MOVEMENT

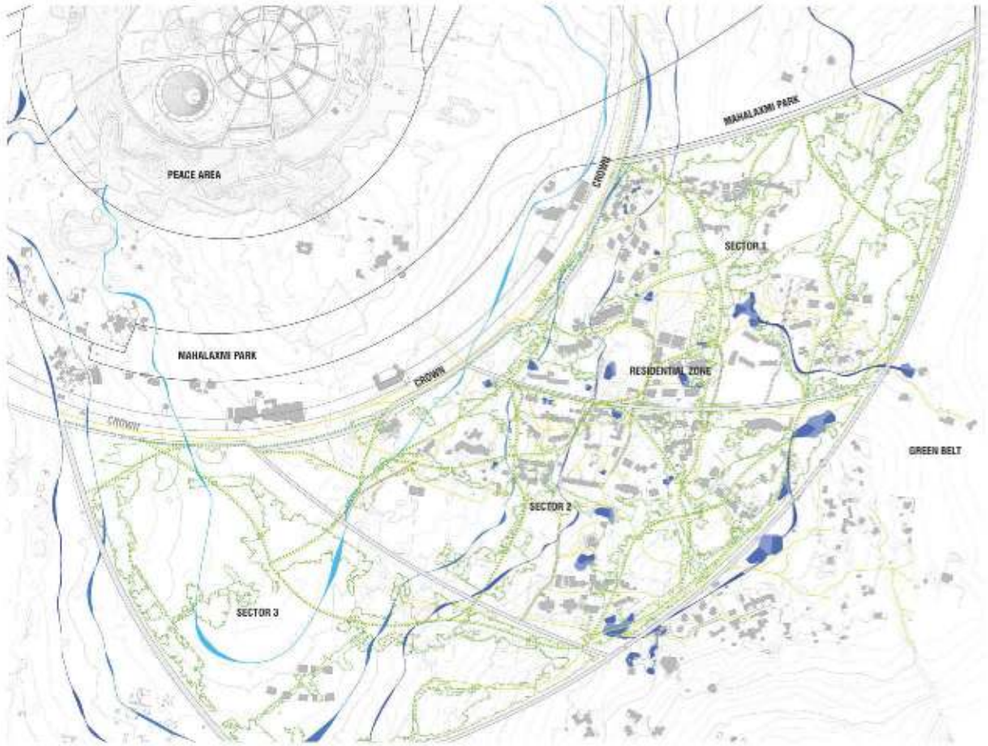


Fig. 48

Walking, cycling and biodiversity movement network.

1:10 000

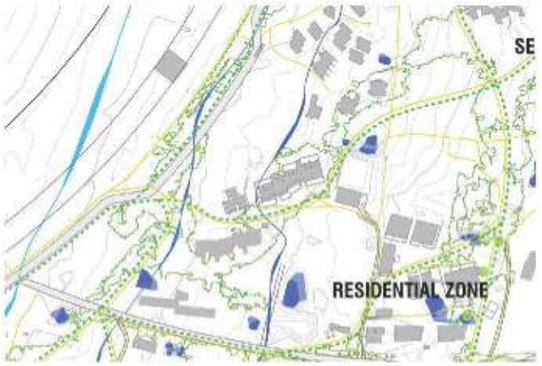
Detailed Development Plan intends to establish a widely understood **Movement** network. This movement network refers to, not only the movement of people but, as well to the movement of water and to the continuity of conditions conductive to fauna and flora biodiversity. Such movement system is to be facilitated by a network of Green Corridors defined and explained in the **Land Use** section of DDP.

The commonly understood mobility does not constitue a driving factor for the urban design outlined by the **DDP**, thus, within the document a term movement is used rather than mobility. The presence of the walkable realm and the biodiversity is prioritized over the vehicles and roads. Lifestyle oriented towards the walking and cycling is to be promoted and facilitated by every development to come in the RZ.

As mentioned in the Inventory Analysis chapter, the main aim in establishment of the new movement network is to shift the general movement pattern and giving priority to the walking and cycling realm. As previously noted, the main objective of the new network design is its functionality and the provision of the connectivity without interruptions.

Fig. 49

Walking, cycling and biodiversity movement network in Sector 1.



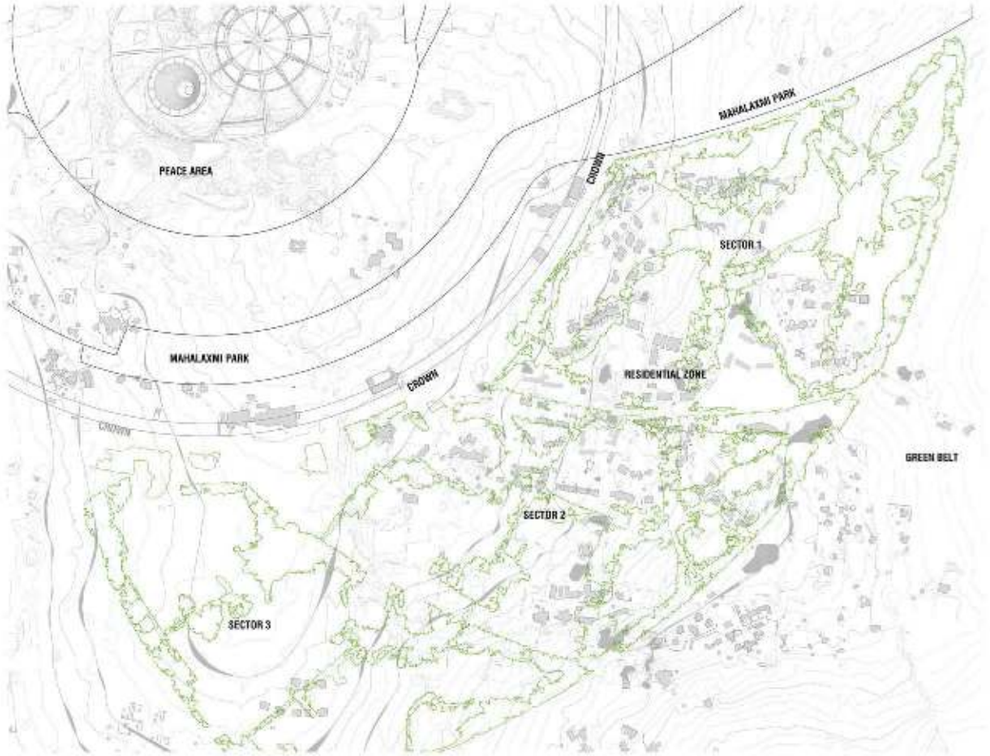


Fig. 50

The biodiversity Movement.

1:10 000

_GREEN CORRIDOR

BIODIVERSITY

Network of the **Green Corridors** is to become an area which provides conditions favorable for biodiversity flourish and it is to be interwoven in the built fabric of the Residential Zone.

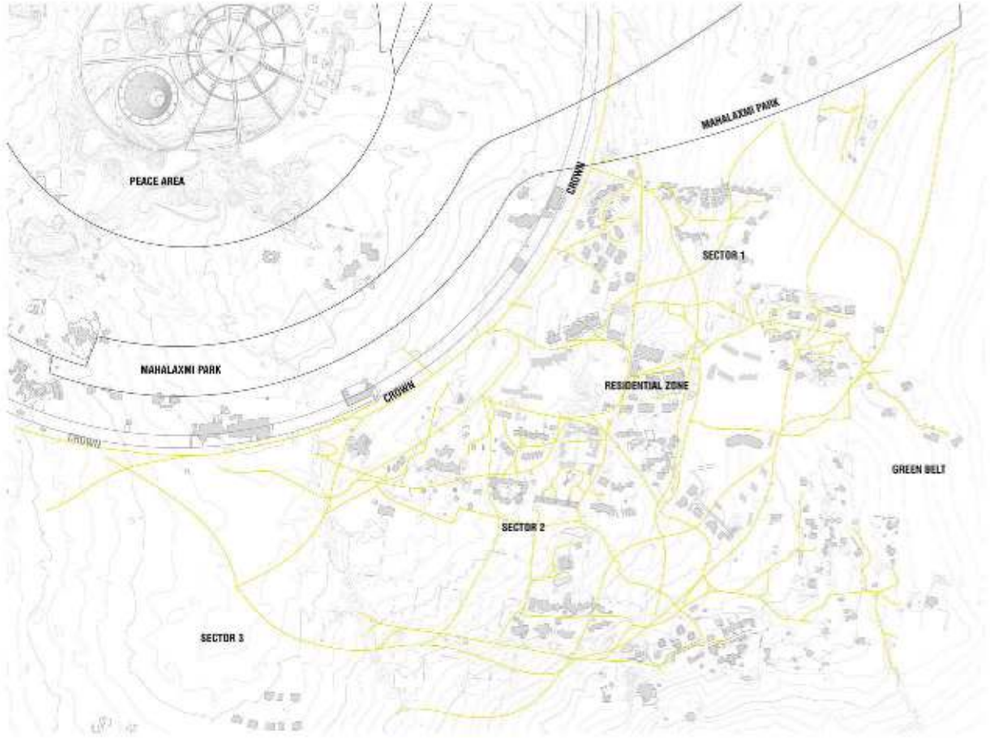


Fig. 51

Pedestrian realm - walking paths network.

1:10 000

_Walking Path

WALKING ROUTES

As the primary (non-motorized, with a right of way) **Movement** network is to receive priority over the motorized transport routes, it is vital for this network to remain uninterrupted. The fragmentation of the walking and cycling routes by the physical community boundaries stands as a major obstacle in achieving functionality of such network. According the the *RZ Existing Conditions Report (2013)* the existing cycle-path network does not provide through connections in the sectors - there are numerous missing and broken links.

In order to impact and shift the daily movement pattern of Aurovillians to not-motorized transport the **Movement** network must be maximally functional and convenient. Hence, the local decisions on the placement of fences and gates should not compromise the overall network functionality. Thus, it is important to limit the temporary solutions in order to initiate the change as soon as possible. The issue of the security needs to start being addressed and combated by a provision of a lively urban-scape rather a series of physical boundaries.

Consequently, there is a need for communities to reconsider and economize the need for fencing, in order to see an actively used urban landscape, dominated by the non-motorized residents, as a near future possibility rather than distant perspective scenario.

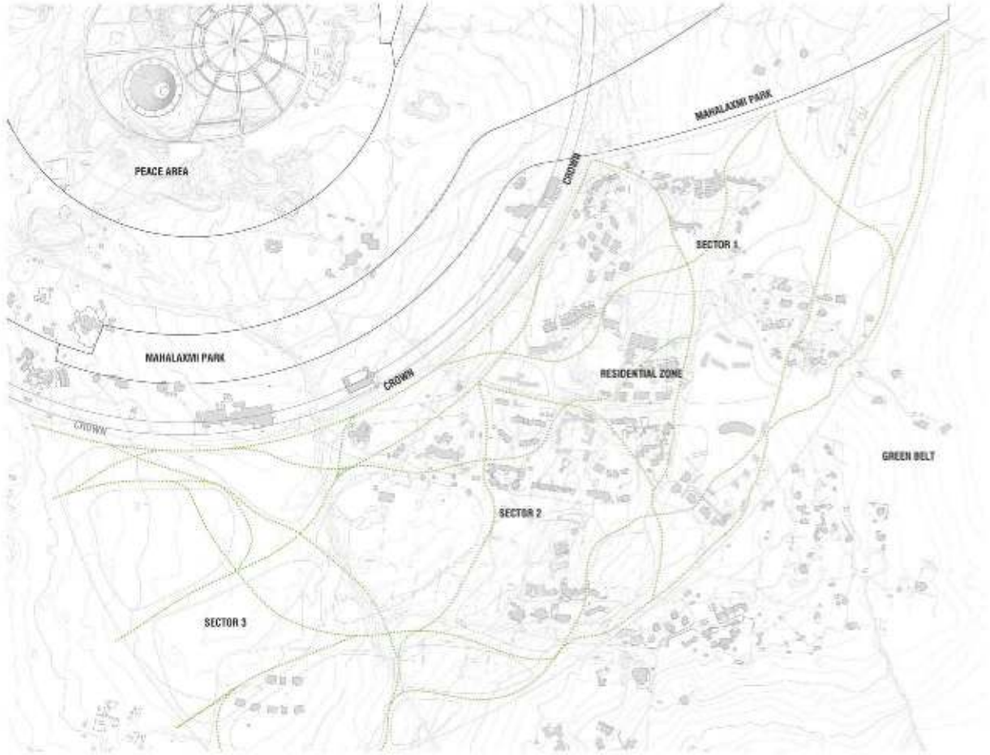


Fig. 52

The cycling paths network.

1:10 000

_CYCLE PATH

CYCLE PATHS

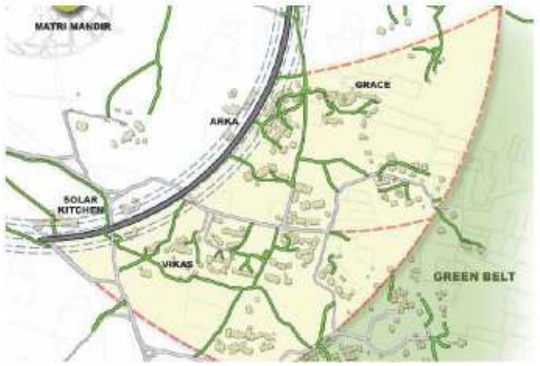
Set out of the planned cycle paths is aiming to provide a convenient and direct routes throughout the Zone. With this aim, a basic principle behind setting the cycle paths is established: connection between at least three points at each Radial to the other one, taking into consideration existing fixed obstacles in form of permanent structures.

The cyclepaths, the walking routes and the water ways (drains), wherever possible will run along and serve as a spine to the *Green Corridors*.

Fig. 53

Existing cycle paths in sector 1&2

Auroville Town Development Council. (2013). *Existing Conditions Analysis Report.* Residential Zone Sector 1 & 2.



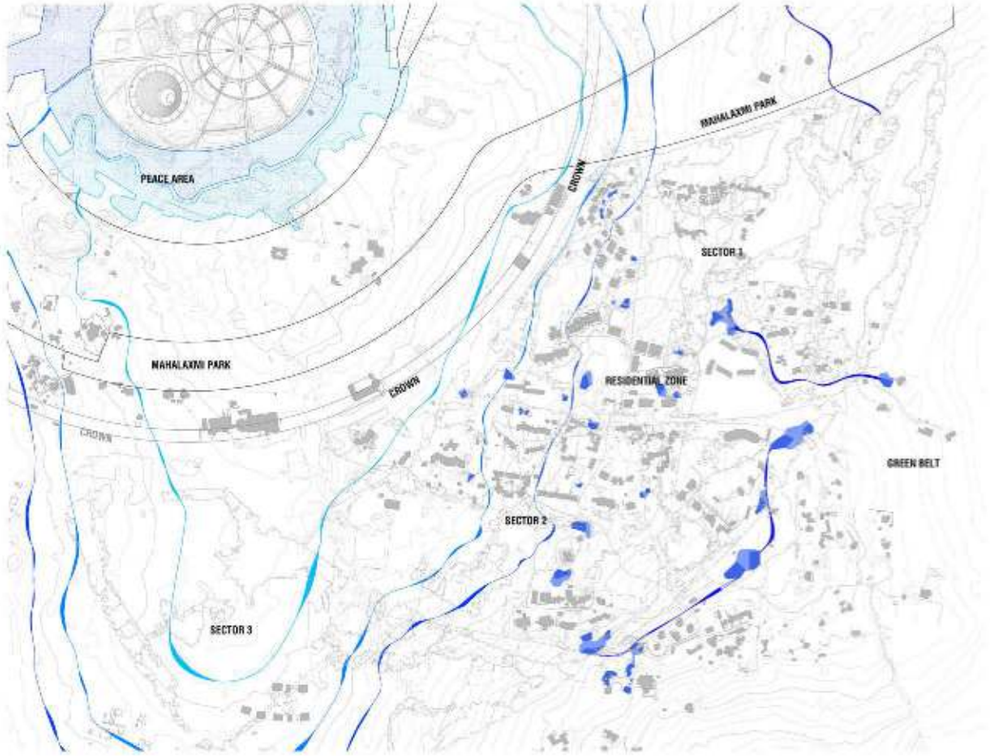


Fig. 54

The surface water Movement.

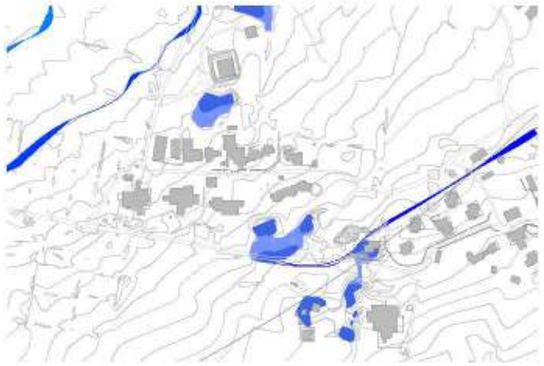
1:10 000

SURFACE WATER MANAGEMENT

The **Surface Water Management** is resolved according the strategy explained in the Land Use chapter. The swales are located to correspond with the specific contours, this is to enable the control over the run off water and a possibility of collecting it for the planned Lake.

Fig. 55

The surface water Movement.



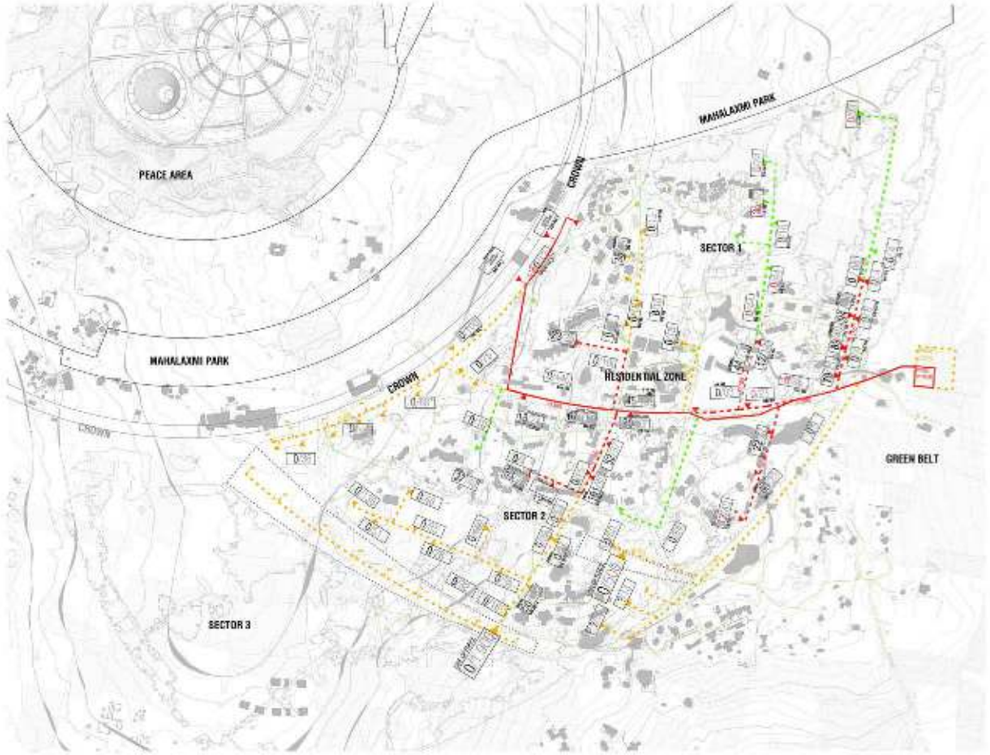


Fig. 56

Waste water management system
schematic layout.

1:10 000

_phase I
_phase I optional
_phase II
_Green Zone (optional)
0/24 _existing/projected population

WASTE WATER MANAGEMENT

The **Waste Water Management** is to be introduced in phases within the Residential Zone over the next 10 years. Set out of the system is determined by the main roads layout, the topographical contours, as well as the land ownership situation at the time of construction.

For details refer to the *Waste water management for Residential Zone (2014).*

Fig. 57

Waste water management -
the system Phasing.

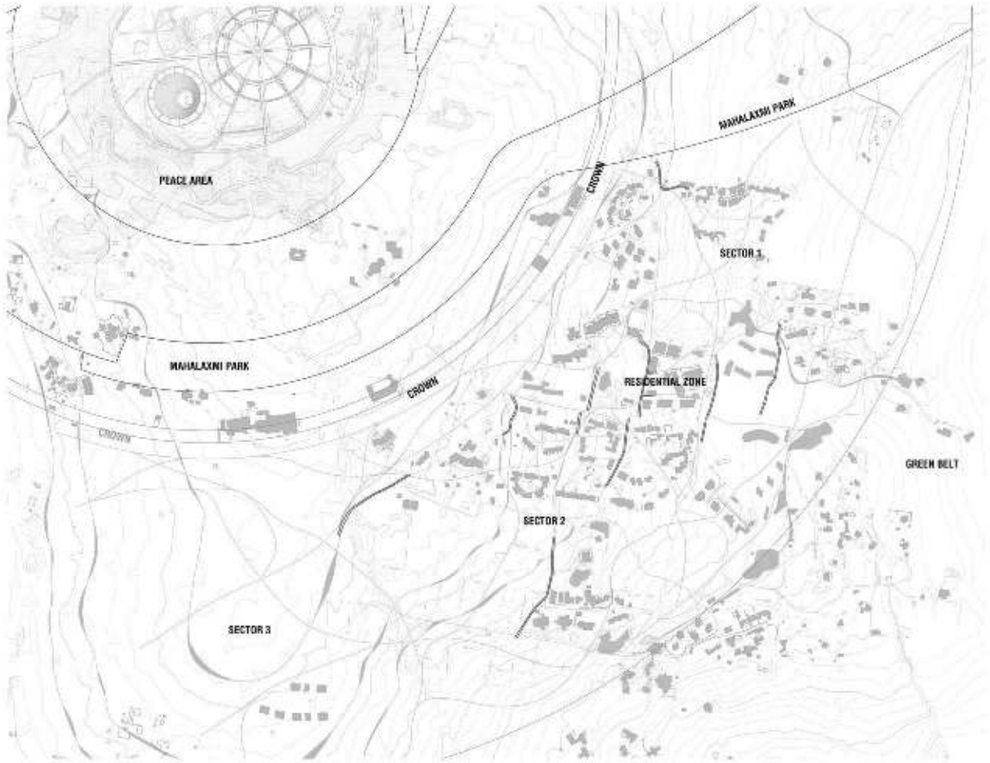


Fig. 58

The Access Roads.

1:10 000

ACCESS ROADS

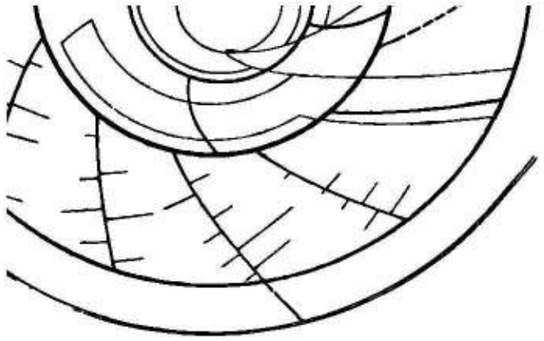
There will be no motorised mobility inside the sectors apart from the Access Roads. The network of hard surfaced roads, following the diagram indication of the *Galaxy - First Approach, (1968)*, is not to constitute the primary Movement network - Crown, Radials and the **Access Roads** with gradation of accessibility are to form a secondary Movement network.

Accordingly, the Access Roads are to serve merely as an emergency access, provide drop off and pick up points, as well as facilitate the supply and maintenance within the Sectors. The Access Roads are not to provide connections between the Radials and serve as a through traffic routes. The positioning of the Access Roads indicated in the DDP is determined by the location of the existing structures and the aim of provision of access to all of the urban Development Units in the Sector 1 & 2, with the minimum number of the roads.

Fig. 59

The Access Roads.

Roger Anger, '*Auroville, Study of the Town Plan – First Approach*', (Auroville Foundation, 1968



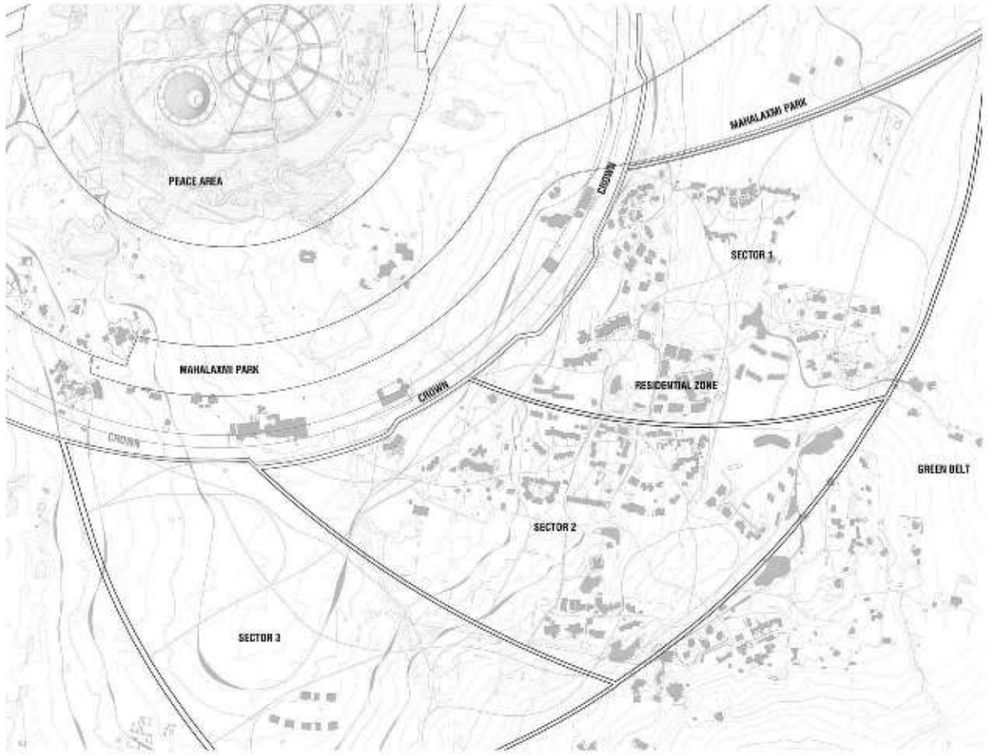


Fig. 60

The motorized transport service roads layout.

1:10 000

MAIN ROADS

The **Crown**, the **Ring Road** and the **Radials are to** serve as the main service roads for public transport, emergency access and the limited motorised transport.

DENSITY

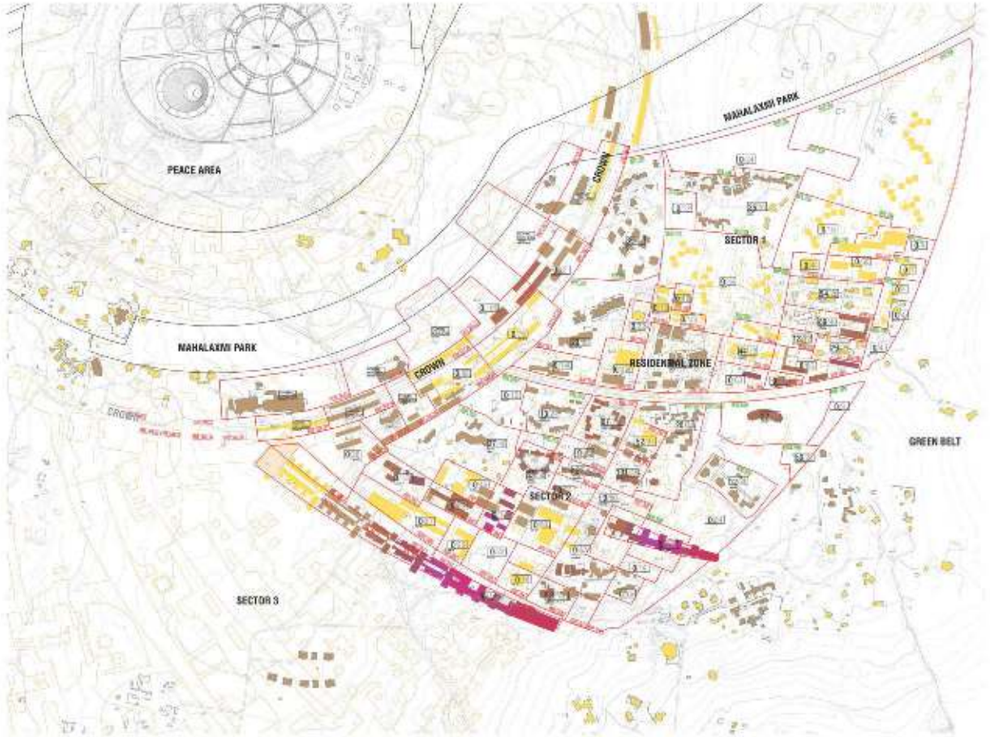
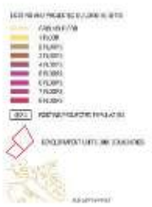


Fig. 61

Density - the developments heights and the population distribution.

1:10 000



Detailed Development Plan draws a strategy for the distribution of the planned residential units within the RZ S1&2. The strategy sets as the main target the manifestation of the Roger Anger's city concept, as presented by the *Galaxy Model (1968)* in the built environment of Auroville – this done in all three dimensions, whilst accommodating for a target population 50 000 inhabitants. Furthermore, it corresponds with the strategy of retaining the 50% of the City Area as green. This green area is to be defined by the "reverse" of the Galaxy shape – the areas filing the negative space between the mass of the *Galaxy* form (Fig.8).

Such distribution will be referred to as the density - this being a quantifiable parameter aiding the urban development planning. The analysis of the three dimensional Galaxy form and a provisional 40m^2 per person guide (as for the *Master Plan (Perspective:2025), 2001*) results in a set of varied densities that, in reality, translate into a built environment that reads as a *Galaxy* shape not only in plan but also identifiable on the ground.

Fig. 62-63

Auroville's population including the green belt population distribution as for *the Master Plan (Perspective: 2025)* (2001)

City center population distribution
As for the *Master Plan: Directions for Growth* (2004)

Fig. 64

The existing population distribution.

1:10 000

EXISTING DENSITY

Fig. 65

RZ satellite view, 2014.

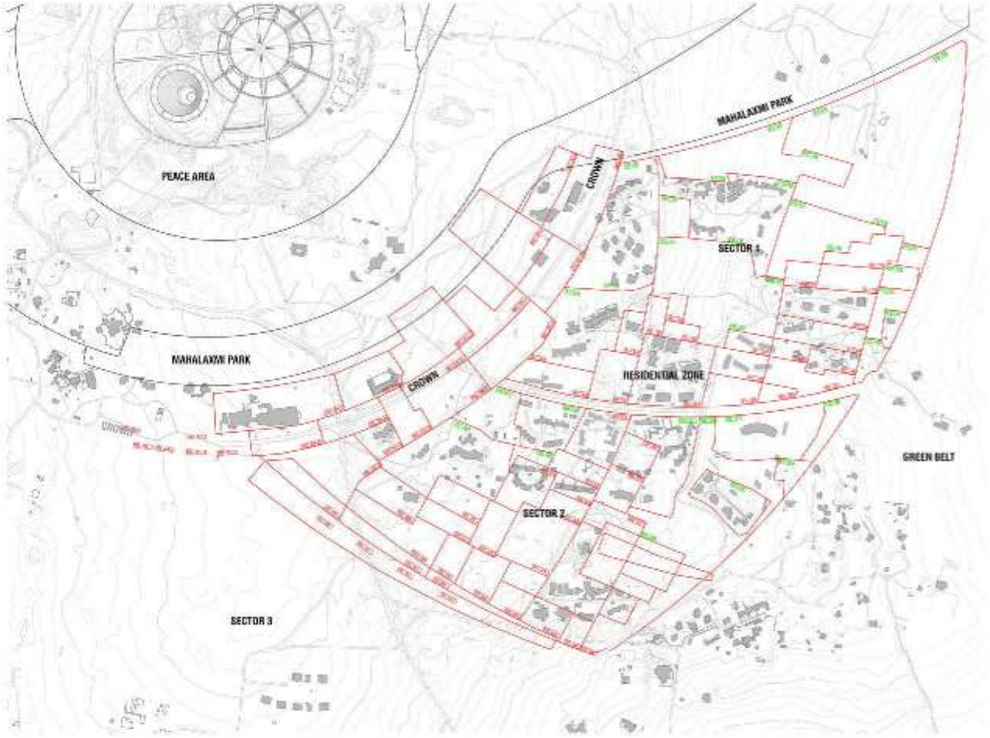


Fig. 66

The Green and Urban Development Units.

1:10 000

DU's naming system:

CR1 000 CROWN RESIDENTIAL ZONE SECTOR 1
S1R 000 SECTOR 1 RADIAL
S1U 000 SECTOR 1 URBAN LOT
S1G 000 SECTOR GREEN LOT
S3L 000 SECTOR 3 LINE OF FORCE

S1G_123 GREEN DEVELOPMENT UNIT NAME
S1U_123 URBAN DEVELOPMENT UNIT NAME
DEVELOPMENT UNITS (DU) BOUNDARIES

DEVELOPMENT UNITS

By eliminating the concept of a fixed site and instead dividing the Residential Zone into a series of **Development Units, DDP** intends to redefine, as they stand, "plots". Objective is to move on from a realm that operates with a fence line or a shape of the land, as it was acquired, as a base for defining and dividing Auroville.

Consequently, the **DU**'s do not follow the current fence line (nor indicate the future fence line) or the shape of the past farm land plots, but rather set the **virtual boundaries** that help to define the local parameters and identify the portion of Galaxy to be developed in a particular stretch of land.

Thus, the virtual **DU** boundaries serve merely for logistic purposes (like assigning FAR or projected population for the particular area), rather than giving an indication of the physical boundaries or divisions that lead to the isolation and fragmentation of the City.

Projects will be allocated to a **DU** that suits the proposed use, the number of accommodation units, the desired character of the development etc. There are various types of **Development Units**: a Pubic Space **DU**, a Green Corridor **DU** or a Residential **DU**. **Development Units** can overlap -e.g an infrastructure or a cycle path **DU** can overlap with a Residential one.

DU's can be merged and sub-divided for the suiting projects and accordingly to the arising needs, whilst certain projects might be suitable for several **DU**'s which will present L'avenir , the project holder and the architect with options to choose from.

Fig. 67

The Density and DU's.

Fig. 68

CRZ_108_M Development Unit.

DEVELOPMENT UNITS, PARAMETERS

Each **DU** has a set of parameters defining its character and relating to the **Land Use**, **Movement, Density and Urban Form**. This parameters include the Green or Urban Zone features, projected population, permitted development ground coverage and height, FAR, relation to the Green Corridor and Cycle-paths network as well as **DU**'s relevance to the development of the *Areas of Public Interest* (*API* – notion described in the Urban Form section) and the planned public spaces.

Those parameters constitute the **Development Guidelines** for the Zone.

The **DU** boundaries are set out to fit the probable and viable, yet still provisional development size. **DU** is not to be treated as a self sufficient "site", in conventional meaning of the word, but rather as a fragment of a larger urban fabric, with strong mutual dependencies with the surrounding. Hence, the individual **DU** boundaries remain flexible and are always to be developed having in mind links and relation to the neighbouring unit - aiding the integrated development and reducing the isolation of the Auroville communities.

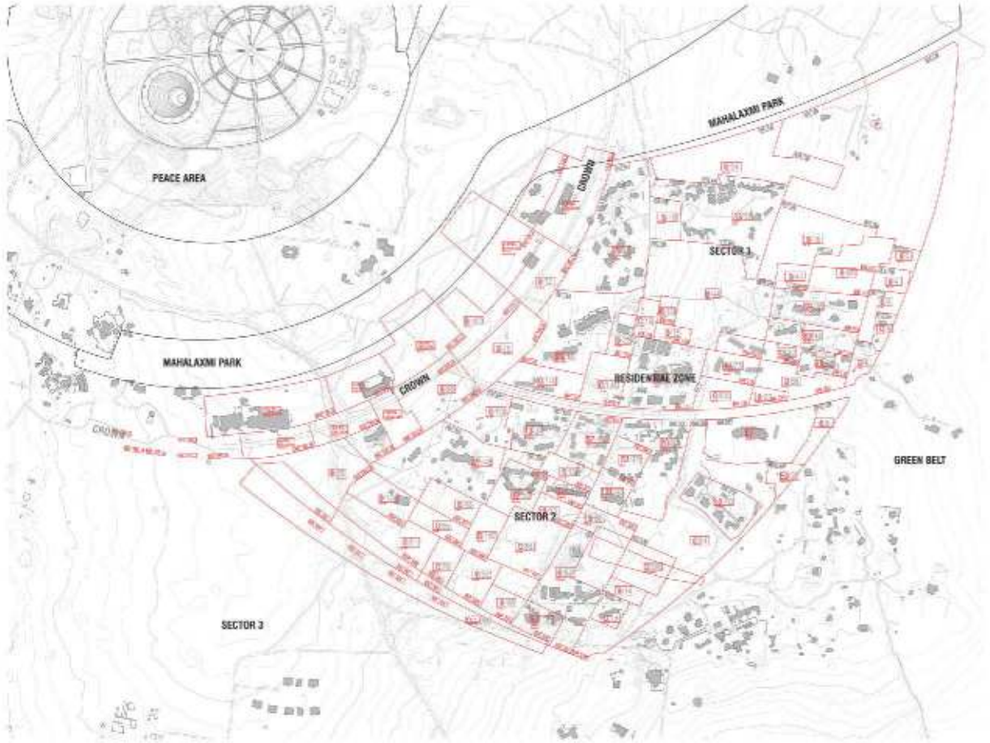


Fig. 69

The existing and projected population.

1:10 000

EXISTING AND PROJECTED POPULATION DISTRIBUTION

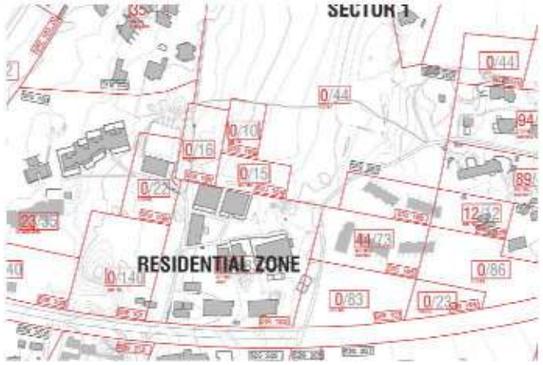
It is the built mass and it's dynamic that will make the symbolic *Galaxy* shape manifest on the ground; this mass in turn translates into the specific building heights and the adequate population distribution.

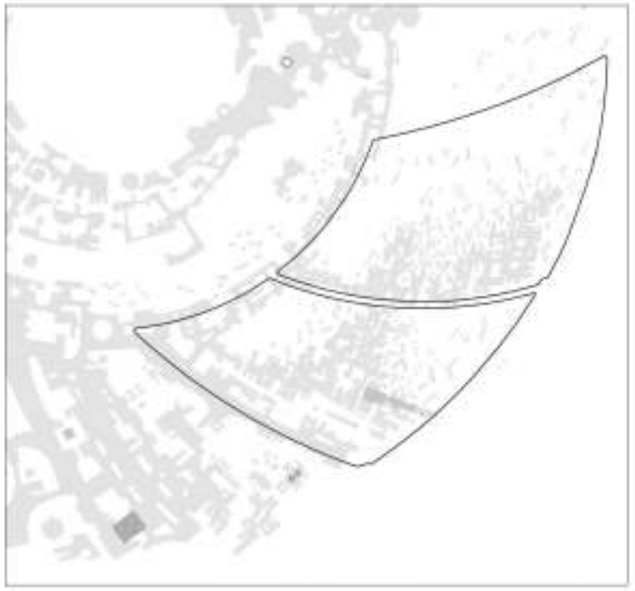
The detailed projected population targets assigned to each **Development Unit** are based on a straightforward calculation combining the *Galaxy Imprint*, the *Galaxy Model* heights, the expected 50 000 residences target (5 000 for the S 1&2) and the provisional guideline of 40m^2 per person as for the *Master Plan: Directions for Growth (2004)*.

Consequently, the scope is to create a base for the parameters that will ensure a development of a cohesive urban fabric with a **range of the population densities** throughout the city, a diversity of heights and a variety in the local build environment characteristics. In the same time, the density calculations present an opportunity for each coming development to constitute the next fragment of the symbolic *Galaxy* form in three dimensions.

Fig. 70

The existing and projected population.





POPULATION DISTRIBUTION

SECTOR 1
1500PP

SECTOR 2
3500PP

URBAN VS GREEN

Fig. 71

The population distribution methodology.

EXISTING AND PROJECTED POPULATION DISTRIBUTION, METHODOLOGY

URBAN ZONE

S1U

Area	78,936 m²
Expected pp	1,174 pp
Density	14,873 pp/km²
Built up area	46,960 m²
Current pp	71 pp

S2U

Area	107,397 m²
Expected pp	1,903 pp
Density	17,719 pp/km²
Built up area	76,120 m²
Curent pp	302 pp

GREEN ZONE

S1G

Area	183,296 m²
Expected pp	321 pp
Density	1,706 pp/km²
Built up area	12,840
Current pp	136 pp

S2G

Area	99,114 m²
Expected pp	167 pp
Density	1,634 pp/km²
Built up area	6,680 m²
Curent pp	170 pp

Fig. 72

The population distribution methodology.

DEVELOPMENT UNIT DENSITY EXAMPLE

S1G 102

35 Expected PP
= 20,342 m²/1000,000 x 1,706 pp/km²

1,400 m² Built Up Area
= 35 pp x 40m²/pp

S1G 100

22 Expected PP

880 m² Built Up Area
= 22 pp x 40m²/pp

Fig. 73

Example of the population and build up area calculation for the DU S1G 102 and S1U 100.

			area	projected PP	built up area 40	density PP/km2
GREEN ZONE	total ground floor		183,296	318		1,706
	S1G 102	Surrender	20,342	**35**	1,400	*44*
	S1G 103	Invocation	13,464	**23**	920	*35*
	S1G 104		13,576	**24**	960	
	S1G 105	Grace	20,479	**35**	1,400	*57*
	S1G 106		3,026	**6**	240	
	S1G 107		25,657	**44**	1,760	
	S1G 108	Gaia	57,673	**99**	3,960	
	S1G 109		3,518	**7**	280	
	S1G 110		9,042	**16**	640	
	S1G 111		1,787	**4**	160	
	S1G 112		2,081	**4**	160	
	S1G 113		2,742	**5**	200	
	S1G 114	Madhuka	1,567	**3**	120	
	S1G 115		1,827	**4**	160	
	TOTAL			**321**	**12,840**	***136***
URBAN ZONE						
	S1R 100		16,574	**140**	5,600	
	S1R 101		5,498	**47**	1,880	
	S1R 102	Aralí	21,687	**183**	7,320	*45*
	S1R 103		9,866	**83**	3,320	
	S1R 104		3,166	**23**	3,080	
	S1R 105		15,652	**132**	5,280	
	S1U 100		2,523	**22**	880	----
	S1U 101		1,885	**16**	640	
	S1U 102		1,160	**10**	400	
	S1U 104		8,673	**15**	600	
	S1U 105-6	Sanyana	1,706	**72**	2,920	*44*
	S1U 107		1,380	**12**	480	*12*
	S1U 108		9,317	**79**	3,160	
	S1U 109	Sukavati	11,510	**98**	3,920	
	S1U 110	Madhuka	11,098	**94**	3,760	*14*
	TOTAL			**488**	**19,520**	**71**

Fig. 74 (right)

The table shows the projected and existing population numbers, the expected build up and the area of the particular DU's in the Sector 1.

Fig. 75

The cluster housing in the Green Zone and collective living units in Urban Zone.

1:10 000

low-density cluster housing units

high-density collective living housing units

HOUSING TYPOLOGIES

The translation of the *Galaxy Imprint* into the guidelines for the urban development of the City required a definition of the key parameters driving the form. These key parameters include the form driving direction lines and the proportions of solid and negative space (refer to p.110-111). The latter is crucial to be looked into locally as well as at holistic, city-scale level in order for the Galaxy concept to be realized. Such form study results in establishing the area-specific **housing typologies**, a mosaic of different densities, and the outcome guidance that corresponds to the earlier described division into the Green and Urban Zones.

Two main **housing typologies** are revealed through the study: a dense fabric of collective residences and the more autonomous cluster housing units. Study of the form sets a very clear distinction between this two typologies; consequently, the dynamic of the form requires the presence of this two varied settlement patterns - this notion serves as a basis for the previously mentioned (Land Use) specification of the Green and Urban Zones within the Sectors 1&2. Basing the decisions regarding the future development in RZ on these parameters will safeguard a development that contributes to the City-scale, holistic vision rather than addressing solely the local needs. Moreover, keeping those parameters as outgoing point for project development ensures cohesive yet varied development, responding to the ground realities and giving space for architects' innovation.

Fig. 76

The Urban and Green plots defining the typologies in the RZ.

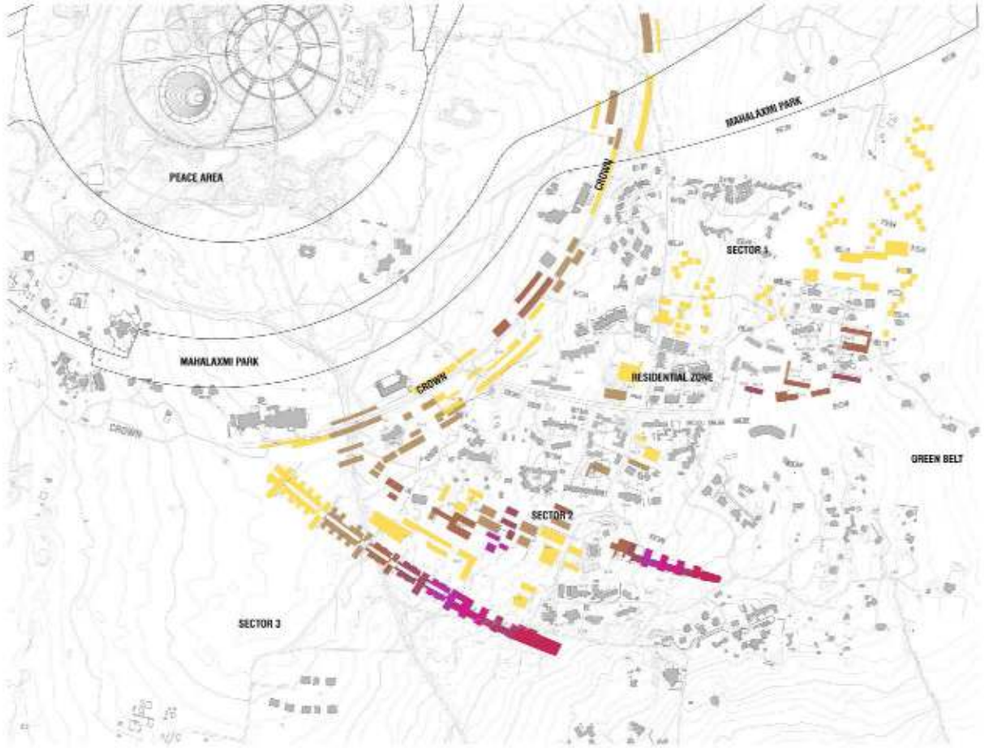


Fig. 77

The future developments heights projection based on the Galaxy Model analysis.

1:10 000

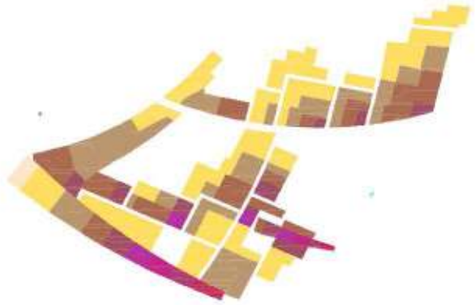
HOUSING TYPOLOGIES, HEIGHTS

The projected heights of the built fabric combine the parameters derived from the analysis of the original *Model for the City (1968)* and are combined with the projected population figures for the particular areas. This results in massing guidelines that will ensure adequate floor areas for the population goals for the RZ S 1&2 (5 000 residents) and maintain the concept developed by Roger Anger and subsequently included in the *Master Plan (Perspective:2025) (2001)* and *Master Plan, Directions for Growth (2004)*.

Fig. 78

The heights of the particular Development Units based on the Galaxy Model analysis.

Land Development Plan,
Luis Feduchi Architect, 2010)



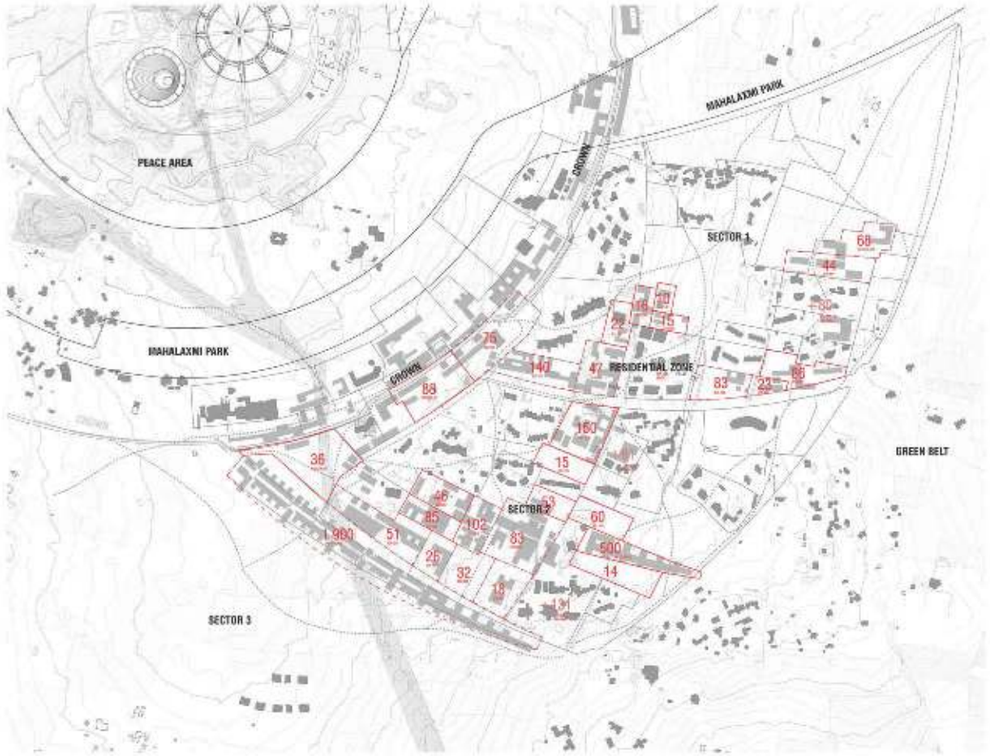


Fig. 79

Available Residential DU and the projected population numbers.

1:10 000

available urban DU
available urban DU pending the land ownership status
61 projected DU population number

AVAILABLE RESIDENTIAL DEVELOPMENT UNITS

URBAN ZONE	PROJECTED PP
S1	
CRZ 103_0	75*
S1R 100	140
S1R 101	47*
S1R 103	83*
S1R 104	23*
S1R 105	86
S1U 100	22
S1U 101	16
S1U 102	10
S1U 103	15*
S1U 111	44*
S1U 112-13	68*

	PROJECTED PP
S2	
CRZ 200_0	88
CRZ 208_0	36
S2R 200	51*
S2R 202	26*
S2R 203	32*
S2R 204	18*
S2U 205	60
S2U 206	85
S2U 207	46
S2U 208	102*
S2U 209	83*
S2U 210	53
S2U 211	15
S2U 212	150
S2 LOF1	1900*
S2 LOF2	500

The existing communities densification:

S1U 107-10 Madhuka	+80	S2R 205-6 Prathna	+131
S1R 102 Arati	+138	S2U 2013 Swayam	+61

*Pending land ownership status