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Understanding place in preparation for planning: Analysis of neighborhood patterns in Mitzpe Ramon

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A B S T R A C T

This paper presents the analysis of neighborhood and settlement patterns of the town of Mitzpe Ramon using different methods. The juxtaposition of these methods gives us a perspective of the town as a whole. We show that the town suffers from discontinuity of the built environment and low population density. Current development taking place west of the existing urban area perpetuates the low density and actually decreases it further. Thus, we suggest that further development should take place in the 'urban deserts' which are the currently undeveloped areas surrounded by integrated roads and existing neighborhoods within the town itself. Making Mitzpe Ramon more dense, compact and integrated may increase the potential for social and economic interaction between its multiple communities, and may contribute to the conservation of its unique natural surroundings.

Keywords:
Density
Spatial analysis
Urban design
Urban form

1. Introduction

Mitzpe Ramon was founded in 1956 as a cooperative association. After the break-up of the cooperative, the settlement transformed into one of the various development towns that are spread around the country and the Negev in particular. For years, Mitzpe Ramon was among the smallest development towns, with low services and occupation indices, as well as a high rate of negative migration (Zivan, 2012). However, during the late 1970s and early 1980s, following the Camp David peace accords with Egypt and the building of new bases in the area, there was an influx of military personnel into the town. Furthermore, during the 1990s, middle-class groups of residents began immigrating into town from the center of the country (Schmidt, 2014).

Urban residential patterns and processes reflect political, social and economic processes (Gonen, 1995). In that manner, Mitzpe Ramon is no exception. The old neighborhood was built at the edge of the "Makhtesh", a unique erosive crater, in the 1950s, during a period of mass immigration of Jews from Muslim countries. The neighborhood consists of 2-3 story apartment blocks with multiple entrances, typical of public housing construction of the time, as shown in Figure 1.A. The

"Ein-Ofarim" neighborhood shown in Figure 1.B., built in the 1970s (Mitzpe Ramon Local Council, 1978), when army personnel arrived to town, consists of semi-detached houses. The new neighborhood was built in the 1990s (Mitzpe Ramon Local Council, 1993), when middle-class groups immigrated into town. It consists of detached private houses, as shown in Figure 1.C. These changes reflect the changing character of the intended population for these neighborhoods, as well as the development and change in the Israeli housing environment.

Figure 1: Aerial photos and street level photographs of: A. the "Old" neighborhood; B. "Ein-Ofarim" neighborhood; C. the "New" neighborhood (Google Earth, 2014; Photography by Fabio Scheinkman, 2014)

This study is an application of different methods of analysis of neighborhoods and settlement patterns conducted in the town of Mitzpe Ramon during the spring and summer of 2014. Each part of the study is dedicated to one analysis method we used: direct observation (Jacobs, 1985); density calculations (Alexander E. R., 1993; Churchman, 1999); mapping of settlement form (Southworth & Owens, 1993); observation of movement and activity in space (Gehl, 1987; Bosselmann, et al., 1999); cognitive and evaluative image mapping and feeling maps (Lynch, 1960; Rofè, 2004; Nasar, 1990; Rosenberg-Weinreb & Rofe, 2013); space syntax analysis (Vaughan, 2007; Bafna, 2003; Penn, 2003); and pattern language analysis and its use in creating a diagnosis of place (Alexander, et al., 1977). The combination of these different methods gives us a perspective of the town as a whole.

2. Direct observation

Jacobs (1985) stresses the importance and usefulness of direct observation of places in preparation for planning, and suggests different criteria of looking at cities, which he refers to as 'clues'. The clues refer to the observation of both physical and cultural environments of an urban setting. Using this framework, we conducted observations in the streets of two different neighborhoods in Mitzpe Ramon: the old neighborhood, located at the south of town, and the new neighborhood, located in northern Mitzpe Ramon, as shown in Figure 2. Our following analysis is based on the way we perceived the different neighborhoods, rather than what we know about them.

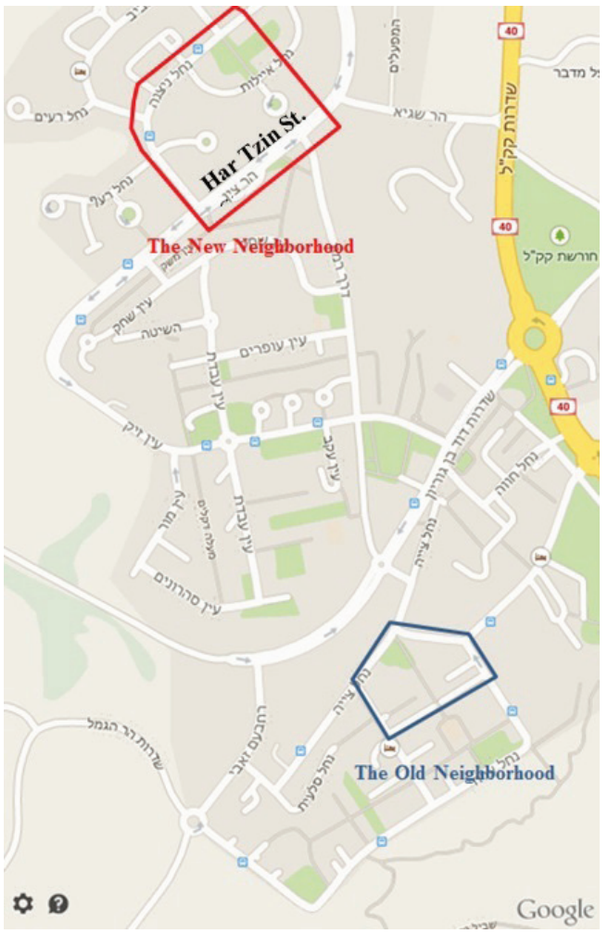


Figure 2: Observed area segment of the old neighborhood is marked blue; observed area segment of the new neighborhood is marked red (Google Earth, 2014)

The old neighborhood is the closest neighborhood to the Ramon Makhtesh and its altitude is the lowest in town. Its street pattern and building layout are linear and regular, and it consists of additional land uses other than residential. We observed commercial, leisure and educational activities that take place in it. The neighborhood consists of low mid-rise large housing blocks with few details, which seem to be public residential tenements. Some buildings have different public uses, such as kindergartens, medical centers, playgrounds, parks and religious schools (*"Yeshivot"*), while some are commercial, such as grocery stores, a café, hotels (some of which are in converted and renovated residential buildings) and offices.

Some of the residential buildings, along with their yards, and several of the playgrounds are not well maintained (cracked shutters in buildings; faded color both in buildings and playground's facilities). The streets and sidewalks, despite some broken curbs and some cracks in the pavement are generally clean and in good condition, and there is shading vegetation on the sidewalk with plants which seem to have been planted a long time ago. Buildings' yards vary in their quantity of vegetation, from flourishing gardens to neglected and thrashed areas.

A variety of people were observed in the streets: children, adolescents, elderly, and mothers with kids. The grocery stores reflect some of the communities living in the neighborhood, e.g. immigrants from former Soviet Union and the African Hebrew community. Pedestrian movement was observed not only in the streets, but also cutting through the building lots and through the parks. The original civic and commercial center of Mitzpe Ramon is located in this neighborhood, where there is still commercial activity. It is also fairly close to the contemporary center. However, we could not find a commercial street anywhere (neither in the old neighborhood nor elsewhere in town).

The new neighborhood is located at the north of town in the highest altitude area of Mitzpe Ramon, far from both the original and the contemporary center. Its streets pattern and layouts are curved and spiral, with pedestrian cut-through pathways between the streets. The neighborhood consists of low-rise, modern, detached houses, only few of which have more than one floor. The original houses were all built with the same design but the newer ones each have a unique design. The new neighborhood is almost solely residential, and the only buildings for other purposes are some kindergartens and a youth movement facility related to the Israeli labor party *("Ha'Noar Ha'Oved Ve'Ha'Lomed"*). Nonetheless, almost nobody was observed on the street. Apart from a house offering accommodation for tourists, there is no commercial activity in the neighborhood.

Despite its name, our observations suggest that the new neighborhood was not built recently, since there are public shelters scattered throughout it. These are anachronistic buildings because recent regulations impose residential houses to have their own private shelters (Mitzpe Ramon Local Council, 1993). However, trees are small and seem younger than those in the old neighborhood. In fact, the existence of vegetation in the streets is not prominent. Generally, there is little shade along the sidewalks and public spaces. Vegetation is more abundant either in private yards or as a separation barrier in traffic islands or even on the road itself, as can be seen in Figure 3 (right). These seem to have been planted in order to mark parking spaces, rather than as a relief from solar radiation.

Streets in the new neighborhood are clean and seem to be well maintained although there are some cracks in the southern part of the main road. We also observed signs of current development: construction of new residential houses on the west edge of the neighborhood, and a students' housing complex being built at the south-east edge.

Figure 3: Left – "Nahal Grofit" street in the old neighborhood, northwest oriented; Right – "Nahal Nitzana" street in the new neighborhood, northwest oriented (Google Earth, 2014)

Interestingly, in both neighborhoods, despite their differences, all of the street names are named after streams, springs and mountains of the Negev, something which may reflect on Mitzpe Ramon's (municipality's) character with respect to its surroundings. Overall, our observation of streets in the two neighborhoods give a general impression that, regarding the neighborhoods' function, the old neighborhood is more urban (at least in the context of a peripheral small town), whereas the new neighborhood is more suburban.

Jacobs (1985) argues that peoples' economic status is likely to be observable in their physical surroundings. Accordingly, our observations lead us to conclude that the economic status of people who live in old neighborhood is lower than those living in the new neighborhood. Moreover, Har-Zin Street south of the new neighborhood (shown in Figure 3) seems to be a transition line between two neighborhoods housing people of different economic means (people who live north from the street are likely to have a higher economic status).

3. Density calculations

Density is a complex concept that consists of the interaction of realities of the built environment and its perceptions. Density represents the relationship between physical area and number of people who use or who are located in this area (Churchman, 1999).

The municipal jurisdiction of Mitzpe Ramon extends to 76.8 sq. km. (ICBS, 2012) which is about 59 times larger than the town itself. This relation can be visually perceived in Figure 4.

For this reason, in order to calculate actual density within the town, we took in consideration only the urban environment where people live. To calculate this area, we defined 50m buffer zones around the town's buildings, and unified these buffers in order to determine the border of the built urban area of the town, as shown in Figure 5. According to this calculation, the urban area of Mitzpe Ramon is 1.3 sq. km.

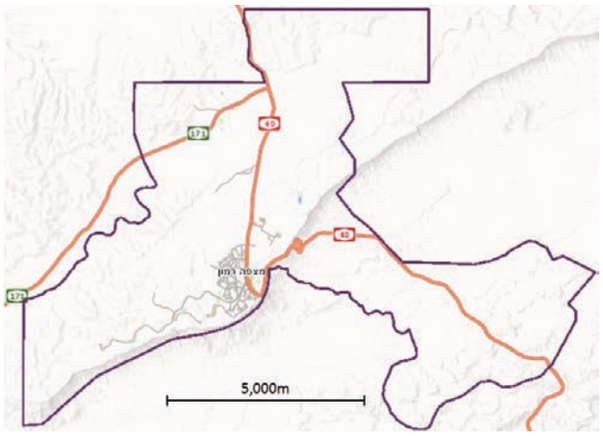


Figure 4: Jurisdiction area of Mitzpe Ramon (Gov Maps, 2014)

Figure 5: 50 meters buffer of the built area of Mitzpe Ramon

According to Alexander (1993), settlement density is a ratio of persons per number of dwellings for the entire area of the settlement, regardless of allocation and land use. According to the ICBS (2012), Mitzpe Ramon's settlement density is 62.4 people per sq. km. The reason for this low number is because the ICBS refers to the area of the whole jurisdiction of the local council.[1] Yet, referring only to the 1.3 sq. km. of the urban area, Mitzpe Ramon's density becomes 3,846 people per sq. km.

For further analyses of measured densities we selected 3 homogenous areas in different neighborhoods which differ in their building types, as shown in Figure 6.

Four other criteria of measured density are shown in Table 1. The first is gross residential density, which in this case we defined as the number of dwellings per hectare. This measure expresses the living space in the residential area. The second is net residential density, which is the number of housing units per hectare of the land area devoted to residential buildings and their facilities. This area may include yards, parking areas, gardens and playgrounds, but excludes all non residential uses. The third measure is land coverage, the ratio of the area covered by buildings to the land area of their site. The fourth is floor area ratio, the ratio of the total built area on all floors to the land area of the site (Alexander E. R., 1993).

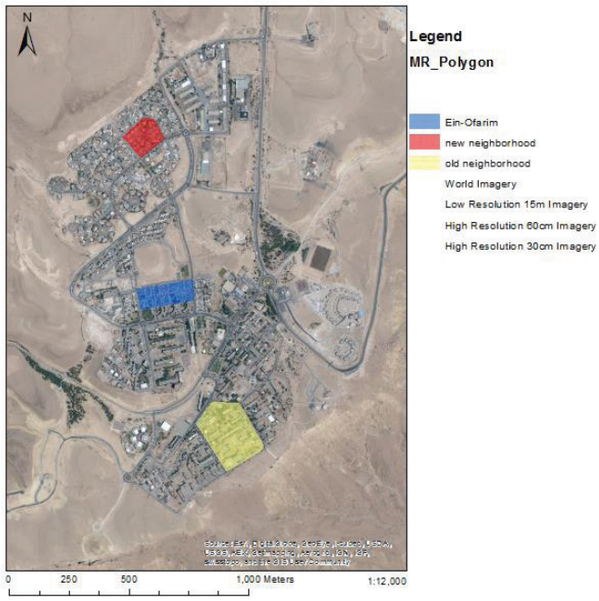


Figure 6: Selected neighborhoods in Mitzpe Ramon

Table 1: Selected homogenous areas calculations

Area name	Gross Residential Density (dwelling unit/Hectare)	Net Residential Density (units/ Hectare)	Land Coverage (built over area/ Land area)	Floor Area Ratio (total built area/ Land area)
Old neighborhood	252/5 = 50.4	260/1.78 = 261.80	0.93/1.78 = 0.52	7/1.78 = 3.93
Ein-Ofarim	60/2 = 30	60/1.43 = 61.40	0.71/1.43 = 0.49	1/1.43 = 0.69
New neighborhood	22/1.7 = 12.95	22/1.13 = 23.10	0.37/1.13 = 0.32	0.37/1.13 = 0.32

We can see that residential density at chosen areas varies and depends not only on building types, but also on the chosen criteria of the measured density. Nonetheless, regarding all criteria, the new neighborhood is the less dense of all, whereas the old neighborhood is the densest.

According to the Israeli standard, 20-40 dwelling units per hectare are considered as low density, while 290 dwelling units per hectare are considered as high density. In Tel-Aviv, areas within the city of low-rise buildings up to four stories vary between 80-240 dwelling units per hectare (Churchman, 1999). As shown in Table 1, the old neighborhood in Mitzpe Ramon has approximately 50 dwelling per hectare. Thus, it can be concluded not only that Mitzpe Ramon is a low density settlement; even its densest neighborhood is of fairly low density.

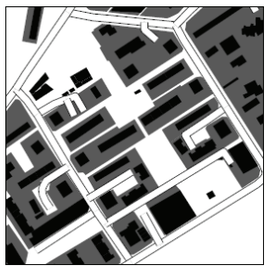
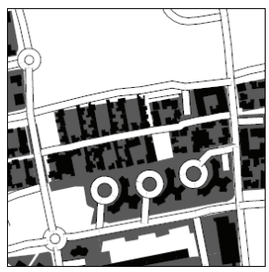
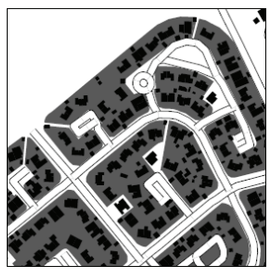
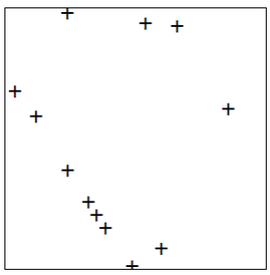
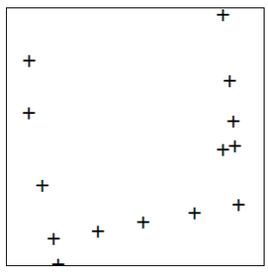
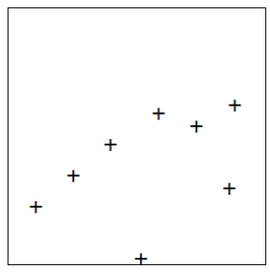
4. Settlement form

By formulating typologies for several different dimensions of the urban edge in the San Francisco bay area, Southworth & Owens (1993) show that as the scale of development grew and became more car-oriented, there was a parallel growth of self-contained, single use developments and an erosion of the public street framework. There was also a shift from rectangular continuous and well connected grid, to fragmented, warped and curvilinear street layouts. Using a similar mapping method in Mitzpe Ramon (Table 2) we show that the evolution of the urban form was not necessarily evident in

1 For comparison, the town of Ofakim's settlement density is 2338.5 people per sq. km (ICBS, 2012). Ofakim is located in the northern Negev, which, in comparison to the Negev highlands, is a more populated region, and where municipal jurisdiction areas are more correspondent to the urban areas.

the changes of the streets' length or in the ratio between open private and open public space. However, we do see a shift from rectangular street layout to a curvilinear one, a decrease in the number of intersections, and a decrease in the number of blocks in the neighborhood, both of which are features that affect movement.

Table 2: Comparative analysis of neighborhood street patterns in Mitzpe Ramon

	Old neighborhood	Ein-Ofarim	New neighborhood
Pattern (300/300m)			
Intersections (300/300m)			
Lineal meters of streets	1,469	1,441	1,358
# of blocks	20	13	11
# of intersections	12	14	8
Open private space-open public space ratio	52%-48%	43%-57%	52%-48%

5. Movement and activity in space

One factor social life depends on is the conditions of the physical environments. Thus, the surrounding environment can create an opportunity for activities and increase the probability of these to take place. We can divide the activities we observe in public space into three types: social, optional and necessary (Gehl, 1987). Necessary activities will continue to be carried out in spaces regardless of the environmental conditions within them. However, social and optional activities will usually occur only in spaces which have good environmental conditions, and are therefore an indicator of such conditions (Bosselmann, et al., 1999).

In that manner, we chose two civic and public spaces in Mitzpe Ramon and counted pedestrian movement in 3-4 locations in each one. The observations were done in the afternoon hours from 16:00 till 19:00 during the Passover holiday, thus we assume that more tourists than usual were observed on the promenade.

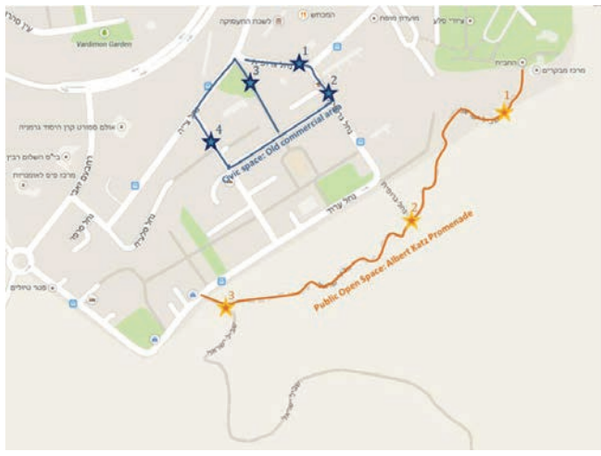


Figure 7: Static count points and paths of activity observation in the old commercial area (marked blue) and in the Albert Katz promenade (marked orange)

The civic space is the old commercial area, located in the old neighborhood; the open space is the Albert Katz promenade on

the Makhtesh's rim, which is a unique type of open space which is highly accessible for pedestrians from the old neighborhood.

Onsite we recorded activities that we expected to see according to Bosselmann et al. (1999): talking, sitting, parents walking/playing with children, bike riding, pet walking, jogging and playing. In addition, since Mitzpe Ramon is a tourist center, and because we focused also on a civic center, we also expected to observe the activities of sightseeing and hiking as well as commercial activities. The results of our observations are summarized in Table 3 and Table 4.

Table 3: Pedestrian were counted at static points. All calculations are standardized by hour, thus actual numbers collected during 15 minutes of observation are multiplied by four

Static counting point	Promenade path	Old center path
Pedestrians per hour on observation point #1	124	4
Pedestrians per hour on observation point #2	48	16
Pedestrians per hour on observation point #3	32	60
Pedestrians per hour on observation point #4	0	8
Mean	68	22

Table 4: Numbers of peoples observed doing street activities (unstandardized)

Albert Katz Promenade		Old commercial area	
Activity	No.	Activity	No.
eating	8	children playing/ running/skating	8
making coffee	2	dog walking	3
walking, taking pictures	34	walking	46
sightseeing with a guide	32	sitting on a bench	44
		going out/in of the house	18
		standing/leaning against a fence	7
		sitting in a cafés/ going in or out of a café	10

Overall, it can be seen that dividing the activities to necessary (walking; going out/in of the house) and optional (all other activities in Table 4), we see that people do not tend to do necessary activities on the promenade, as shown in Figure 8.

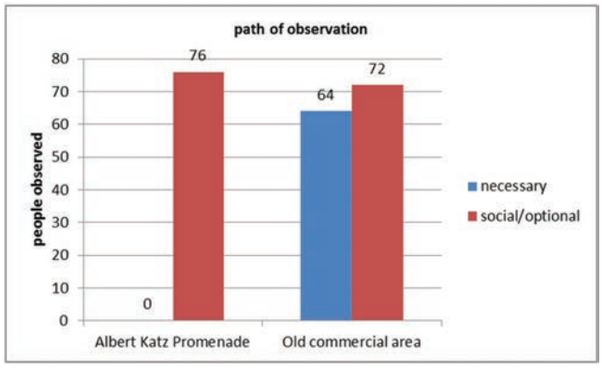


Figure 8: Necessary and optional activities

On one hand, Figure 8 shows that the promenade is a unique touristic place. On the other hand, the old center functions as a space where there is a balance between necessary and social/optional activities. Moreover, it can be surmised that the proximity of the old center to the promenade, as well as the scarce commercial activity along the promenade creates an influx of exterior people into the old center and the old neighborhood in general.

6. Image mapping, evaluative image, feeling maps

According to Kevin Lynch (1960), our cognition and the image we create of cities and urban space are built from five types of elements: paths – the channels along which observers customarily, occasionally, or potentially move; edges – linear elements not used or considered as paths by the observer, but delineating between different areas or zones in the city, or between the city and its surroundings; districts – which are medium to large areas of the city which are recognizable as having some common, identifying character; nodes – points, the strategic locations in a city into which an observer can enter, places of activity and encounter, and which are the intensive foci to and from which he is traveling; and landmarks – another type of point-reference, but in this case the observer does not necessarily enter within them, or even comes close to them, they are external to one's daily routines of life.

Following Lynch's method, we surveyed ten residents from Mitzpe Ramon, asking each of them to annotate a map of their town, while referring to its main elements as they perceive it.

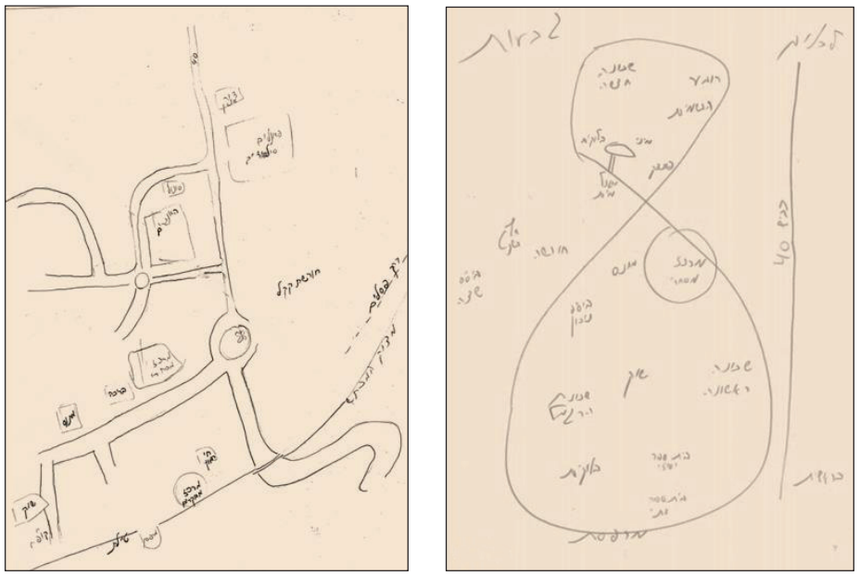


Figure 9: Two of the annotated personal maps drawn by residents of Mitzpe Ramon

The results of the sketches drawn by the participants were then combined into the Mitzpe Ramon image map shown in Figure 10.

Figure 10: Image map of Mitzpe Ramon based on a survey of residents. The map is classified into Lynch's (1960) five types of elements: paths; edges; districts; nodes; and landmarks

Despite of the relatively minimalistic survey, it is interesting to see that Figure 10 show us the town as a whole. In fact, there were more elements collected from the participants, yet we decided not to add to map elements which were mentioned by only one (10%) of them. In addition, there is not a single type of element that was mentioned by more than 75% of the participants. The possible reason for this is that the participants are heterogeneous in terms of age, gender, socioeconomic level, and their residential location.

Peoples' feeling of well-being in urban spaces are influenced more by the location of observation than by the social characteristics of the observers, and that with regard to some places at least, people seem to feel the same way (Rofè, 2004). People tend to respond positively to naturalness, good upkeep, open views, order, and historic significance; and tend to respond negatively to man-made nuisances, dilapidation, restriction, and disorder (Nasar, 1990).

Figure 11 shows similar feelings regarding the open space in the old neighborhood, even though they correspond to different people at different times. While the first feeling map [left] represents an exercise whose participants were two local teenagers and the authors, the second feeling map represents a thorough research conducted around town, whose participants in this particular area were a group of seven people (Rosenberg-Weinreb & Rofe, 2013). It is important to clarify that the left map of Figure 11 represents a small sample used only in order to learn and experiment with the technique, and in no way constitutes a feeling survey of the town or of a particular neighborhood.

Figure 11: Left – Aggregated feeling map of the original commercial center in the old neighborhood, made by the authors, 2014; Right – Aggregated feeling map of the commercial center in old neighborhood made by Rosenberg-Weinreb & Rofe (2013). Red marks show common feeling in common spaces

The attributes of the physical environment which affected peoples' feelings in our exercise were vegetation, desert view, presence of people and (good) personal memories, which all elicited good feelings; signs of neglect, graffiti and cats all provoked bad feelings.

7. Space syntax and urban place analysis

The city is a large collection of buildings linked by space on the one hand, and a complex system of human activity linked by interaction on the other hand, meaning there is the physical city and the social city (Vaughan, 2007). Using space syntax analysis we can explore the relationship between people and their surrounding environment, as shown in Figure 12. Space syntax is a program that investigates society-space relationships by focusing on turning continuous spaces of various scales – buildings, settlements, cities, and landscape – into a connected set of discrete units (Bafna, 2003). Clues to the nature of individual motivation and cognition may be implicit in space syntax theory and analysis, and by this contribute to a better understanding of individual level mechanisms (Penn, 2003).

This kind of analysis helps us understand not only the role of different roads in an urban setting, but also the potential of different areas regarding development. Figure 12 shows us the importance of Ramon Road and Ein-Zik Street as integrated paths in the urban setting. This means that these two streets are the streets from which one needs to make the least turns in order to reach all other streets in town, a calculation which is significant in terms of predicting movement.

Figure 12: Integration syntax of Mitzpe Ramon. The "warmer" the color of a road is, the more integrated it is. The most integrated streets are Ramon Road (red colored vertical street) and Ein-Zik Street (red colored horizontal street)

8. Pattern language analysis and diagnosis of places

In planning and designing their environments, people rely on certain "languages", which, like spoken languages, allow us to articulate and communicate an infinite variety of designs within a formal system which gives them coherence (Alexander et al., 1977). Alexander and colleagues suggest 94 patterns that deal with the large-scale structure of the environment. In the following section we present a diagnosis of Mitzpe Ramon regarding ten of these patterns which we identify as a part of the town's language.

8.1. Country towns

This pattern refers to towns with a population between 500 and 10,000, entirely surrounded by open countryside, 10 miles from neighboring towns. Mitzpe Ramon is the most isolated settlement in Israel. The closest recognized settlement to Mitzpe Ramon is Midreshet Ben-Gurion, a settlement with less than 1,600 residents, 34 kilometers to its north (ICBS, 2012; Google Earth, 2014).

In order to recharge the local economy Alexander et al. (1977, pp. 33–35) suggest economic incentives to local businesses and industries and a zoning policy to protect small towns and the countryside around them. These incentives are granted in Mitzpe Ramon in the form of tax relief and nature oriented/ military oriented zoning, as shown in Figure 13.

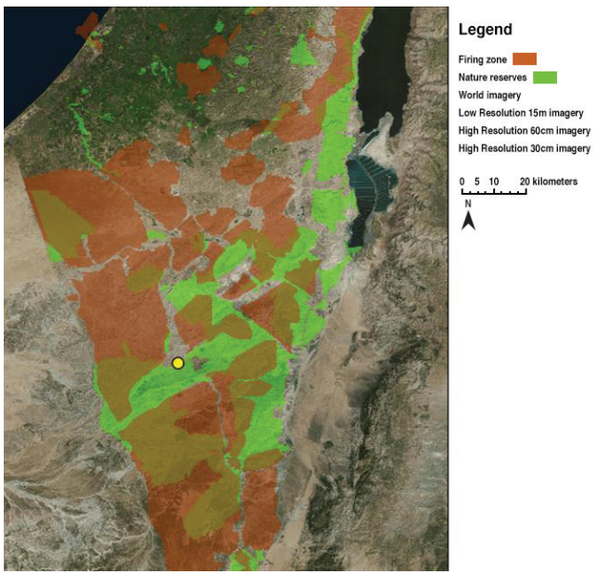


Figure 13: Location of Mitzpe Ramon [Yellow point] in a remote, isolated location which is mainly zoned as military firing zones and nature reserves

Although further zoning policies are being promoted at the moment (UNESCO's Man and Biosphere; Nature Protection Authority's "Land of Craters"), additional social services can be provided in order to empower economic activity in town, which is to a great extent based on tourism. For instance, the co-managed tourism department of Mitzpe Ramon and Ramat Ha'Negev regional council could subsidize shuttles to hiking and tracking starting and ending points, due to the lack of public transport. Moreover, re-distribution of towns in the region should be reconsidered since around Mitzpe Ramon there are Bedouin settlements planned to be allocated to a new built town[2]. The residents from these settlements commute to Mitzpe Ramon, which is a civic center to these Bedouin communities. In addition, tour operators from Mitzpe Ramon cooperate with the Bedouin in their villages because of tourist demand.

8.2. Mosaic of subcultures and subculture boundary

These patterns refer to a city made of a large number of subcultures relatively small in size, each occupying an identifiable place and separated from other subcultures by a boundary of nonresidential land (Alexander, et al., 1977, pp. 42–50). Wherever there is an area of homogeneous housing in a city, its inhabitants will exert strong pressure on the areas adjacent to it to make them conform to their values and style.

Schmidt (2014) recognized five core communities living in the urban area of Mitzpe Ramon: "*Mizrahi*" veteran immigrants (Oriental Jews from North Africa and Arab countries); (American born) African Hebrew Israelites of Jerusalem; "*Russi*" emigrants from countries in the former Soviet Union; Secular Westernized newcomers; and "*Dati Leumi*" (National Religious) Settlers. As for their spatial relation, "*Mizrahi*", Hebrew Israelites, and "*Russi*" communities are dominant in the old neighborhood; "*Dati Leumi*" are dominant around the central cluster of town (inclusive of Ein-Ofarim neighborhood), around the Midbara K'Eden Yeshiva campus; and the Secular newcomers are dominant in the new neighborhood, near the old industrial zone ("Incense Route District") as shown in Figure 14.

Mitzpe Ramon's current development trend toward the western outskirts of town might hurt the potential of Mitzpe Ramon's mosaic of subcultures, since this kind of development perpetuates the already fragmented urban fabric of town, instead of developing the existing town which has low density. In addition, we argue that development within town should also consider common intercultural spaces that are attractive to people as a whole, regardless of their cultural background. As we have shown earlier there are common physical environments

2 We refer to District Master Plan 65/14/4/ "permanent settlement for the Bedouin dispersion (Ramat Tziporim)".

that people from different backgrounds like.

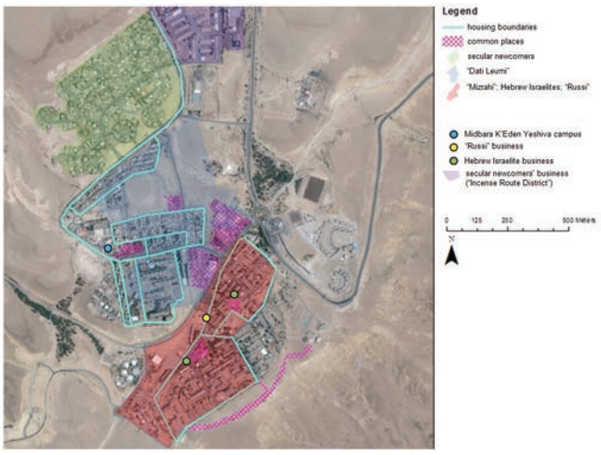


Figure 14: Boundaries between homogenous housing, subcultures clusters, and common intercultural spaces

8.3. Community of 7000

This pattern is complementary to "Mosaic of subcultures" pattern. The 5000 residents of Mitzpe Ramon are a small enough community to be linked to the local council. The distance between the people and the local council is close enough for communication, both geographically and socially. As shown in Figure 15, not only is the local council located in a central location, it is also placed in a humble building, with no physical barriers.

The larger the community is, the longer the distance is between citizens and the local council. For instance, the distance between the citizens of Be'er-Sheva, a town of over 200,000 residents, to Be'er-Sheva's municipality, is greater than the distance between the approximate 5,000 residents of Mitzpe Ramon to their local council. The proper size proposed for the political community is calculated by Alexander, et al. as follows: at 25 persons per acre, some 2000 persons; at 60 persons per acre, some 4500 (Alexander, et al., 1977, pp.70-74); in Mitzpe Ramon 5000 residents/321 acres = some 15 persons per acre[3]. In other words, not only does Mitzpe Ramon consist of quite a lot of communities, but also the distance between people is relatively high. These factors might be an obstacle towards a united community. On the other hand, this actually means that maybe the community needs three sub-centers that serve each of the three subcultures mentioned before.

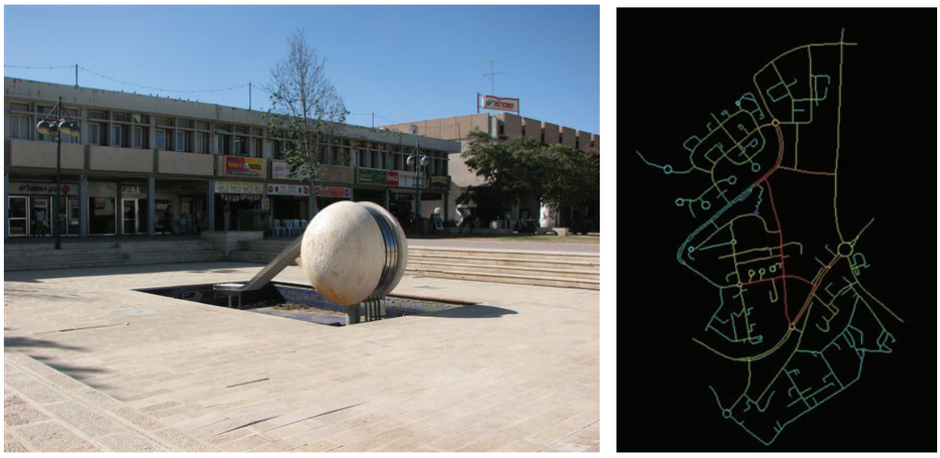


Figure 15: Left – location of the local council; Right – The local council's building

8.4. Sacred sites

This pattern refers to people's spiritual roots with regards to their physical environment. Therefore, the pattern suggests that ordinances which protect the sites of spiritual importance should be established so that our roots in the visible surroundings cannot be violated. These sites can either be man-made or natural (Alexander, et al., pp. 131–134). This description fits the special phenomenon of the Makhtesh, being one of the town's main interests.

Mitzpe Ramon's peoples' point of interaction and perception of the Makhtesh varies from disinterest, through spiritual, to sacred (Schmidt, 2014). We suggest encouraging people's interaction with the Makhtesh by enabling movement of people within it either for leisure or educational purposes.

3 1.3 sq. kilometers of the urban area = 321 acres.

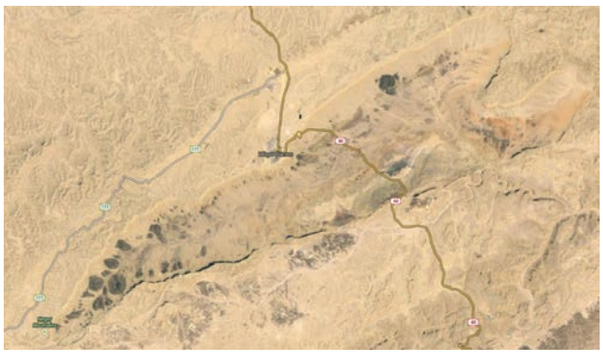


Figure 16: Mitzpe Ramon's sacred site, the Ramon Makhtesh

8.5. High places

High places give people a place to climb up to, from which they can look down upon their world. They also offer people a place visible from far away that can be used for orientation. Alexander and colleagues argue that if high places are less frequent, they tend to be too special, and they have less power as landmarks (Alexander, et al., pp. 315–318). Mitzpe Ramon's topography is blessed with high places from which the town and the dramatic natural scenery can be viewed. Some of these high places are already successfully used as leisure and touristic epicenters as shown in Figure 17.

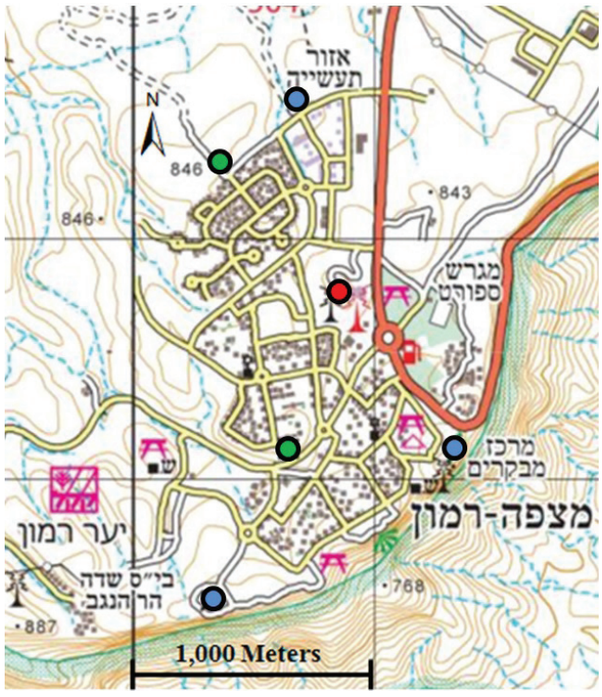


Figure 17: Successful [blue]; unsuccessful [red]; and potentially successful [green] high places within Mitzpe Ramon

We suggest that Antenna Hill at the center of town shown in Figure 17 [red] could have been a successful high place for people, had not the antennas been built there. We also suggest that the water tower [green lower point] and benchmark 846 [green upper point] shown in Figure 17 are potentially successful high places where development of infrastructure can be suitable. In fact, these spaces are already in use by people, though not necessarily as the purpose of high places discussed here.

8.6. Local sports

This pattern suggests scattering places for team and individual sports through every community and neighborhood, while making the activities visible to passers-by, as an invitation to participate. Sport facilities should be treated as a special class of recognizable simple buildings, which are open and easy to enter (Alexander, et al., pp. 363–366). With respect to its size, Mitzpe Ramon offers various sport facilities, both public and private. Among these are soccer, basketball and tennis courts, fitness equipment at parks, a gym, and swimming-pools. There are also activities such as yoga, dancing halls, bike rental, horse riding, and archery. In addition, its location on the Israeli National Trail and on the edge of nature reserves connects it to various hiking paths which are suitable for various physical activities. Figure 18 illustrates the facilities throughout town.

Figure 18: Sports facilities around Mitzpe Ramon [yellow points] and paths suitable for walking, hiking, running and cycling

A possible way to boost sports in town is to build facilities for professional athletes, were they could benefit from the weather

and height setting of the town and its surroundings. This could also help build the unique economic identity of the town as discussed in the first pattern.

8.7. Animals

This pattern refers to the argument according to which animals are important and unique part of any city, as part of the nature and culture (Alexander, et al., pp. 371–375). In Mitzpe Ramon we can see animals walking within a city. Ibex walk freely between buildings and have become representatives of local nature, and the city itself. The town also has an alpaca farm and a zoo, where children can play with animals, feed them and touch them. The locations of the farm and the zoo are shown in Figure 19.

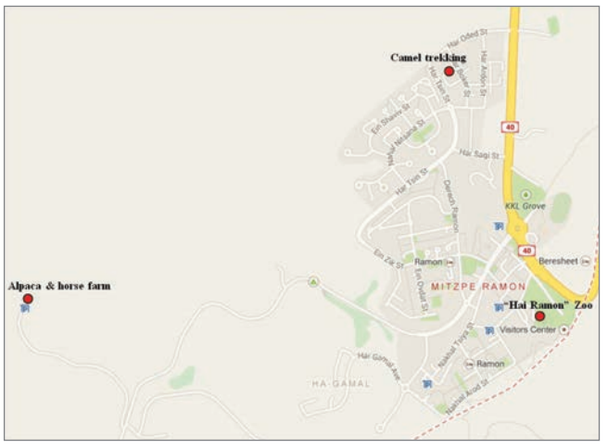


Figure 19: Map of locations of animals in Mitzpe Ramon

In addition, camel tours are offered as a tourist attraction. However, the camels are not allowed to park in town. In that manner, enabling animals to park in the undeveloped areas within town ('urban deserts'), or to let them stay in the various groves at the edges of town could make Mitzpe Ramon more of a town where animals are integrated into life.

8.8. Corner grocery

Corner groceries play an essential role in any neighborhood due to their convenience for people, and they often become a destination for a walk. The success of the corner grocery depends on its location in the heart of the neighborhood, and its potential to serve more than 1000 people (Alexander, et al., pp. 440–443). As shown earlier, the corner grocery often represents different cultures and communities living in a given neighborhood. As it can be seen in Figure 20, apart from Ein-Zik street grocery store, all other grocery stores are located in relatively low integrated places. It seems reasonable that the reason for this is the distance from the supermarket located in the central commercial center of town.

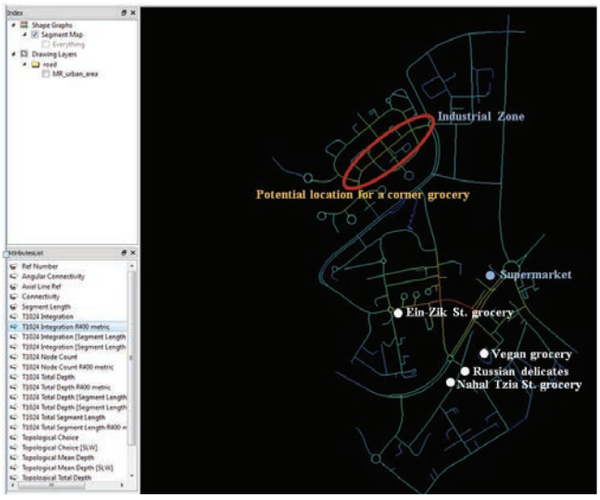


Figure 20: R400 metric integration syntax of corner shops in Mitzpe Ramon

It is also noticeable that the new neighborhood at the north of town has no grocery store. Following Alexander and colleagues' recommendations and using space syntax analysis, we suggest that a potentially suitable place for a corner grocery in that neighborhood is on Nahal Nitzana Street (perhaps nearer the main road where it can serve visitors to the industrial area as well).

8.9. Traveller's inns

This pattern highlights the importance of tourism which interacts with the town and with fellow travelers (Alexander, et al., pp. 448–450). Mitzpe Ramon has visitors and travelers who come to enjoy the desert spirit, to stargaze, to view animals or to seek silence. As shown in Figure 21, the town offers many places where people can stay.

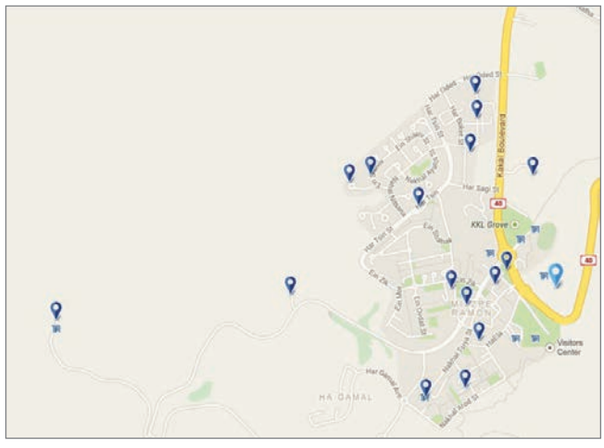


Figure 21: Traveler inns in Mitzpe Ramon

In fact, apart from a hotel located on the Makhtesh edge, and apart from the inns in the farms and industrial zone, all of the traveler's inns in Mitzpe Ramon are located within the neighborhoods, sometimes in peoples' houses. This setting enables travelers to interact with other tourists, as well as with locals.

8.10. Urban deserts (additional diagnosed pattern)

This is a pattern identified by the authors. By 'urban deserts' we refer to the currently undeveloped spaces surrounded by integrated roads and existing neighborhoods within the town itself, as shown in Figure 22. These unused spaces cause discontinuity in the urban fabric and reinforce the separateness between the various social groups within this small town.

Figure 22: "Urban deserts" within Mitzpe Ramon

9. Conclusions

Despite Mitzpe Ramon being a country town in terms of its size and remoteness, it has quite a lot to offer to its inhabitants and visitors. Moreover, it has the potential to offer even more. The town's unique setting within major nature reserves and exclusive landscapes, as well as the transition of traditional industries from Israeli periphery to the exterior, has made Mitzpe Ramon a fertile platform for various tourism activities. Multiple communities that live in town add yet another aspect of uniqueness.

Despite the town's discontinuity of built environment which already makes Mitzpe Ramon less dense, the current development taking place west of the existing urban area (Mitzpe Ramon Local Council, 1995) perpetuates the low density and actually further decreases it. Regarding the social and spatial analyses we have made, we would like to suggest that further development should take place in the 'urban deserts' of town.

Making Mitzpe Ramon more dense, united and integrated may increase its potential of social interactions among the multiple communities rather than continue their separation from each other. Moreover, it will encourage more people to use the streets on foot rather than by car, and may also contribute to the conservation of its unique natural surroundings.

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