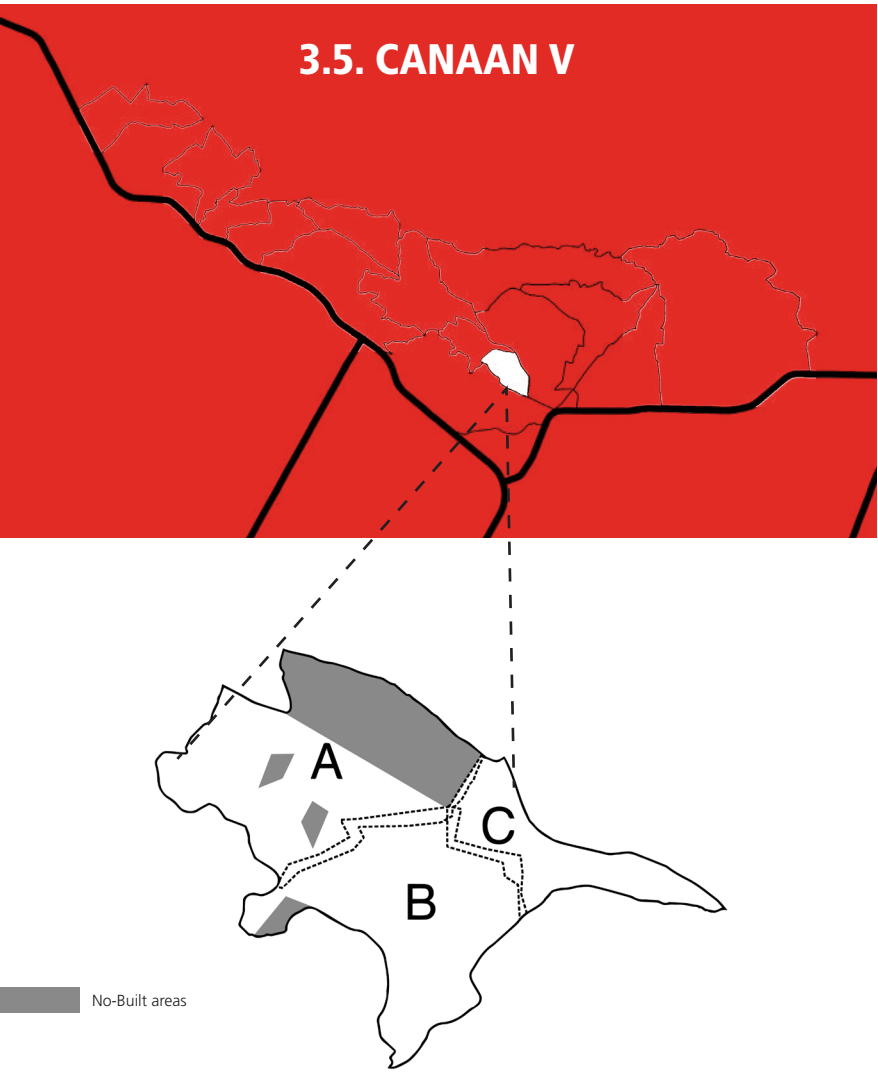




Canaan V is one the smallest neighbourhoods in terms of area. Located in the centre, just north to Canaan III, this neighbourhood has 7,695 inhabitants. Due to lack of information, the calculation of the population was done by multiplying the number of houses by 4 persons. The topography around the periphery is steep, and we can only see some large plateaux in the centre where possible development can actually take place.

The following land use proposals in this section are based on a participatory process within three months' time-frame. The UN-Habitat team maps the existing situation and the community validates and proposes ideas. The urban Lab rechecks the suggested interventions and modifies if necessary. After that, a neighbourhood assembly is organized to showcase the overall vision and a land use is later developed.

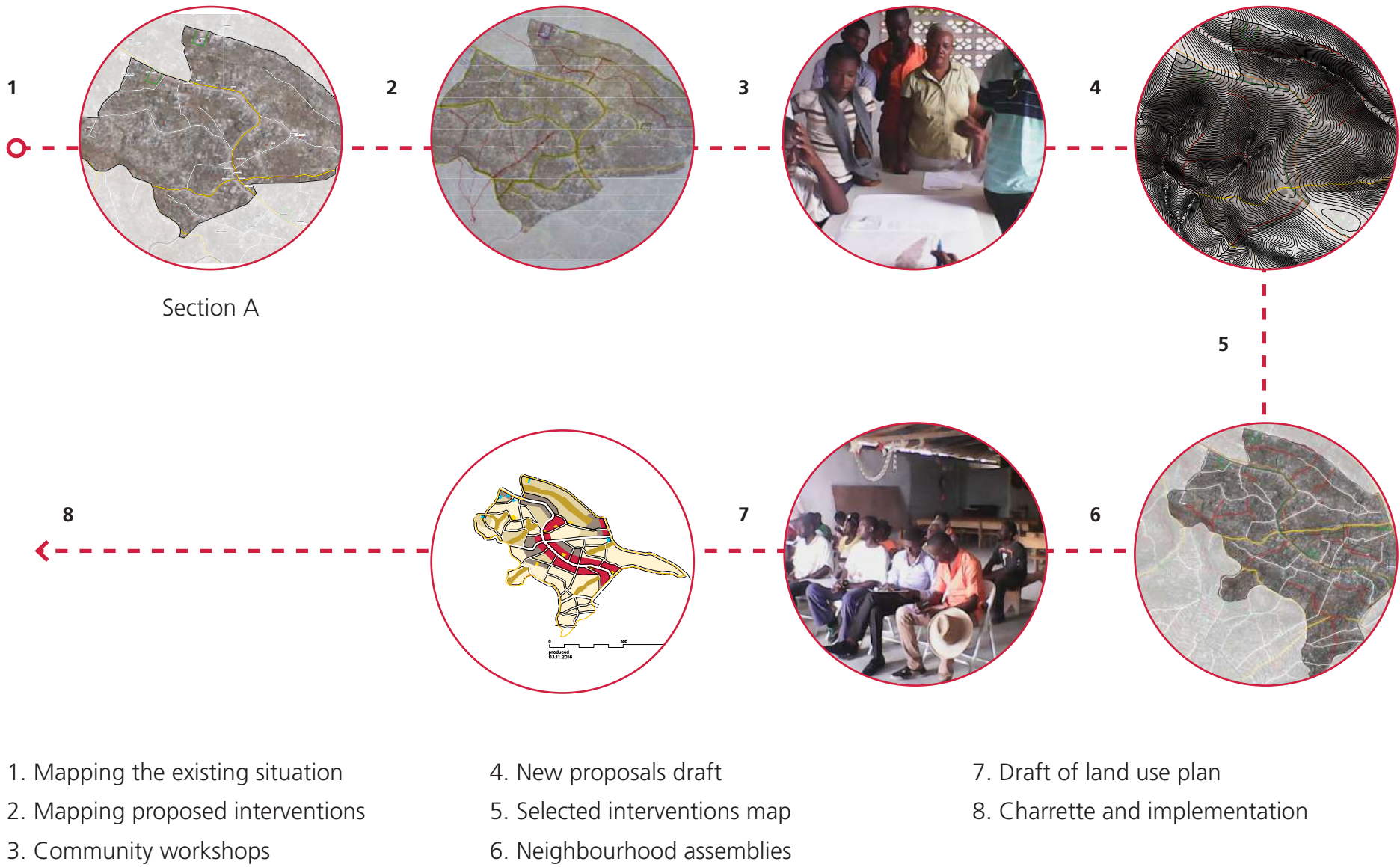


Fig.126: Canaan V: participatory planning process

A. STREET NETWORK

The existing street network covers only the central area of the neighbourhood. At the limits, the slopes becomes very steep limiting any construction or extension of the network. For these areas, specific measures were elaborated in the mobility report giving a guidance on how to build roads in steep areas. The existing road network is not well structured and not hierarchized. If the growth stays of 4% yearly, Canaan V will be highly congested due to the lack of roads.

Existing situation

Streets percentage

UN-Habitat: 30%

10%

Streets km/sq.km

UN-Habitat: 18 km/sq.km

17 km/sq.km

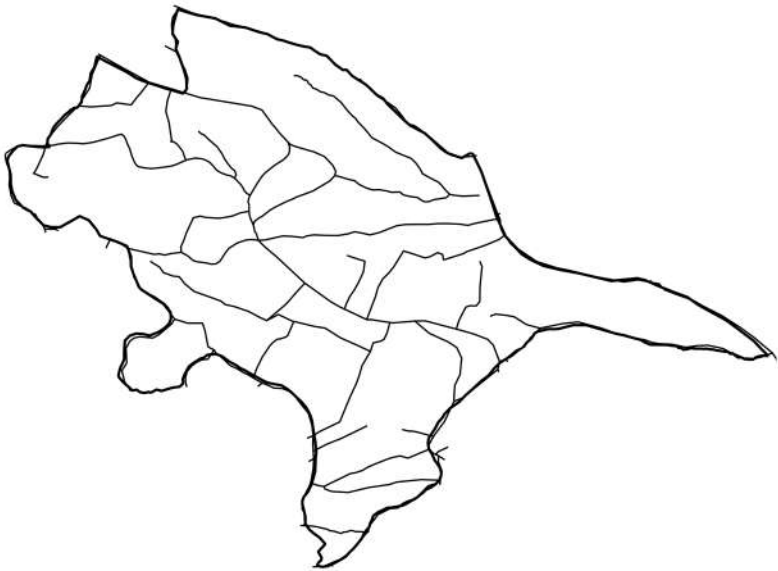


Fig.127: Canaan V: existing street network

The new plan proposes of having an arterial road that crosses the plateau of the neighbourhood and connects Canaan IV with Canaan I. This road will induce economic potentialities and enhance accessibility to new job opportunities. The central area will be interconnected with secondary roads where the topography allows it. Different width for the different types of roads are defined (A and B, see below). It is not only suggested to propose new roads, but the upgrading of the existing ones is highly recommended. The street network of Canaan V will witness an increase of just 1.36% due to the complexity of the terrain.

Proposed street network

Streets percentage

11.36% -Option A

Arterial road: 24m

Main roads: 18m

Secondary streets: 12m

- Option B

Arterial road: 18m

Main roads: 12m

Secondary streets: 9m

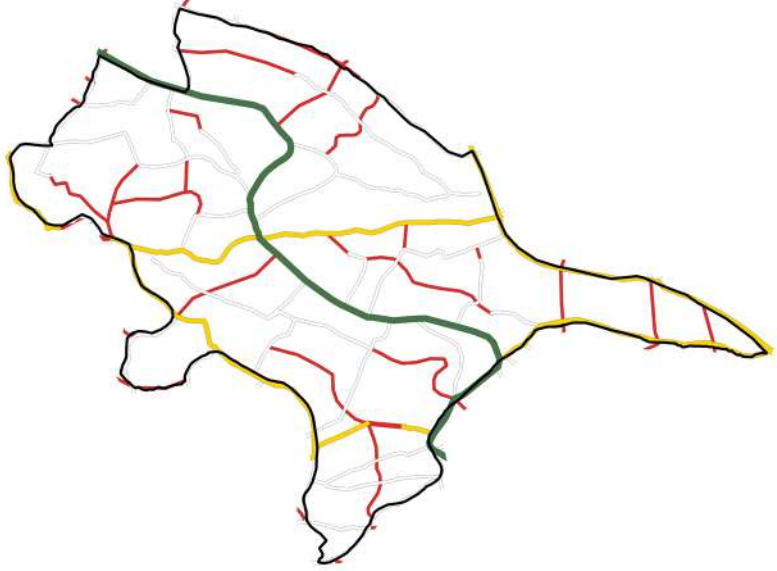
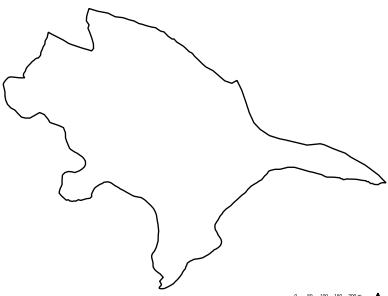
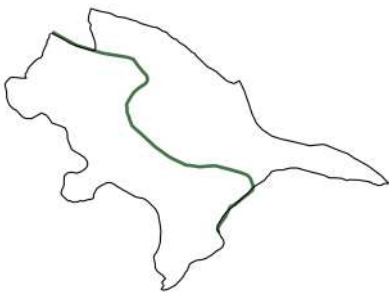


Fig.128: Canaan V: Proposed street network

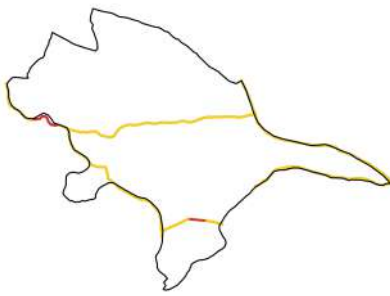
Layers of the proposed street network



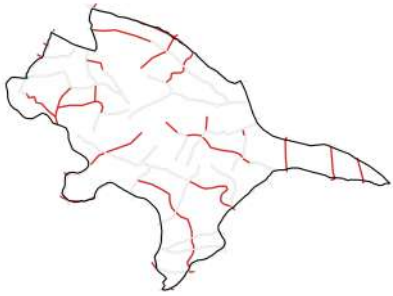
National road



Arterial road



Main roads



Secondary streets

Fig.129: Canaan V: Layers of the proposed street network

B. PUBLIC SPACES

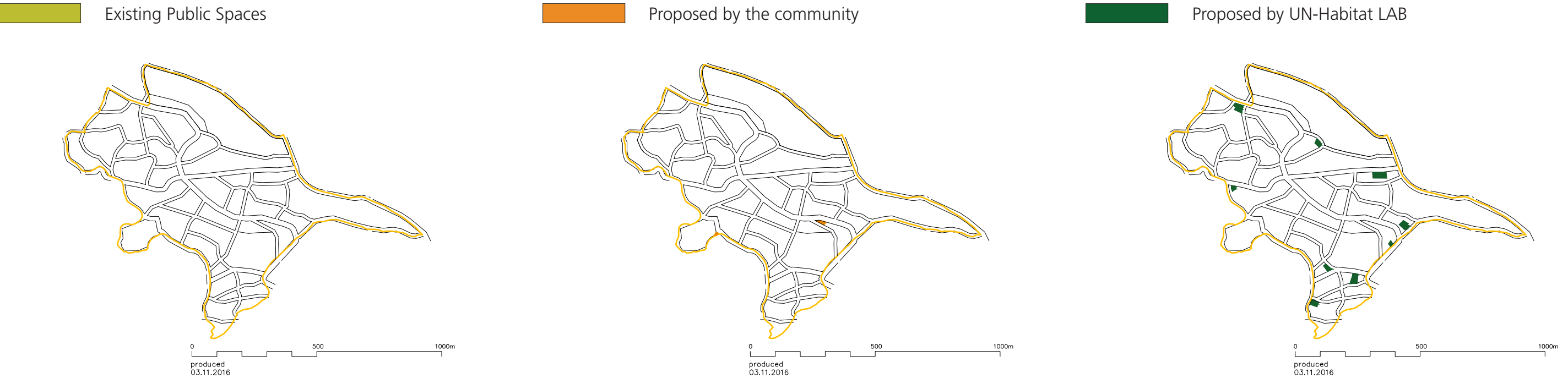


Fig.130: Canaan V: Existing Public spaces

Fig.131: Canaan V: Public spaces proposed by the community

Fig.132: Canaan V: Public spaces proposed by UN-Habitat LAB

#	PUBLIC SPACE IN CANAAN V	STATUS	NAME	m²	Ha	%
	Neighbourhood area			578644	57	100%
1	Public space	Proposed by the community		135	0.0135	
2	Public space	Proposed by the community	Place Preval	408	0.0408	
				543	0.05	0.09%
3	Public space	Proposed by the Lab		673	0.0673	
4	Public space	Proposed by the Lab		984	0.0984	
5	Public space	Proposed by the Lab		464	0.0464	
6	Public space	Proposed by the Lab		246	0.0246	
7	Public space	Proposed by the Lab		875	0.0875	
8	Public space	Proposed by the Lab		1.357	0.1357	
9	Public space	Proposed by the Lab		964	0.0964	
10	Public space	Proposed by the Lab		509	0.0509	
12	Public space	Proposed by the Lab		349	0.0349	
				6.421	0.64	1.11%
				6.964	0.7	1.2%

Canaan V doesn't have any public spaces within its boundary, therefore more spaces should be allocated for the public good in the new plan in order to reach the UN-Habitat recommendations. It is essential to consider vacant lands and preserve them for the creation of new public spaces.

Two public spaces were proposed by the community during the participatory approach. These spaces only form 0.1% of the total area. Since the percentage is still low, UN-Habitat proposed the allocation of ten other spaces which are spread equitably in the neighbourhood. Adding the propositions of the community and the LAB to the current situation, the percentage only increase by 1%.

Table 21. Canaan V: Percentage of public spaces

In the new plan, the public spaces are well spread inside Canaan V. Adopting the 400 metres buffer zone recommended by UN-Habitat, the neighbourhood seems to have enough of public spaces despite the low percentage. This reflect that the number of public spaces does not have to reach 15% every time in each neighbourhood, but it has to be examined in its wider area.

#	OPEN SPACES IN CANAAN V	STATUS	NAME	m²	Ha	%
	Neighbourhood area			578644	57	100%
	Public spaces			6964	0.7	1.2%
TOTAL OPEN PUBLIC SPACE:				6964	0.7	1.2%

Table 22. Canaan V: Total percentage of public spaces

The World Health Organization (WHO) recommends 9m²/inhabitant

Existing	Proposed public space	Proposed P.S + non-aedificandi
0 m²	6964 m²	6964 m²
7695 Inhabitants	7695 inhabitants	7695 inhabitants
0 m²/Inhabitant	0.9 m²/inhabitant	0.9 m²/inhabitans

Table 23. Canaan V: Public space area per inhabitant diagram

Proposed public spaces with 400 metres buffer

- Existing public spaces
- Proposed by the community
- Proposed by UN-Habitat LAB

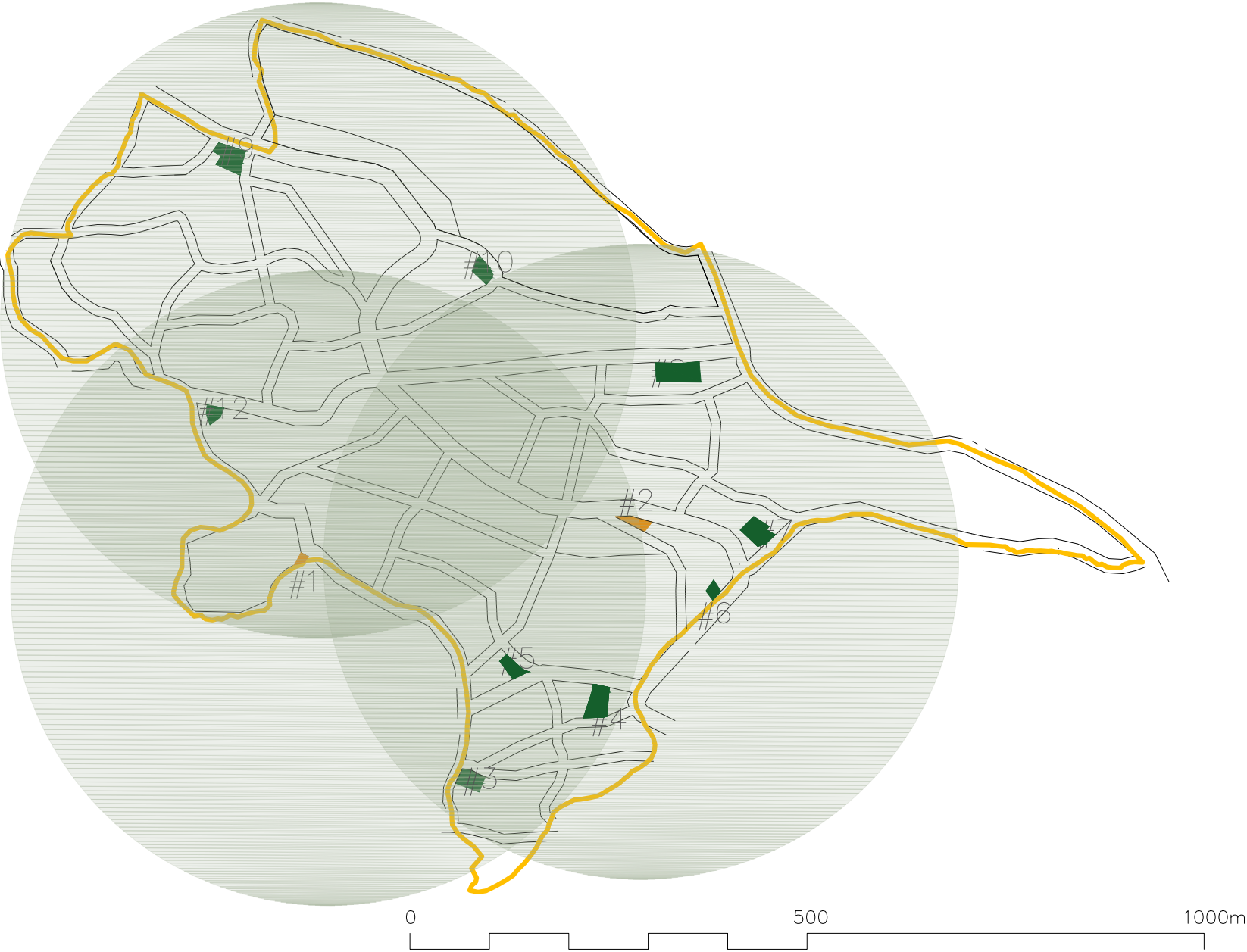
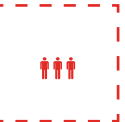


Fig.133: Canaan V: Overall public spaces' land use and buffer area (400m)

C. RESIDENTIAL AREAS





0.58 km²

Neighbourhood area

7,695

Inhabitants

(source ARC household survey 2016)

13,267

people/km²

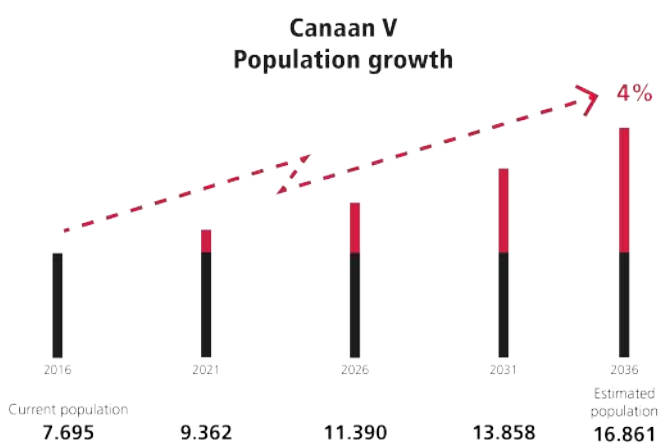


Fig.135: Canaan V: Projected population increase

Proposed densities

Low density

Most of the low density settlements are located where the slopes are bit steep. As the density of the neighbourhood is already very high, we have adopted to have 12,000 inhabitants/km2 in the low density category. Canaan V will be able to host almost 2,525 people. The houses in this classification are usually connected via secondary roads. It is possible to have small commerce if only it they have access to pedestrian paths.

Medium density

The settlements of medium densities in the new plan are not many. They are located in proximity of high density areas and occupy only 15% of the total area. The topography in these areas is not steep and densification of previously low density areas into medium is therefore feasible. The new design proposes of having 18,000 inhabitants per km2 in low densities. Respecting the proposal, 1,379 people will be accommodated in Canaan V under this category.

High density

The location of high density settlements is concentrated where the existing large plateaux are, and in proximity to the proposed arterial road. UN-Habitat recommends a density of 15,000 inhabitants/km2 for this category, however due to the current high density status, this neighbourhood will be exceptionally densified having 24,000 inhabitants/km2. This means that a study on plots resizing and modification and densification strategies should be well conducted. Canaan V will be able to host 1,136 people. It is generally advised to locate high density housing next to commercial areas in means to have a more compact city.

Existing residential areas

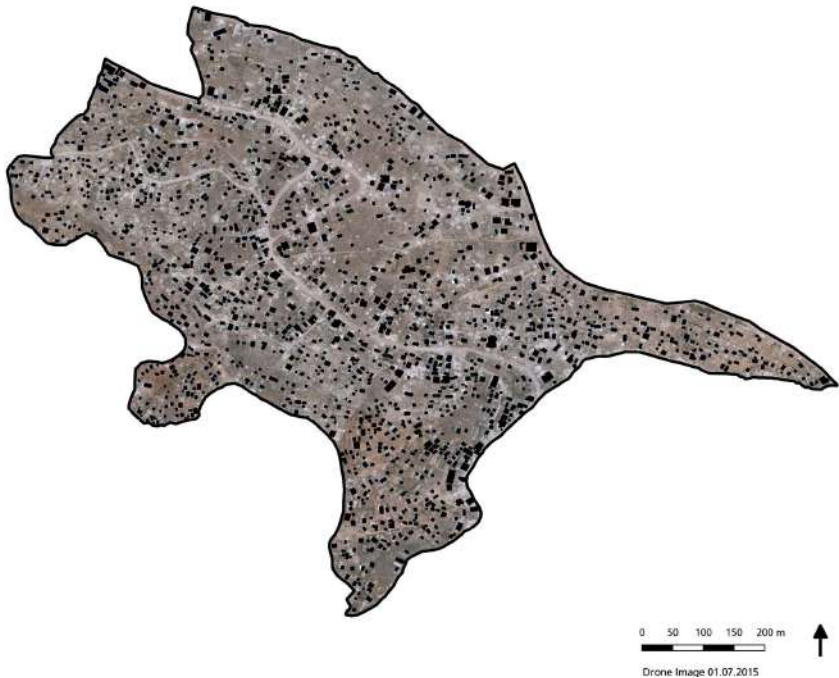


Fig.134: Canaan V: Existing settlements

In relation to its area, Canaan V is considered as a neighbourhood with high density. According to the American Red Cross statistics, the population counts 21,119 inhabitants. After encountering many conflicts in the calculation, we have adopted to

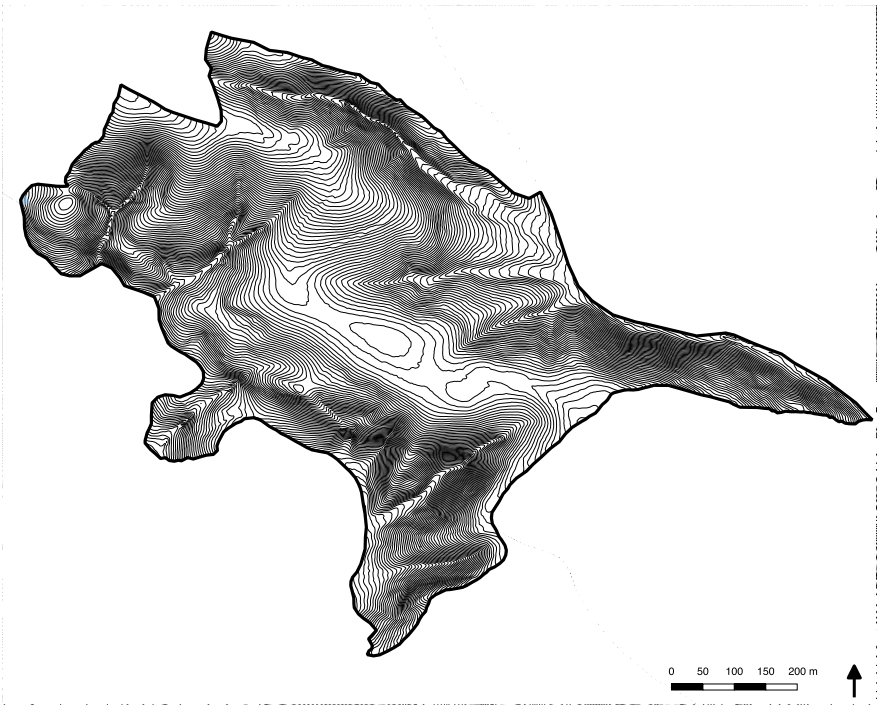


Fig.136: Canaan V: Contours

multiply the number of houses per 4 people to get the total population. The topography in the neighbourhood limits any development or densification process to happen due to the presence of the steep slopes on the periphery.

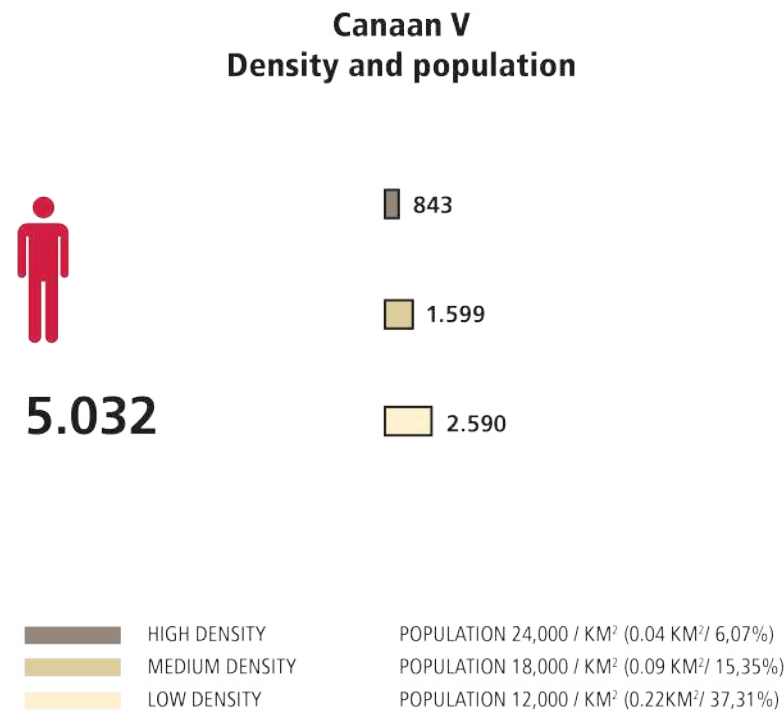


Fig.137: Canaan V: Diagram of population in the new proposed residential areas.

In the upcoming 20 years, and if the population growth remains of 4%, it is expected that the current population of 7,695 increases to 16,861 inhabitants. The densification, as proposed in the new land use plan, will not be able to accommodate the growth. Therefore it is essential to think of city extension plans.

The presence of economic activities in the residential areas is highly encouraged on condition to have a direct access to the roads. The size of commercial activities depends on the types of roads and the density of the area; the higher the density, the bigger the commerce and vice versa. The compactness of the city is induced by the integration of different usages into the urban fabric.

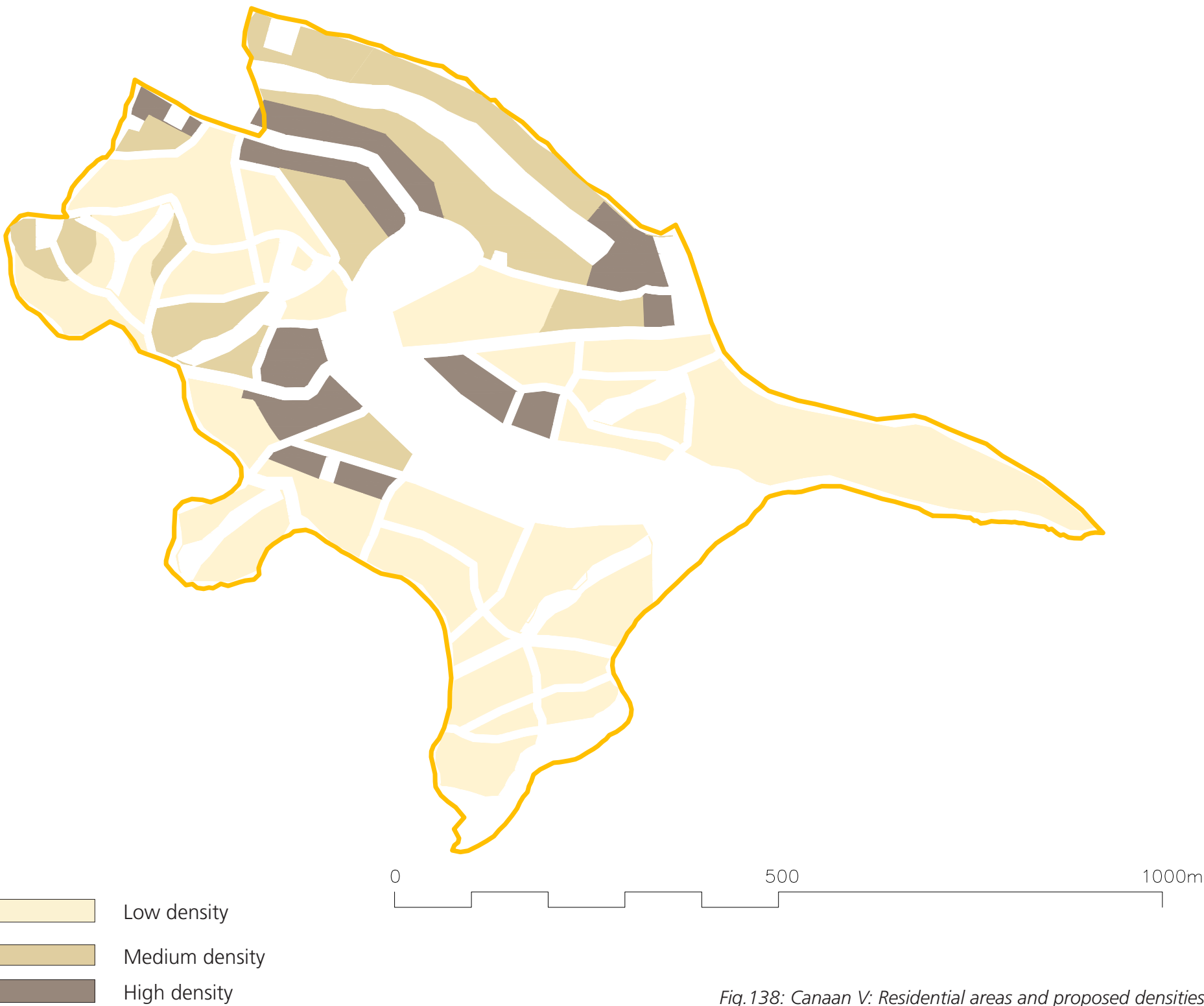


Fig.138: Canaan V: Residential areas and proposed densities

D. COMMERCIAL AREAS

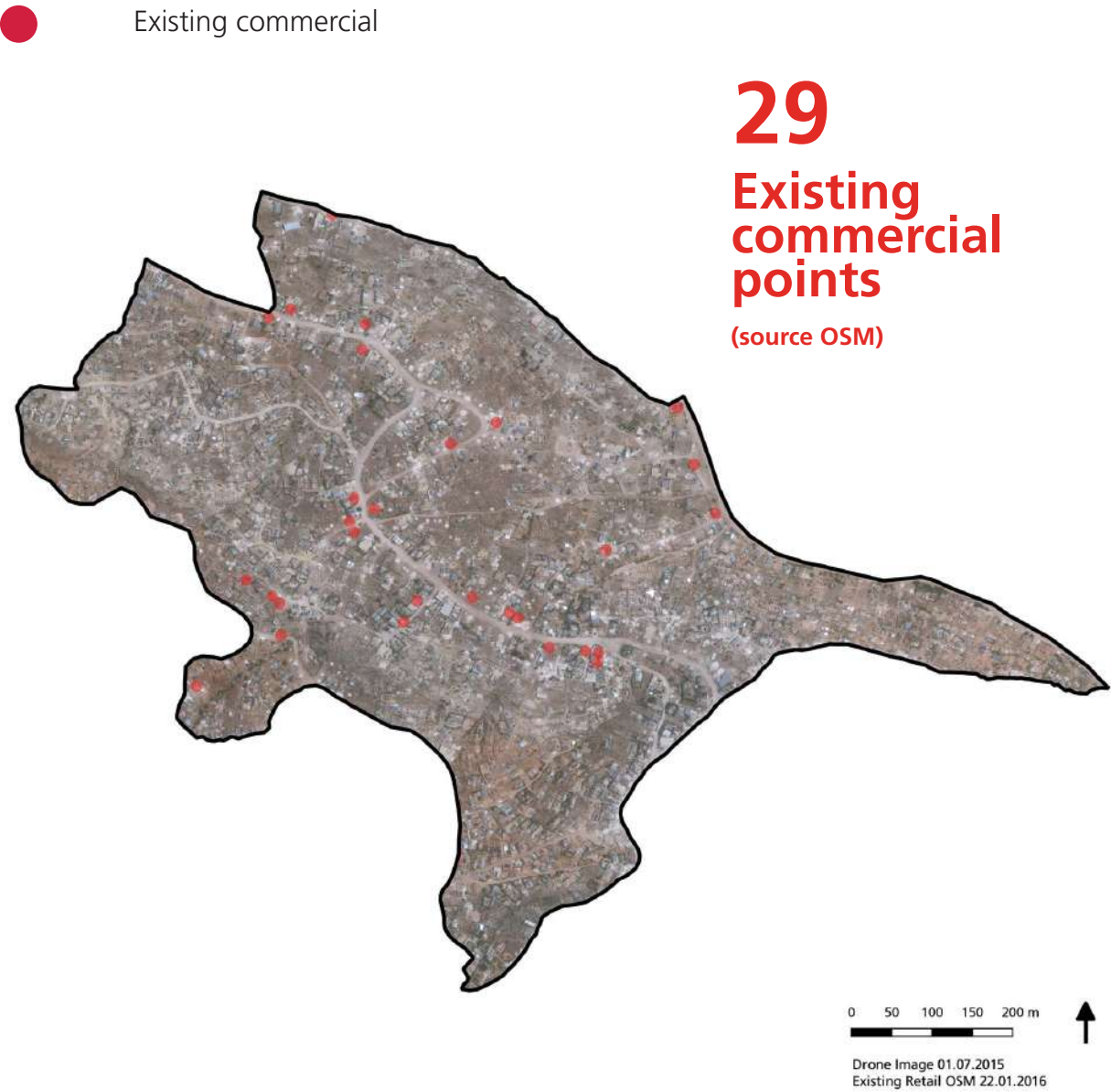


Fig.139: Canaan V: Existing commercial points (Source: OSM)

According to OpenStreetMap data, there are 29 commercial stores. The location of these services is very important as they play a big role in the economic dynamics and the employment opportunities in the neighbourhood. Placing them next to arterial and main roads is encouraged. The commercial activities has to be considered when studying the accessibility to other functions, especially to roads, public spaces and housing.

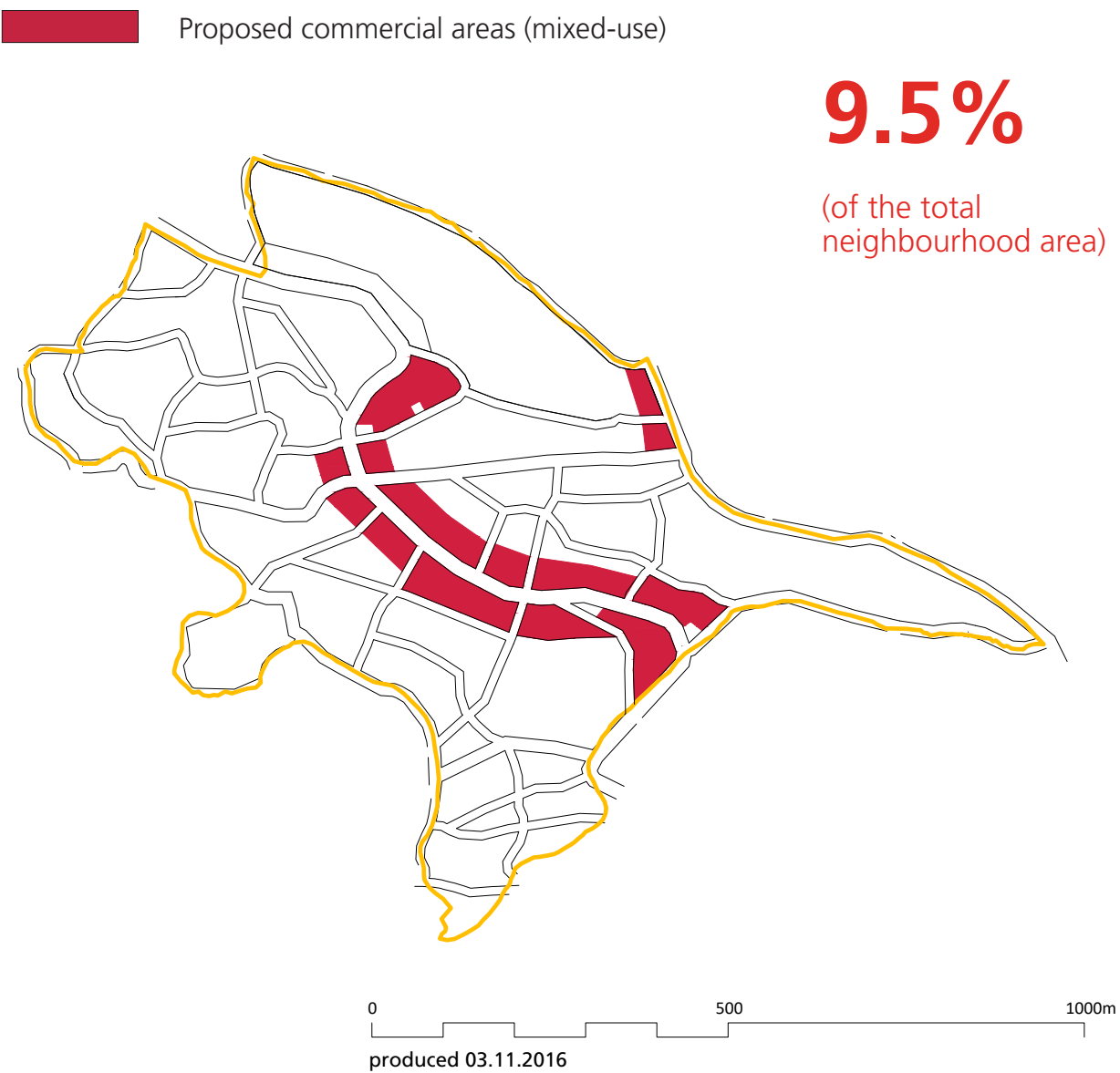


Fig.140: Canaan V: Proposed commercial areas

In the new proposal, the commercial activities will be located in the area that faces the new arterial road. They will occupy the ground floor and will have access to pedestrian paths. These activities have the potential to generate a new, highly diverse sector within the local economy, with opportunities for job creation. They therefore act as catalysts for initiating a structural transformation. The proposed commercial areas will occupy 9.5%.

E. PUBLIC FACILITIES

- RELIGIOUS - EXISTING
- EDUCATION - EXISTING
- HEALTH - EXISTING
- OTHER PUBLIC FACILITIES - EXISTING

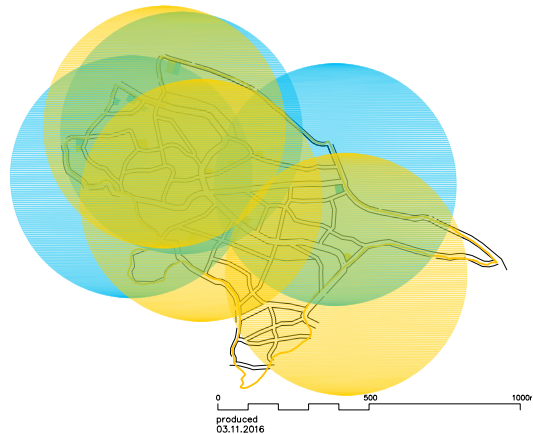


Fig.141: Canaan V: Existing public facilities and a 500m buffer catchment area.

Most of the educational facilities are located in the north of the neighbourhood. From the results of the participatory approach, most of the kids are enrolled in schools in within Canaan V. The data has been validated with the community but there is still a lack of information about the types of schools (primary, secondary, etc.). It was a challenge to predict the required number of facilities for the population. Education plays a major role in reducing poverty and inequality. For that, it is always advisable to reserve certain land for the extension of existing facilities and/or for the provision of new schools.

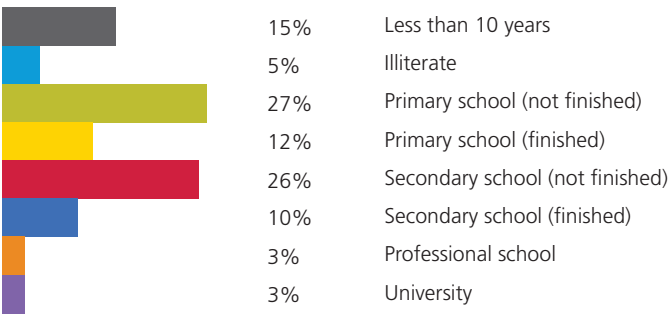


Table 24. Canaan V: Participation level (Croix Rouge Americaine, Juillet 2016)

Religious facilities are concentrated in the centre. There are no information available about health services, community centres, security stations and others. For planning purposes, and in order to have a long-term sustainable city, it is essential to consider the services mentioned in the new design of the neighbourhood. Generally, these services require good accessibility and therefore their location must be well studied. Normally, it is recommended to locate them within 500 metres from the settlements so that they are easily accessible.

Fig.142: Canaan V: Existing public facilities

F. NATURAL RESOURCES AND ENVIRONMENT

The natural and non-aedificandi areas form 7.6% of the total neighbourhood area. All these spaces are prone to high environmental risks. To prevent any risk of flooding on built-up areas, these zones will be classified as no-built areas where no construction should take place. The inhabitants that are already located in these risks zones will have to be relocated to safer areas.

#	No-built areas	m²	Ha	%
	Neighbourhood area	578.644	57	100%
14	High environmental risk areas	44,063	4.4063	
		44,063	4	7.61%

Table 25. Canaan V: Total percentage of no-built areas

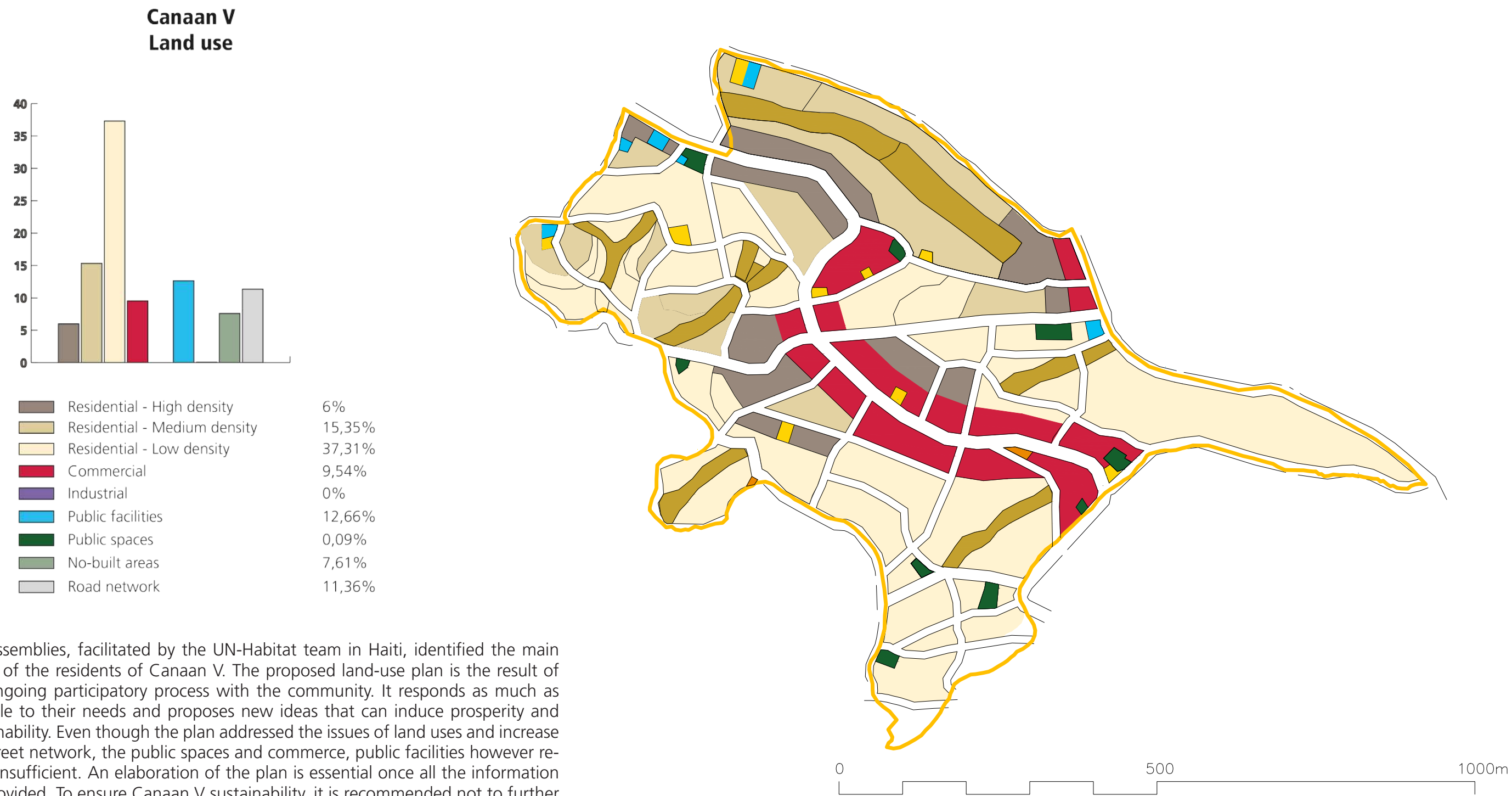
Legend

- Proposed buffer zone along the rivers and ravines
- Proposed area for livestock grazing
- Proposed area for reforestation
- High environmental risk areas
- Existing rivers and ravines
- Quarries



Fig. 143: Canaan IV: No-built areas

G. CANAAN V LAND USE



The assemblies, facilitated by the UN-Habitat team in Haiti, identified the main needs of the residents of Canaan V. The proposed land-use plan is the result of the ongoing participatory process with the community. It responds as much as possible to their needs and proposes new ideas that can induce prosperity and sustainability. Even though the plan addressed the issues of land uses and increase the street network, the public spaces and commerce, public facilities however remain insufficient. An elaboration of the plan is essential once all the information are provided. To ensure Canaan V sustainability, it is recommended not to further densify it.

The plan was reviewed as a whole, taking into account the neighbourhoods nearby and how they connect. It is mandatory to situate each of the individual neighbourhood plans in the whole Canaan area to achieve a coherent and rich structure.

Fig.144: Canaan V: Proposed land use plan