or rustic characteristics: Brabançon type wooden shut-



Figure 17:
Garden cities «Le Logis - Floréal», facade and building materials
© www.irismonument.be



Figure 18:
Garden cities «Le Logis - Floréal», entrance building details
© www.irismonument.be



Figure 19:
Garden cities «Le Logis - Floréal», facade building detail
© www.irismonument.be



Figure 20:
Garden city «La Roue», Entrance detail and facade materials



Figure 21:
Garden city «La Roue», Entrance detail and facade materials

ters, roofs with two or three slopes, tarred plinth, triangular or rectangular dormers, etc. The façades are sometimes ornamented with a bow-window on the ground floor (family room).

Most of the materials are prefabricated and standardised in mass production. All the materials used come from the CNM (Comptoir National des Matériaux) which was at the time a subsidiary of the SNHLBM (Société Nationale des Habitations Bon Marché).

The façades walls are composed of :

- bearing walls in terracotta bricks produced, mostly, on the worksite with local clay (brick making plants and kilns installed on the worksite). These bricks are jointed with lime mortar and used for all walls except some door and window surrounds;
- outside, the walls are rendered with rough plaster (or rough-cast) with light colour and without ornament. It is made with fat lime and Portland cement;
- the door and window surrounds are made of Boom bricks called « Klinkaert »;
- the interior partitions are made of plaster, clinker or aggregates;
- inside, the walls are covered with lime plaster and colour wash. The original paints are, according to the specifications, based on natural products and mineral dyes ground in linseed oil.

The interior floors are composed of :

- upper floors or ground floors (if cellar) made of red fir;
- ground floor pavements made of vitrified clay on floating mortar bath on sand (10cm) and ash layer (10 cm);

The furnishings are either red fir (1st choice) or local beech and oak (the use of American oak is prohibited by the Specifications). All the doors are also standardised.

Special attention is paid to the windows which are considered as the eyes of the house. These are prefabricated according to a basic module. The window frames are set on the exterior plane of the façade and attached to the masonry. In order to protect them from the rain, small hoods are set above each window. In the first houses built, the windows are painted wood (the same as the shutters). Wooden windows are given up around 1929 in favour of metal frames. The glazing is simple clear glass.

The roof has two or three slopes. These have a large slope and are covered with tiles. The cornice is most often made of reinforced concrete and the gutters are zinc.

Equipment and technologies

Most Brussels houses built after 1920 are equipped with central heating, drinking water system, gas and electricity supplies, a drainage system and a rainwater tank.

In the case of the garden-cities, given the budgetary restrictions, the equipment of the houses is reduced to a minimum. The houses are not equipped with rainwater collection tank. Heat is produced using a coal boiler or coal-burning stove placed in the main rooms.

Coal is also used for cooking (coal cooker).





Figure 22: Worker's house in garden cities «Le Logis - Floréal», Rue du Pic-vert 13 in Watermael-Boitsfort. Location



Figure 23: Worker's house in garden cities «Le Logis - Floréal», Rue du Pic-vert 13 in Watermael-Boitsfort. Implantation plan



Figure 24: Worker's house in garden cities «Le Logis - Floréal», Rue du Pic-vert 13 in Watermael-Boitsfort. Front façade

Example – worker house in a garden-city

This worker house with three façades and cottage style is located in Logis Floréal which has 752 single-family houses and 350 apartments distributed in streets with animal names. This garden-city located near the Soignes forest is full of trees. It features many green spaces and gardens.

Address: Rue du Pic-vert 13 - 1170 Watermael-Boitsfort

Year of construction: between 1922 and 1930

Architect: Jean-Jules Eggericx

Town planner: Louis Van der Swaelmen

Classified building: yes, like the entire garden city

Considerable renovation since construction : no

Location

- in a garden-city
- three façades house

Scale

- 2 storeys
- roof with two slopes
- set back area (grass)
- back garden (bordered with hedgerows)

Street façade

- oriented west-north-west
- brick, produced on site (brick making plant and kiln installed on worksite), exterior rendered with lime mortar
- furnishings painted green, ground floor windows equipped with wood shutters painted green and white
- roof with red terracotta tiles (jointed Pottelberg tiles)

Construction system

- foundations in broken brick concrete with mildly hydraulic lime mortar
- concrete slab and wooden floors on bearing walls
- non-bearing façade
- reinforced concrete stairs with formwork
- reinforced concrete lintels with formwork

Basement

Sous-sol : provisions and coal cellar

Ground floor : entrance lock, living room and kitchen

Upper floor ; 2 bedrooms

Attics



Explanatory sheet

Between-wars modest house

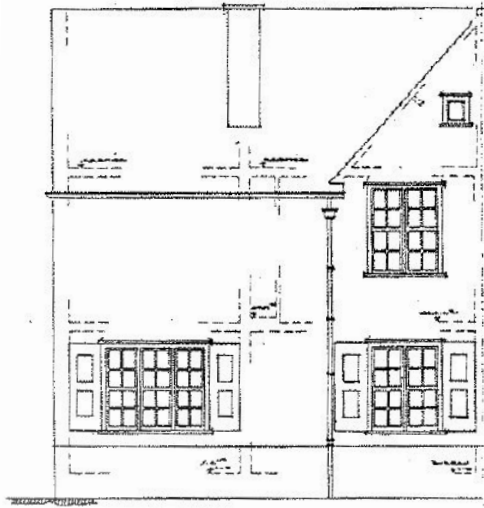


Figure 25: Worker's house in garden cities «Le Logis - Floréal», Rue du Pic-vert 13 in Watermael-Boitsfort. Front façade

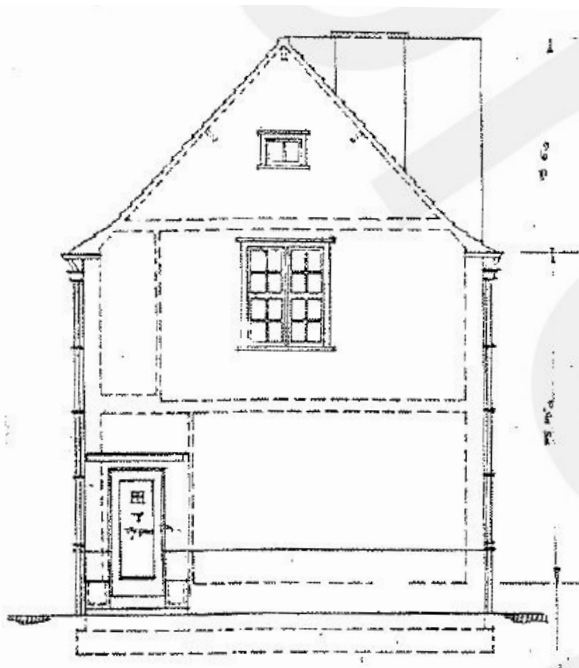


Figure 25: Worker's house in garden cities «Le Logis - Floréal», Rue du Pic-vert 13 in Watermael-Boitsfort. Lateral façade (house entrance).

Description of the house

The entrance of the house is located on the side façade and not on the street façade. The entrance is protected by a canopy and opens into the entrance hall of the house. All the rooms are lit and ventilated naturally.

Entrance hall

_leads to the common room, and to the stairs going up
- beech wooden stairs and handrail

Bathroom

- equipped with WC

Toilets:

- originally, outside but appended to the house. Today, generally accessible from the inside.
- tiled

Kitchen

- on the ground floor, at back façade, looking onto the garden

Bedrooms

-two upstairs

Living room

-on the ground floor, at front façade
- salon and dining room
- reinforced concrete blocks and joists and beams

Remark on renovation

Many modest houses in the garden-cities are today unoccupied and not inhabited because of the insalubrity and because most are also classified.

These houses should be renovated in priority as they offer many households and families a very pleasant lifestyle in Brussels which is close to public transport.