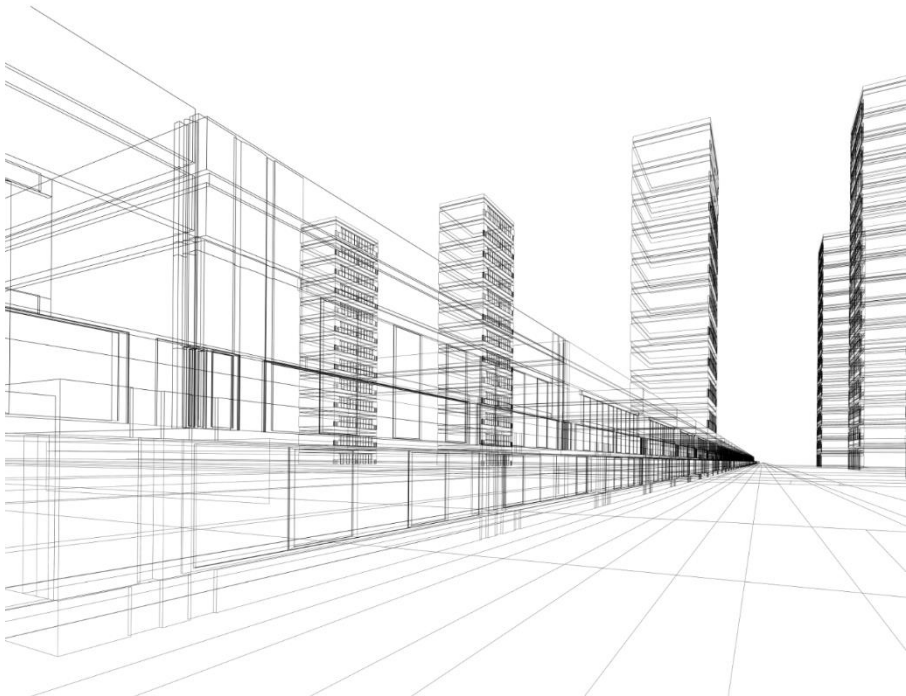


DOES ISRAEL HAS PLANNING STANDARDS

DANIEL ROTHFELD
Bachelor and Diploma in Architecture



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1. Introduction

As cities become more complex while shaped by population growth and urbanization, standardized plan-making practices with clear instructions for their utilization are essential. With the aim of ensuring safety, accessibility, and a representation of current and future public needs. Most Western countries have developed planning standards to ensure adequate public needs facilitation for new developments and existing urban built-up environments. These standards can range from legally binding regulations to general guidelines issued by the government, all of which are derived from factors of demographics and density of the population, along with other changing criteria. Planning standards are important and are there to ensure that the population will have a rich, accessible, and stimulating environment.

The research topic for this dissertation is focused on whether Israel has established planning standards, and if so, what do they entail and how they are applied. Since most of the literature on the matter is in Hebrew, one of the aims was to provide an accessible overview of the subject in English to encourage further research into the topic and bridge the gap of the language barrier. This in turn, allows for further exploration and comparison to other countries in the Middle East. Encourage communication and collaboration between Israeli and international planners and more. Given that Israeli standards cover a vast list of topics, an additional case study of an existing area and how the standards come into fruition in it could have been made if a different time limitation had been available. In view of this, the method selected was the literature review, and official governmental publications were consulted as well.

The dissertation is structured in 4 sections. The first section has a brief history of planning methodology, exploring when and how planning standards started, and the main ideas that are still present in developing planning standards today. The chapter also introduces the terms and concepts in planning standards to familiarize readers with the terminology that will be used throughout the dissertation. Finishing the section with an explanation about the currently used theories of planning and how they associate with planning standards.

The second section focuses on Israel, providing an overview of its geographical location, the different districts, and the occupied territories. In addition, the social aspects, demographics, density, and population statistics relevant to forming planning standards. This chapter also explains the

governmental structure in Israel, the urban system, and how the legislation impacts the standards.

The third section delves into the public use planning standards in Israel, outlining the aims of the guide, how the standards for projects should be calculated and assessed, and categorizing the planning standards by different subjects, such as education, health and welfare, community and culture, religion, sports, emergency and rescue, and open space. Additionally, the chapter provides a brief explanation of private use standards.

The fourth section and the final chapter of the dissertation, is the conclusions, summarizing the main findings and outlining the future directions of research in this field. Overall, this dissertation aims to contribute to the understanding of planning standards in Israel and encourage further research in this area.

2. Planning methodologies, standards, and theories

2.1. Brief history of planning methodology

The history of planning methodology is complex and filled with multiple definitions, approaches, and theories. These theories and approaches were built upon shaping the urban environment by political, economic, engineering, or aesthetic considerations and not necessarily strictly planning concerns, though the motivation of planners to improve social conditions and public health cannot be minimized in their importance. The start of modern planning as a distinct field came in the 19th century in England, Europe, and the US to try and counter the changes and urban ills provoked and aggravated by the industrial revolution. Planners tackled housing, hygiene, and transportation, which needed solutions because of the fast population growth, and new types of production and transit (Hein, 2018). From there, the interest in planning only grew and evolved.

The overall preoccupation with plan-making brought new ideas, approaches, and methodologies to the table, such as the *survey-before-plan* and *inter-relationships in plan-making*, among the notable ones that can still be evident in today's practices. The spread of the survey-before-plan methodology can be attributed to Patrick Geddes (see, Figure 2.1) , a British botanist, sociologist, and town planner, who planned, among other things, the first outline plan for Tel Aviv while Israel was under the British mandate. Geddes believed that taking account of the social aspects of the city can help with the order of the physical planning of the environment. Together with the Cities Committee of the Sociological Society in the UK, he produced a pamphlet that mentioned which surveys the planners need to complete and strongly recommended showing the results of the survey to the public (Batey, 2018).

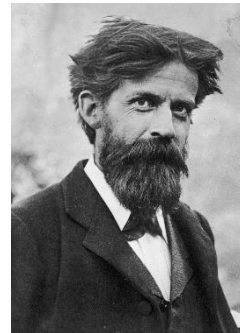


Figure 2.1 – Patrick Geddes. Source: (The Patrick Geddes Centre, 2023)

This methodology was added upon by Patrick Abercrombie (see, Figure 2.2, Page 4), another British planner, who believed that Geddes' approach was not defined enough and might lead to an overcollection of data. He refined the idea further by saying that a team of experts, each in their field, will collect a wide array of data and statistics while the town planner will do an additional practical examination of the area,

an appraisal of sorts, using all the gathered information for the creation of the actual plan. The survey-before-plan method had a shift in the 1950s with the introduction of the *rational planning* approach, which specified a set of steps that planners had to make in order to finalize and complete their plans. This helped define the process that needed to be taken between the survey part and the realization of the plan, which until now was known only as a “creative leap.” The steps were, setting goals and the objectives needed to reach the said goals, preparation of several alternative plans that achieve the goals, choosing the preferred plan, implementation, monitoring, and plan revision about five years after implementation (Admin, 2020). There are other definitions of these steps, but all are on the same general idea with some differences for the last steps, mainly not all suggest a revision.



Figure 2.2 – Patrick Abercrombie. Source: (English Heritage , 2023)

From the rational planning process, further evolution of this approach came from William Holford (see, Figure 2.3), a British architect and town planner. He defined the process in three stages, *survey*, *development*, and *program* (Batey, 2018) The survey part should include geographical, economic, and social aspects. The development is a process between the study of the survey and the actual plan. The last part, the program, includes the financial, administrative, and legislative characteristics that might be needed for the plan.



Figure 2.3 – William Holford. Source: (Fry, 2020)

The second methodology is the inter-relationship approach. This approach states that in the urban environment, everything affects everything, e.g., the financial status of the inhabitants will affect their ability to buy, which will, in turn, affect retail. This might mean less retail space will be needed in certain parts of the city. The methodology is best represented by the *systems approach*, led by Brian McLoughlin and George Chadwick, which published several textbooks on the matter (Batey, 2018, p. 55). The approach stated that mathematical equations could help model the spatial systems of the city, which affect and interact with one another. After a successful study, this approach was mainly used to deal with issues of allocation due to employment growth. This approach was mainly used for structure plans, not regional ones, which differed by their legislative dependence. It was

often a lengthy administrative process, and the plans were arranged by planners that could not give the plan their undivided attention.

An additional, different strategy for the interrelations in a city that required less technical skills was emerging the *strategic choice* approach. In the Institute of Operational Research (1963), the researchers used qualitative techniques to understand council decision-making by using two techniques *Analysis of Interconnected Decision Areas* (AIDA), and the second was a technique to mitigate uncertainty while making decisions. Planners adopted both because they offered a way to refrain from the problematic creative leap and were easier and more practical than their counterparts (Batey, 2018, p. 57). This approach was also different in focusing on the present, not the anticipation of the future, like most previous approaches and methodologies.

Today, planning is a future-driven discipline, and the above-mentioned methods and approaches are evident in the processes done before planning and how plans are presented for approval. It has evolved with time and become more complex and diverse. The research done before plan-making has the technological benefits of the time and can be more accurate, vast, and not to mention easily arranged and accessible than in the past based on real manifestation in the population and not only as a survey. The affecting relationships in the city are a widely accepted notion, as well as influencing and reflecting on the proposed plans and the anticipated changes in areas that arise from these relationships. The field became more interdisciplinary, with collaboration with stakeholders in the planning process. To further refine the subject of plan-making, urban indicators were introduced to help planners sieve through the data and correctly allocate the needed uses.

2.2. Planning standards terms, concepts, and their application

Along with methodology and approaches of planning, numerous terms in urban planning help to understand and plan correctly by considering the various aspects that need to be addressed. A set of definitions helps planners communicate efficiently among themselves and other related disciplines, such as architects, engineers, and other various consultants. Essentially creating an international language that brings understanding between planners from different countries and allows them to exchange ideas and share their visions, subsequently progressing the plan-making practices. Each country has its own

additional acronyms and definitions per needs and language, but the main concepts remain the same.

To properly understand planning standards, we need to put them in the context of urban indicators. Urban indicators are divided into two groups, state indicators and planning indicators (see, Figure 2.4) (Pissourios, 2023). *State indicators* look at the urban area's historical, current, and future state to help establish the correct assessment of the needed uses of space. For example, looking at the population of a certain area, how many inhabitants there were a few years ago compared to the current population, can estimate the population's growth.

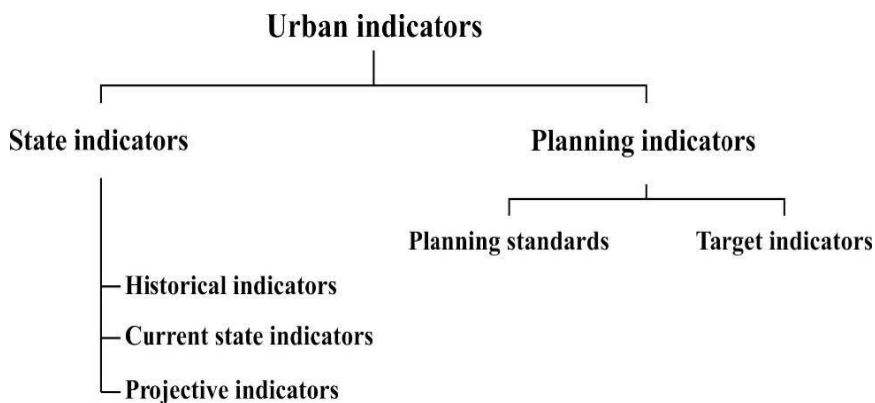


Figure 2.4 – Typology of indicators by their use in the planning process. Source: (Pissourios, 2023, p. 3)

This can help determine an area's future residential and subsequent public urban needs. Planning indicators are divided into *planning standards* and *target indicators*. Target indicators comprise a valid target for the future. In many cases, such as the planning of private uses, future state indicators are turned into target indicators, since the estimated future needs for private uses is indeed a valid target for the development of the respective use. On the other hand, planning standards set a minimum and a maximum range of the allocated space for a specific use and are usually applied for public uses. For example, in Israel, the allocation of space for a health clinic is between 200 to 1,000 sqm or 0.1 built sqm per person, as a planning standard allocating public use for space. Planning standards come into play in every aspect of the planning, whether for an already built environment (city renewal) – a city that needs to reevaluate the

space allocation of public buildings and urban uses to accommodate new population and structure changes or for a whole new area to be built from scratch.

Planning indicators comprise a crucial methodological tool for planners since they allow them to calculate the needs for various private and public uses of proposed plans. They are derived from several elements that dictate the allocation of urban uses. The average household size, population density as derivative from the average household, demographics, and other social factors. Alongside zone regulations that mandate the use and density allowed in specific areas and legislation with its drawbacks, a planner can begin the process of drawing up plans and make informed decisions regarding the urban uses needed in the area.

Zoning regulations show the allowed use of the land in question, residential, industrial, or agricultural, but not the social aspects that a good plan has to address. With the world's growing population, more and more land is allocated to mixed-use and preferred vertical growth in cities. Whether it is city renewal, the addition of space to an already built environment, or a new area, to correctly allocate the needed space, urban planners need to estimate the expected volume of the future population in the planned area. Planning standards consider a vast array of variables to allocate the correct uses with the right ratios. The average household differs from city to city and from neighborhood to neighborhood, age, income ability, habits, traditions, and more.

2.3. The association of planning standards to planning theories

Over the past century, various planning theories have been developed, each with its own strengths and weaknesses. These theories brought with them two main approaches to planning: the *top-down* approach, which emphasizes central decision-making and technical expertise, and the *bottom-up* approach, which prioritizes community involvement and local knowledge. The most widely used approach is the top-down approach, which includes two main planning theories: the systems view and the rational approach (Pissourios, 2014). As mentioned, and described in the earlier chapter, most Western countries use the top-down approach to urban planning, with no reliable alternative present to replace this approach. Even if it has the disadvantages of sometimes not

calculating the right population needs or neglecting some, it is the best planning solution.

The system view theory, which is a part of the top-down approach, expresses its planning process with the actual and the desired state when the desired state is achieved by setting quantified objectives, which can be regarded as standards that need to be implemented to get to the desired state of the proposed plan (Pissourios, 2014, p. 88). The second mentioned part of the top-down theory is the rational approach. In this approach, standards are also manifested by setting goals and objectives, but a *satisficing strategy* and *directionality* are also addressed (see Figure 2.5). This notion states that when there is an inability to calculate the exact ratio of the needed space, the planner should go in the *direction* of the ratio he thinks is favorable and add the satisficing side to it, as in the minimal needed to provide the said need. This is also evident in planning standards, with most of the standards providing a minimum for all the allocated needs it lists.

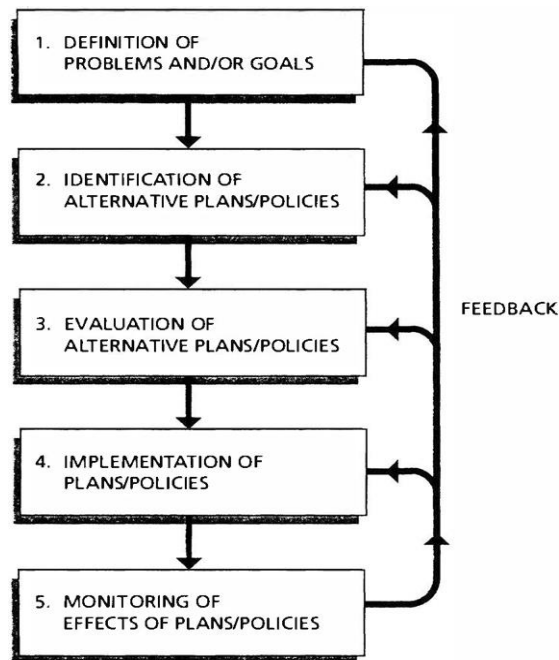


Figure 2.5 – Rational approach the stages of planning.
Source: (Taylor, 1998, p. 68)

For the bottom-up approach, there are two additional theories, the *postmodern* and *communicative*, but only the communicative theory is notable mainly because

the postmodern approach is almost impossible to apply to urban planning, and thus there is no reason to elaborate on it further (Pissourios, 2014, p. 84). The communicative theory, developed by John Forester and Patsy Healey, states that the local community knows its needs better than the governmental planning standards, and some needs might not be **adequately addressed** without consulting the people on the ground. This theory is based on the need for open discussion between all the main characters of the community and the arrival of the agreed-upon solutions for their environment.

Planning standards are not compatible with the bottom-up approach and the communicative theory because they generalize and uniformly decide the needs of a community without local consultation. Even with the minimum – maximum ranges for the standards, there is not enough attention given to how the local inhabitants want their community to be, only to how the government wants it to look. Another disadvantage of the approach is how it can be compatible exclusively with small-scale projects. The theory does not take into account the human aspect and the notion of “So many men, so many opinions: to each his own way.”¹ Meaning that when dealing with a bigger area, larger scale project, and more people involved in the open discussion, reaching an agreement can be a very lengthy process. Moreover, a bottom-up theory needs a bottom that can be consulted. This means that new projects with no previous community can only be built using the top-down theory. Not to mention projects with supralocal uses or planning that require cooperation with other organizations and communities, such as transportation, sustainable development, and more.

Israel uses a top-down planning structure, with the planning standard guidelines dictated by the government and implemented by the local authorities, adapting, and adjusting the standards and the needs of their specific population.

¹ Terence, *Phormio*, Act II, scene 4, line 14 (454) original *Quot homines tot sententiae: suus cuique mos*
Source: <https://quotepark.com/quotes/1862915-terence-so-many-men-so-many-opinions-to-each-his-own-way/>

3. Israel: Geographical, political, and social information

3.1. Geography

Israel is a middle eastern country with a relatively small territory of 22,072 square kilometers. Bordering Lebanon on the north, Syria on the northeast, Jordan on the east and southeast, Egypt on the southwest, and a coastal line to the Mediterranean Sea on the west (see Map 3.1). The country's topography consists of highlands in the north, with Mount Meron being the highest point in Israel at 1,208 meters, the Negev desert in the south that reaches Eilat, and a coastline at the western border with the Gaza Strip, Ashqelon, Ashdod, Tel Aviv, Herzliya, Netanya, Hadera, and Haifa along the length of the coast.



Map 3.1 - Map of Israel with the bordering countries (source: (Geology.com, 2023)



Map 3.2 - - Israel divided by districts (source: (HaMichtol Jewish Encyclopedia, 2023)

Israel is divided into six administrative districts (see Map 3.2). North District (1), Haifa (2), Tel Aviv (3), Central District (4), Jerusalem (5), and South District (6). With Judea and Samaria (7) under Israeli occupation but recognized under Palestinian sovereignty and Gaza Strip (8) under the governing authority of the Islamic Resistance Movement (CIA, 2023). Each

Israeli administrative district has several subdistricts and cities, with each city having its own municipality and smaller settlements having local authorities.

Occupied territories in Israel include: The Gaza Strip is 363 square kilometers of primarily flat coastal line bordering Egypt. The West Bank, also known as Judea and Samaria, is another occupied territory in Israel, left over from the British mandate with the borders established in 1949. It is about 5,650 square kilometers, comprised of limestone hills. The main cities in the area of Judea and Samaria are Jenin, Nabulus, and Ramallah to the north of Jerusalem and Bethlehem and Hebron to the south. Jericho is the chief municipality of the area. Furthermore, East Jerusalem is claimed as a future capital of the Palestinian area and is 126 square kilometers in size (Brtriannica , 2023).

3.2. Social aspects

Currently, the estimated population of Israel is 9,124,158 (World Population Review, 2023) and is divided into Jewish and others² at 78.9% and the Arabic population at 21.1% (Planning Administration, 2018). The Central District is the most populated area in Israel, with 2,233,000 and an additional 1,452,400 in Tel Aviv (City Population, 2023), constructing 40% of the population of Israel. Jerusalem District has an estimated population of 1,159,900 (City Population, 2023). The above population and rest of the districts (see Figure 3.1). The population density is 423.96 per square kilometer (World Population Review, 2023). Only 5.6% of land in Israel is built area, with 90% of the population living in the urban environment (Central Bureau of Statistics, 2022).

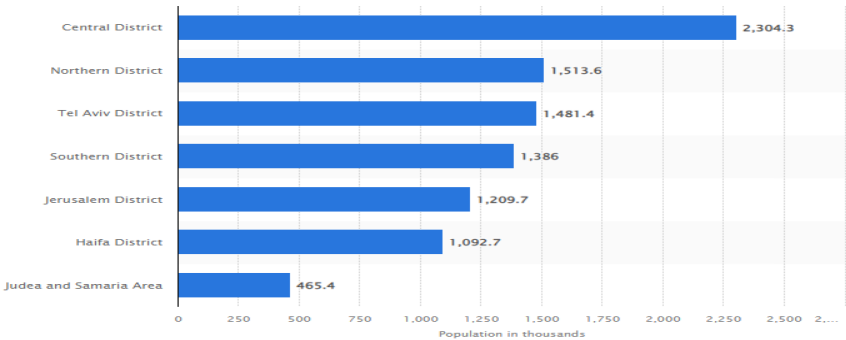


Figure 3.1 - Population of Israel by Districts. Source: (Statista, 2021)

² Christians, other religions, and without religious classification

Regarding Israel's demographics, the population between ages 0 to 14 is 28.2% while the population of ages 65 and over is only 12% (Knoema, 2023). Even though the average annual growth rate of the elderly population is 0.98% (from 1973 to 2022), the general population growth is at 1.6%, which places Israel in the 32nd place worldwide (World Data, 2023). The average household currently stands at 3.23 people, which can differ greatly from city to city and even from neighborhood to neighborhood, depending on the population. For example, an average Arab household is 4.58, and a 3.12 average for Jewish households (Planning Administration, 2018). Further differences will be apparent in Jewish and Arab households depending on the city of residence. Each municipality collects statistical data for its population which helps planners with their location-based calculations.

The average net income for a household is 16,559 NIS monthly, which is approximately 4,290 EUR³ (Central Bureau of Statistics, 2022), and the average monthly expense, including accommodation, is 15,990 NIS (4,143 EUR, using the same calculation as previously), of which 25% are housing expenses. Even though the unemployment rate in Israel is 4.30%, only 58.7% of the population eligible for employment, 15-65, is working (Central Bureau of Statistics, 2022). This is due to the fact that a major percentage of the Orthodox Jewish population does not work and is supported by taxes.

3.3. Governmental hierarchy

The government in Israel is a parliamentary democracy. It has three main branches, legislative, executive, and judiciary, with the legislative branch being the dominant one elected by the population. The system works on a principle of separation of power, with the judiciary branch working independently of the other two branches. The state is governed by a prime minister and a cabinet of ministers, The Knesset (see Figure 3.2, Page 13).

³ Using a calculation of 1 EUR = 3.86 NIS, 24/02/2023

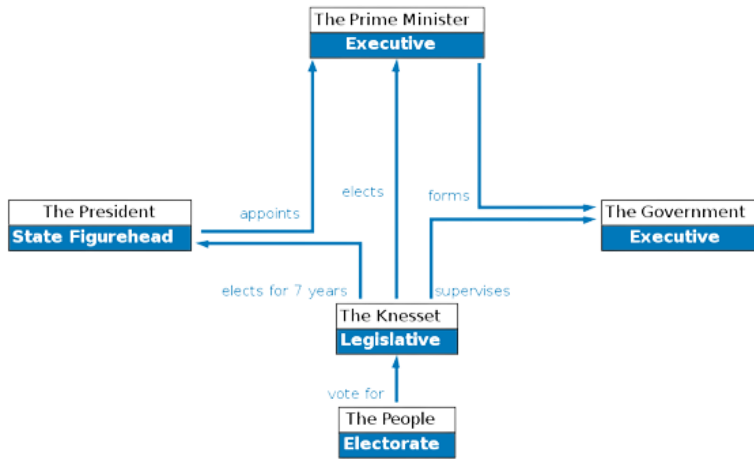


Figure 3.2 – Israeli governmental hierarchy flow chart. Source: (Brennan, 2022)

In addition to the general country government, there are local authorities in Israel, municipalities for cities bigger than 20,000 inhabitants, and local councils for rural or communal settlements between 2,000 and 20,000 inhabitants. For local councils, there is an overseeing council for several settlements in an area. The last authority is a council authorized over industrial zones, of which there are only 2 in Israel, and they do not have residents. The Ministry of Interior was in charge of all local authorities until 2005 after which the Ministry of Finance took over.

3.4. The planning system of Israel

The early start of urban planning in Israel came with the British Mandate and the town plan for Tel Aviv in 1925 by Patrick Geddes (see Map 3.4, Page 16). He incorporated the characteristics of the Garden City movement⁴ of the 20th century by incorporating dedicated spaces for gardens, playgrounds, and sporting facilities as well as standards for residential buildings of two-story maximum, buildings line, road planning, and designated sidewalks (Welter, 2009). Today, the modern urban planning system in Israel is divided into several stages and levels.

⁴ The response to the overcrowding that came with the Industrial Revolution was by improving the quality of life in an urban area, incorporating compact residential, agricultural, and industrial uses within the city, and connecting them with a green belt. (Britannica, 2023)

The highest level in the planning system is the National Outline Plan (NOP), in Hebrew the abbreviation is TAMA (תמ"א) and this is how all the involved in planning processes refer to it. The NOP is a long-term plan that sets goals and policies for national infrastructure, transportation, housing, industry, and other areas of planning. These outline plans have their designated number for each type of use the plan relates to. Such as the NOP 35 which sets the general use of areas in Israel (see Map 3.5, Page 17), with the last update on 02/06/2022 regarding residential density. Most of the policies and information in the different NOPs are in written form listing policies and notes for planning and not as a dedicated map. Among the different NOPs there are NOP 22 for forests and afforestation, NOP 3 for road infrastructure, NOP 38 for building strengthening for earthquakes, and more. The NOP is developed by the National Planning and Building Council and approved by the government.

The District Outline Plan (DOP), in Hebrew, is pronounced as TAMAM (תמ"מ) and shows the land allocation from the NOP in a more detailed manner (see Map 3.6, Page 18), including city parks, industrial zones, and residential areas. The DOP, in turn, guides the next levels of the system, the City, Local and Detailed plans, which can be applied to an entire city, neighborhood, village, or just a single plot. The Local or Detailed Plan can be issued by a local municipality, a public office, or a private investor and is approved by the District Planning and Construction Administration.

On the local level, with more detailed guidelines for the development of specific urban areas, there is the City Building Plan (CBP), TABA (תב"ע) in Hebrew (see Map 3.7, Page 19). Developed by the local municipal planning departments in collaboration with stakeholders and the community. The CBP takes the directives from the NOP and DOP and translates them into a localized detailed plan. These plans must follow an agreed-upon format, the Uniform Structure for Plans (USP), with the abbreviation MAVAT מב"ת in Hebrew. In addition to the uniform format, the official governmental internet site includes all past and future approved plans on all scales, upcoming Council meetings regarding approvals, and the computerized online upload system where plans can be submitted for approval.

The structure of the CBP must include a "Terms" section, that outlines the allowed uses in the plan the ratios, the percentage of allowed cover, and the allocation of uses in written form with the description of all intended

construction. Next, a planning section with an environmental study, orientation map, the existing condition of the site, and the approved “future plan”. Additional appendices might be needed for infrastructure, transportation, and other details, depending on the size of the project. Along with the strict structure, the USP has a color code that has to be followed as well, pertaining to all uses shown in the drawn plans.

For example (see Figure 3.3), the specified colors for employment/commercial uses and designated colors for residential structures with further sectioning to classification according to the overall floor area ratio, a total of main areas, and service areas addressing Residential A as up to 100%, B from 101% to 200%, C from 201% and up to 350%, and Residential C from 351% and up. A CBT can be proposed for a new construction project or enhancement to an existing area.

Example	Code	Employment Designation
	200	Employment
	210	Commercial
	220	Offices
	230	Manufacture
	240	Storage
	250	High-Tech
	260	Light Industry
	280	Engineering Facilities
	290	Mixed Urban
	300	Form Buildings
	750	Events Building
	972	Logistics Center

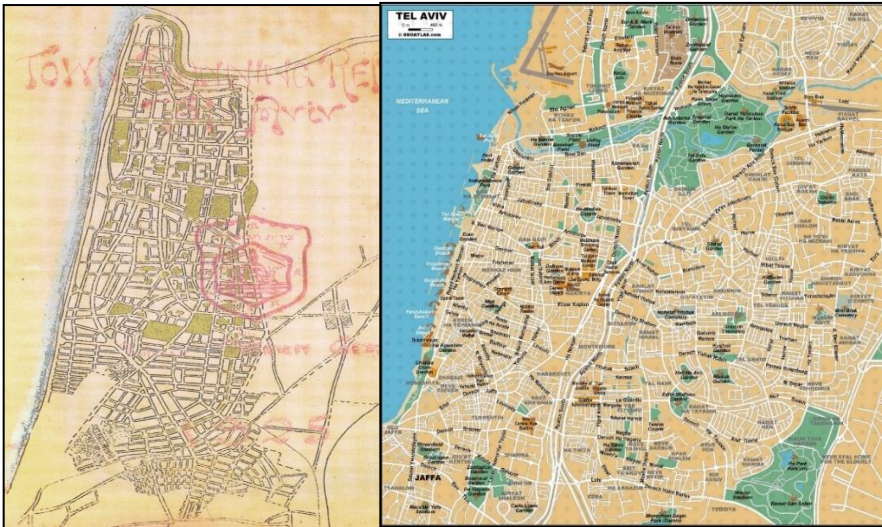
Example	Code	Residential Designation
	10	Residential
	20	Residential A
	60	Residential B
	100	Residential C
	140	Residential D
	150	Special Housing
	160	Residential in a Rural Settlement
	170	Auxiliary Farm
Residential classifications according to overall building percentages on the lot: (Total main areas and service areas above and below ground) Residential A - up to 100% Residential B - from 101% and up to 200% Residential C - from 201% and up to 350% Residential D - from 351% and up		

Figure 3.3 - MAVAT color code for employment and residential buildings.
Source: (Planning Administration, 2022)

The system in Israel has evolved from the early days to a modern system that has several stages and levels of planning and incorporates a uniform structure for plans to make the process easier for approval and presentation, both for the decision-makers and the plan submitters.

With a clear top-down system of planning, beginning from the NOP that dictates and guides the DOP and to the local level of the CBP and local planning and plan approval.

The evolution and growth that the Israeli planning system has undergone are vast and can be evident as an example from the changes Tel Aviv went through from the initial Geddes plan and to the urban spread that it has now (see Map 3.4 and Map 3.3).

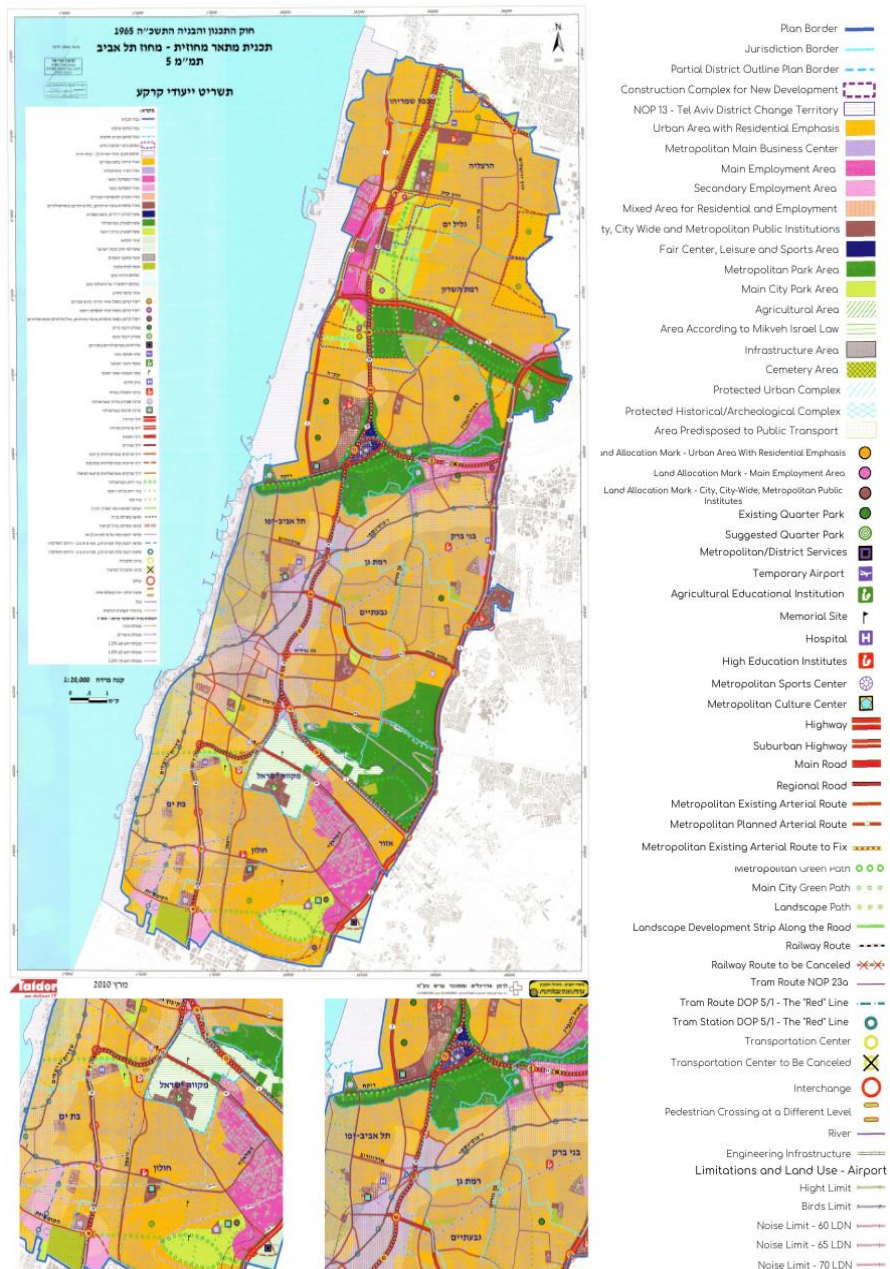


Map 3.4 - Original Geddes plan for Tel Aviv. Source: (ESRA, 2009)

Map 3.3 - Map of Tel Aviv as it is now. Source: (Tel Aviv Map 360, 2023)



Map 3.5 - An Example of the National Outline Plan of Israel – Textures Plan – Central Area Map (top) number 3 out of 5, Tel Aviv detailed map (bottom-left), translated map legend (bottom-right). Source: (Planning Authority, 2005)



Map 3.6 - Tel Aviv District Outline Plan (top-left), detailed map of the southern area (bottom-left), detailed map of the central area (bottom-center, translated legend (right)).
Source: (Planning Authority, 2010)



Map 3.7 - An example of a City Building Plan for the improvement of housing conditions and additional construction in a neighborhood in Tel Aviv. Source: (Planning Authority, 1999)

3.5. Legislation

The first legislative measure to regulate planning institutions was in 1965, with the Planning and Construction Law. The law applies on all levels, from the national to the local, and all the outline plans (national, district, local), including preservations, reconstruction, roads, and more. From 1965 until now, there were 137 amendments issued to the law to tackle the different changes in the country, industry, and international standards (sustainable building and zero carbon emission).

In accordance with the law, committees on planning and construction were introduced. The structural hierarchy of the established committees is as follows:

- The National Council for Planning and Construction
- National Infrastructure
- District Committee
- Local/Regional Committee.

The main National Council has 32 members, made up of governmental ministers, representatives of local authorities, and professionals in the construction and planning field. Each representative sector makes up a third of the overall number of members (Center for Real Estate Editors, 2023). The National Council oversees and approves district plans, consults the government on all planning and construction matters in the country, including legislative suggestions, and presents the NOPs for governmental approval.

As previously noted, there are seven districts in Israel. Each of the districts has a District Committee, established per section 7 of the Planning and Construction Law. These committees oversee District Outline Plans and present them for approval to the National Council and approve city building plans in their judicial area. The Committee consists of a chairman, district planner, and representatives from government offices related to planning, local authorities, Israel Land Authority, environmental organizations, engineers, and architects. In Judea and Samaria, due to military law, corresponding committees with the same hierarchy exist and functions but under different governmental authorities. The regional committees oversee supervising that all the plans of the Local Committees in their district are in accordance with the law and in the allowed allocations of the National Outline Plan.

The lowest planning committee is the Local/Regional Committee. It is considered local if there is only one authority under it and regional if there are several. The main responsibility of these committees is the approval of plans in their region, along with providing guidance and suggestions to the District Committee for plans in their vicinity. In addition, they issue building permits in areas approved for City Plans in their locality. In 2014 an amendment to the 1965 law was made, granting additional powers to local authorities to hasten the planning processes. The local committee has up to three months to decide on the permit requests it has received, and the answer has to be sent to the architect and the contractor of the plan. If the permit has been declined, an appeal can be submitted to the District Committee. The Local Committee also submits plans within its area that it cannot approve to the District Committee that it would like to promote.

In addition to the Council and the different Committees, the law lists the offenses and the corresponding punishments for each. The punishments span from fines in different ranges relative to the offense committed. For example, a double fine can be issued for a person that built without a permit. A fine, as defined in the law, and an additional fine double the value of the built structure. Furthermore, there is an option of imprisonment for up to two years for certain offences.

4. Israeli standards for urban planning

4.1. The Guide for Allocation of Urban Spaces, introduction, and principles

The *Guide for Allocation of Urban Spaces* (see Figure 4.1) is a guide for the local authorities to help them correctly allocate the needed spaces for new plans and for expanding the already built environment. The first version of the guide was published in 1964, with additional updates that followed over the years. The last version on which the latest guide was built was published in 2001.

The changes in the demographic and the expected population growth formulated the need for an updated version of the guide. The population growth is expected to need around 1.5 million new residential units by 2040 (Planning Administration, 2018, p. 17), taking the needed urban space per person between 30 to 70 sqm. This comes up to 65,000 to 75,000 dunams⁵ for the needed population. For example, Haifa is 64,000 dunams, and Tel Aviv is 52,000.



Figure 4.1 - The Guide for Allocation of Urban Spaces cover. Source: (Planning Authority, 2023)

The guide does not address public uses with supralocal (national, regional) interests, such as hospitals, jails, airports, universities, cemeteries, etc. All these will be noted in the NOP and the DOP plans that have a larger scope of planning with less needed detail and allocate uses for land to be used by multiple areas. The infrastructure of sewage, drainage, garbage disposal, and such cannot be addressed as well since it differs greatly from location to location and the size of the population. Each plan will need to provide a sufficient solution for these based on the needs of the planned area and not by an estimation beforehand. A minimum of special allocations for assisted living and affordable rent will be given. However, nursing homes, housing for the disabled, student dormitories, and the like will not be discussed since most of these are privately owned and change from place to place.

⁵ Dunam is Israel equals 1,000 sqm.

The self-proclaimed principles of the guide are:

- Responding to public needs by classifying the allocated lots into three types; **Type A** an institution that needs a designated big lot, such as schools and community centers. These need their designated space but can host a multitude of other uses, like afternoon schools, public libraries, and more. Other **Type A** lots are buildings with a distinct relation to a plot, like stadiums, emergency facilities, and open public spaces. **Type B** uses require the allocation of smaller land or space in a built-up area, like local clinics, welfare offices, and such, with no direct relation to a certain plot. It is preferred to insert these uses into an existing building and not to allocate additional land if can be avoided. **Type C** uses are for several uses in one building, such as a cinema with adjacent restaurants or retail that will receive a designated plot or for uses that can be inserted into an already built structure.
- Solutions for intensive and multi-use utilization of the land for public purposes. This includes the reduction of land quotas for structures and denser, higher construction, mainly for big lots like schools. Avoid allocation of plots for only a single use. Even if the building is **Type A**, it is proposed to add another public use to the structure. The last solution is combining all the areas of the open spaces in the plan and treating them as a system of open spaces and not a random collection. This will reduce the excess allocation of space and neglect the unused excess areas.
- Distinguishing between built-up and new areas by adjusting the needed land quota inside and outside of built areas and new complexes. Mainly considering schools, which are big plot consumers, a significant land reduction is needed for schools in an already built environment, the solution for which was discussed earlier. Open public spaces in a built environment were also reduced, and the difference for this will be met in the allocation of more public open space in new complexes.
- Adjustments to the target population. Since the public uses and the needed ratio are a direct result of the demographic of the planned area, the need to determine the population correctly is of utter importance. Considering this, each plan will ascertain the demographic per the given area and not by “rule of thumb” or general averages. For this purpose, the guide states several options for scenarios for the extent of the plan (comprehensive, a big complex, etc.) or the urban fabric (built or new).

- Flexibility of use. Changing demographic in an urban environment is unavoidable and needs to be addressed from the conception of the plan, and this is done by assigning multiple uses to the same plot. This is meant to allow the local authorities to change the public use of certain buildings to serve its population better.

4.2. Calculations, assessments, and formulation of public urban uses

For the correct allocation of uses with the correct ratio and a minimum of excess land, there are several steps to be taken. First, calculate the expected population growth the plan will bring, whether as a new residential complex or an addition to an already built area. Then the demographic of the expected population surge. After determining the population size and predicted demographics, an assessment of the general needs of the population will be observed. The needs will be balanced by the existing inventory the general area has to offer and then formulated into a minimum threshold needed for establishing each of the urban use institutes.

For the calculation of the population, the number of residential units that will be built is multiplied by the allowed floor area ratio, which gives the capacity of the planned construction. These might change by the actual building rights of the area and mitigating circumstances allowed by the government. After the determination of the population size, demographics play the next key role. There is a need to know the average household to narrow the expected population further, and as discussed before, this varies greatly between the different sections of the population in Israel. On top of this, the average household fluctuates even more and there's a need to check if the expected population will be young couples starting their life, already formed families, or retirees since each of the populations will have different housing needs. This generally is fixed by mixing the sizes of the apartments.

Knowing the demographic of the expected population also grants the ability to know which uses will be expected. Young families will require more daycares, while the orthodox Jewish sector will need separation in schools and certain religious facilities. These variables are used to calculate the actual size of the population and not the capacity of the area. Eventually residential units multiplied by the average household yield the population size.

The guide shows how to approach the calculations by the size and type of the plan. For a comprehensive outline plan, it is safe to assume that the population demographics will be the same as the average of the city it will be in or near to, but further subdivisions will be needed. In a large residential complex in a built environment with an expected population growth of 20%-25%, the expectation is that a new population will move in, especially young families looking for a first home. The residential complex will change the demographics of the city, and the average of the city cannot be used. When building a neighborhood or small district and no way of establishing the expected demographics, there is a need to look at a “twin” plan—an existing place with as many similarities as possible to the planned intervention.

After the calculations are done for population size and demographics, the assessment of the demand begins. Some needs are mandatory by legislation, such as education from the age of 3 until the 12th grade. Some are just cultural or social, or service-oriented (the expectancy of services like clinics to be in a reasonable range from residential areas). For example, the demand for elementary school will be 100% because of the abovementioned mandatory education law, and the need for daycares will be only 50% since many families have alternative arrangements. As an example, the calculation of how many daycares classrooms will be needed (see Figure 4.2).⁶

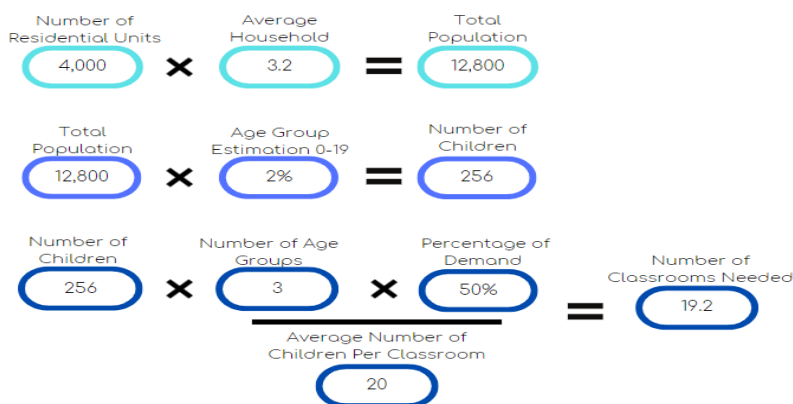


Figure 4.2 - Day Care Classroom Calculation Example. Source: (Planning Administration, 2018, p. 32)

⁶ The 2% in the Age Group Estimation relates to the age groups of the children using daycares, 3 months up to 6 years old. The estimated percentage of these is about 2% of the whole 0-19 population.

Following this step, the assertion of the existing inventory of public needs is done. By looking at the surrounding area and the existing public uses that it has to offer if there is an excess of some or a deficit in others. This requires cooperation with the local authorities and analysis to balance the demand and supply with existing adjacent areas. For example, an aging population in an area with a surplus of kindergartens or a densely built-up area with not enough public open space. A new plan can address and rectify these problems.

Knowing all the above measures will lead the planner to a general formulation of the needed territories for public urban use while considering the minimum threshold for each use (three full classrooms for one daycare, but not more than 5 in one). Continuing the earlier example (see Figure 4.2, Page 25), the calculation's outcome was 19 classrooms. The planner can choose to have 5 daycares with 3 classrooms plus 1 with 4 or 3 daycares with 4 classrooms, plus 1 with 3 classrooms. This decision is up to the planner and how he sees fit to assemble his plan on all its elements. This step summarizes all the previous quantitative steps into a more thorough plan. It also involves policy considerations, concepts for the plan, qualitative factors, and the wanted mix of the uses.

The last step of calculating and allocating uses requires consultation with the District Outline Plan or the Local Plan to make sure that the decided uses are according to the allowed outlines along with relevant planning guidelines like accessibility and proportions. All the above steps are the written "Terms" discussed in previous pages and are required by the Uniform Structure for Plans. This allows for quicker preparation and checking of plans.

The following standards tables will be written in the same format for each of the uses, including all or most of the list below:

- Target Population – characteristics of the population that will be using the building (age, sector, etc.)
- Participation Rate – the percentage of users relative to the whole population of the proposed plan.
- Threshold – complementary index to the participation rate that defines the minimum population needed for the realization of certain public use.
- Opening Hours – to help understand which uses can be integrated into the structure without interfering with each other.
- Area Quota – the needed area for the structure with two main options:

A. Allocation of an independent plot for the use (with additional uses within).

B. Allocation of space inside a building, commercial or residential.

- Fundamental Elements – general characteristics and emphasis if needed for the architectural planning of the structure.
- Planning Instructions – Accents to allocation aspects for the use, like relative location and accessibility.
- Mixes and Integrations – Guidelines for an efficient combination of several uses in one location.

4.3. Israeli urban use planning standards

4.3.1. Education

Educational institutes are the main land users and require their own plots with minimal mix uses allowed inside. Serving about a third of the population and being one of the main deciding things while people considering a place of residence. Several school types are evident in Israel, including state schools, religious-state, orthodox (with boy and girl segregation), and unique styles such as democratic, binational (bilingual), and anthroposophical⁷. Further separation exists by age groups (daycare, kindergarten, elementary and high school) and educational paths (regular, special education, farm/agriculture schools).

While planning educational institutes of any kind, the allowed number of children per classroom is 27 and 20 for orthodox institutes for boys. However, the Ministry of Education establishes the final number of students per classroom. The rate of participation for the mandatory education establishments for ages 3 to the 12th grade is 100%, and the rate for daycares (0-3) is 50% and cannot be higher than 60% for calculation purposes. The actual participation rate for mandatory education is less than 100% because of other solutions, such as schools outside the area that the parents choose.

Educational buildings are one of the biggest plot consumers of all public uses, but there is still a need for optimization of land use while maintaining adequate student service. The types of schools were defined by their location into three subclasses:

⁷ Philosophy based on the premise that the human intellect has the ability to contact spiritual worlds, formulated by Rudolf Steiner, he attempted to develop a faculty for spiritual perception independent of the senses. (Britannica 2023)

A. Rural/community settlement.

B. City - new residential complex.

C. City - built environment/city renewal.

Detailed land allocation per area is below (see Table 4.1)

Area of Planning	A	B	C
Elementary School	0.5 (0.3 for orthodox - boys)	0.4 (0.25 for orthodox - boys)	0.3 (0.2 for orthodox - boys)
High School	0.75 (0.5 for orthodox - boys)	0.5 (0.35 for orthodox - boys)	0.4 (0.3 for orthodox - boys)
Number of Floors	Up to 2	4-3	5-4
Terra Rate (in relation to net ratios)	60%	80%	100%

Table 4.1 - Land allocation for educational institutes per location area and institute type.

Source: (Planning Administration, 2018, p. 51)

Table 4.2 (see Page 29) shows the detailed allocation of land per level of school and its type. The separation to female and male students begins in institutes of elementary schools and not before because religious orthodox schools integrate kindergartens in them, and before the age six most of the orthodox children stay at home with the mothers.

Institution	Number of Classrooms	A – Allocation of an independent plot (Dunam)			B – Allocation of space inside a building (sqm)	Notes
		A - Rural/community settlement	B - City - new complex	C - City - built environment/city renewal		
Daycare	3 (the minimum threshold for a facility)		1.0		440	3-5 classrooms 147 sqm per room for the first three rooms, each additional is 125 sqm. Playground 60-135 sqm, or balcony 15 sqm per room
Daycare Special Education	4		1.5		750 + 750 playground	A playground of 75 sqm adjacent and accessible from and to each classroom. A total of 750 sqm for outside open space (classroom playgrounds, utility yard, etc.)
Kindergarten	1-3	0.5/1.0/1.5 (0.5 dunam per classroom			130 sqm per classroom + 200 sqm playground/balcony	Length to width ratio 1:1 up to 1:3 for the playground
	4	1.5 (ground floor - 3 classrooms, rest + yard/balcony on the floor above)				
	5-6	2.0 (ground floor - 4 classrooms, rest + yard/balcony on the floor above)				
	Primary School	1.0 -1.5 (as per the number of classrooms, 2-4. An adjacent plot to a high school plo)				
Kindergarten - Special Education	1-3	0.5/1.0/1.5 (0.5 dunam per classroom			130 sqm per classroom + 200 sqm playground/balcony	
	4	1.5 (ground floor - 3 classrooms, rest + yard/balcony on the floor above)				

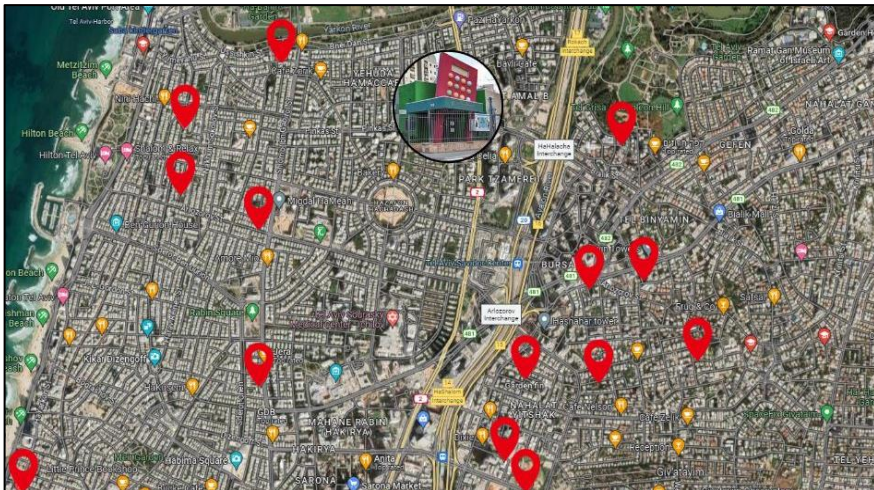
Table 4.2 – Daycare and kindergarten land allocation

Daycare

As can be seen from the Table 4.2 (see Page 29), special education facilities require a bigger allocation of space because of higher open space demands. Additionally, the average number of children per classroom changes from 20 for regular facilities to 6-8 for special education classrooms. The target population ages are 0-3 for regular daycare and 3 months until 3 years for special education, and in some instances, up to four. The recommended distance for placing daycares is no more than 750 m walking distance from residential areas (depending on the density). Opening hours for both institutions are the same, which means they can be integrated into the same built environment. Commercial; offices, retail, or residential buildings. Public; community centers as part of the offered services. As long as sufficient open space can be allocated.

Kindergarten

Both regular and special needs kindergartens require the same land allocation. In addition, special needs classrooms can be integrated into regular kindergartens to familiarize and incorporate the children with society. However, the average number of children per classroom differs greatly, with 20 for regular classrooms and 6-8 in special education. The recommended walking distance is 250-500 m from the residential areas. The same integration options as daycares apply to kindergartens as well. In addition to government facilitated institutes (see Map 4.1) there are many privet kindergartens.



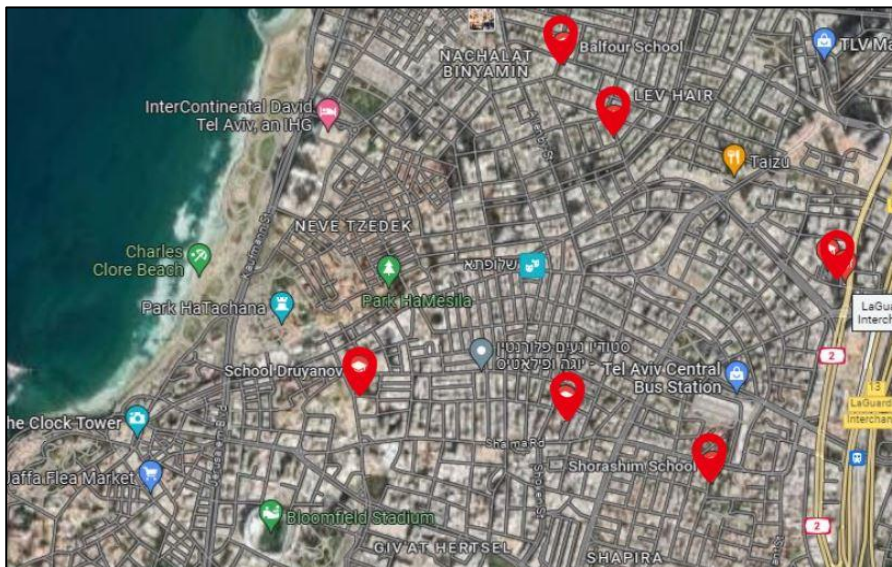
Map 4.1 - Government facilitated kindergartens. Source: (Google Maps, 2023)

Institution	Number of Classrooms	A – Allocation of an independent plot (Dunam)			B – Allocation of space inside a building (sqm)	Notes
		A - Rural/community settlement	B - City - new complex	C - City - built environment/city renewal		
Elementary School - State, State-Religious	12 Classrooms	6.0 (brute built area 1,900 sqm)	4.8 (brute built area 2,100 sqm)	3.6 (brute built area 2,340 sqm)	As a rule, for a school allocation of an independent plot will be given	500-1,000 sqm gymnasium and a playground with two basketball courts
	18 Classrooms	9.0 (brute built area 2,600 sqm)	7.2 (brute built area 2,900 sqm)	5.4 (brute built area 3,220 sqm)		
	24 classrooms	12.0 (brute built area 3,600 sqm)	9.6 (brute built area 4,050 sqm)	7.2 (brute built area 4,500 sqm)		
Elementary School - Orthodox - Boys (with kindergarten)	11 Classrooms	3.9 (brute built area 1,100 sqm)	3.5 (brute built area 1,240 sqm)	3.1 (brute built area 1,380 sqm)	As a rule, for a school allocation of an independent plot will be given	500 sqm gymnasium, and a playground with one basketball court. 200 sqm playground for the kindergarten,
	22 Classrooms	7.8 (brute built area 2,200 sqm)	7.0 (brute built area 2,470 sqm)	6.2 (brute built area 2,750 sqm)		
Elementary School - Orthodox - Girls	16 Classrooms	8.0 (brute built area 2,330 sqm)	6.4 (brute built area 2,620 sqm)	4.8 (brute built area 2,920 sqm)	As a rule, for a school allocation of an independent plot will be given	500-800 sqm gymnasium and a playground with two basketball courts
	24 Classrooms	12.0 (brute built area 3,560 sqm)	9.6 (brute built area 4,010 sqm)	7.2 (brute built area 4,450 sqm)		
Elementary School - Special Education	6 Classrooms	1.8 (brute built area 1,155 sqm)			As a rule, for a school allocation of an independent plot will be given	0.3 dunam per classroom
	10 Classrooms	3 (brute built area 1,940 sqm)				
High School - State, State-Religious	30 Classrooms	22.5 (brute built area 6,540 sqm)	15.0 (brute built area 7,400 sqm)	12.0 (brute built area 8,200 sqm)	As a rule, for a school allocation of an independent plot will be given	800-1,000 sqm gymnasium and a playground with two basketball courts
	36 Classrooms	27.0 (brute built area 7,770 sqm)	18.0 (brute built area 8,750 sqm)	14.4 (brute built area 9,720 sqm)		
	42 Classrooms	31.5 (brute built area 8,790 sqm)	21.0 (brute built area 9,900 sqm)	16.8 (brute built area 11,000 sqm)		
High School - Orthodox - Boys	8 Classrooms	4.0 (brute built area 1,040 sqm)	2.8 (brute built area 1,180 sqm)	2.4 (brute built area 1,300 sqm)	As a rule, for a school allocation of an independent plot will be given	500-800 sqm gymnasium and a playground with two basketball courts
	12 Classrooms	6.0 (brute built area 1,500 sqm)	4.2 (brute built area 1,700 sqm)	3.6 (brute built area 1,900 sqm)		
High School - Orthodox - Girls	12 Classrooms	9.0 (brute built area 2,240 sqm)	6.0 (brute built area 2,520 sqm)	4.8 (brute built area 2,800 sqm)	As a rule, for a school allocation of an independent plot will be given	800 sqm gymnasium and a playground
	24 Classrooms	18.0 (brute built area 4,330 sqm)	12.0 (brute built area 4,870 sqm)	9.6 (brute built area 5,410 sqm)		
High School - Special Education	12 Classrooms	4.0 (brute built area 1,840 sqm)			As a rule, for a school allocation of an independent plot will be given	0.3 dunam per classroom
	18 Classrooms	6.0 (brute built area 3,530 sqm)				

Table 4.3 – Elementary schools and high schools land allocation

Elementary School

Elementary schools are categorized into state, state-religious, Orthodox for boys, Orthodox for girls, and special education. The allocation of land to state-state-religious elementary schools and orthodox schools for girls is the same, along with the average number of students per class and the opening hours, with 0.5 per classroom for **Type A** plan, 0.4 per classroom for **Type B**, and 0.3 for **Type C**. In Tel Aviv, for example, elementary schools can be found more densely around the center, where families reside (see Map 4.2).



Map 4.2 - Map of elementary schools in the southern area of Tel Aviv. Source: (Google Maps, 2023)

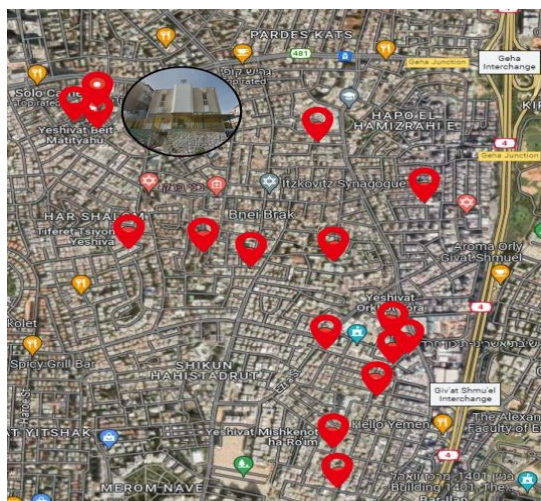


Figure 4.4 – Elementary school in Tel Aviv. Source: (Jackobson, 2017)



Figure 4.3 – Classroom. Source: (Israel Hayom, 2016)

For orthodox elementary schools for boys (see Figure 4.5), the allocation is much smaller, 0.35 for **Type A**, 0.31 for **Type B**, and 0.28 for **Type C** plan. The spread of Orthodox school for boys in the Bnei Brak area (see Map 4.3) is highly clustered because of the orthodox Jewish population concentration. The state elementary school's target population is from 6 to 12 years old, while the orthodox school for boys starts at 3 and ends at 14, incorporating a kindergarten in addition to the school. Special needs schools receive 0.3 dunams per classroom in any plan or area. The opening hours differ as well, with a difference of two hours for the orthodox school, 07:00 until 17:00 instead of 15:00 like the state school. The average number of students per classroom in state schools is 27, and only 20 for orthodox – boys (30 in kindergarten). The recommended walking distance is 500-750 m from the residential areas. Integration for state schools can be done with a community center with additional allocated land and communal use of the open spaces.



Map 4.3 – Orthodox elementary schools Bnei Brak.

Source: (Google Maps, 2023)

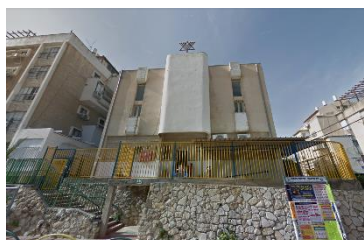


Figure 4.5 – Orthodox school for boys.

Source: (Google Maps, 2012)

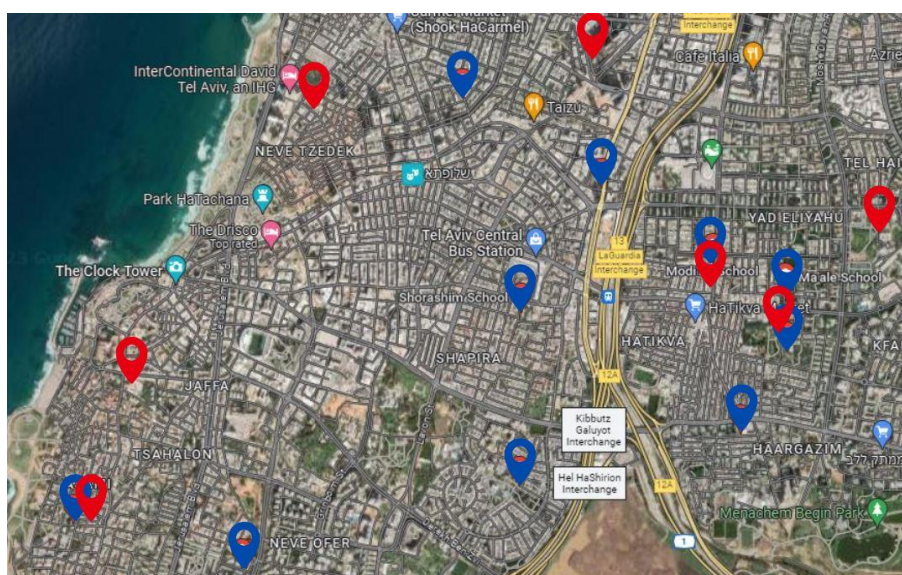


Figure 4.6 – Orthodox boys classroom.

Source: (Sindel, 2020)

High School

The same categorization applies to high schools as elementary schools. Along with the same categorization, the allocation of land for state high schools and orthodox high schools for girls is the same. **Type A** receives 0.75 dunams per classroom, **Type B** 0.5, and **Type C** 0.4. Orthodox schools for boys' land allocation are lower for high schools as well, with **Type A** plans receiving 0.5 dunams per classroom, **Type B** 0.35, and **Type C** 0.3. Special care high school classrooms receive 0.3 dunams like elementary schools, as well. For boys' orthodox high schools, the hours are even longer, from 07:00 to 19:00, while girls' and state finish at 16:00. No specific requirements for walking distance are mentioned for high schools. For orthodox boys' schools, it is recommended to integrate a religious library ("Torah Library") or other religious-affiliated integrations. The same modesty requirements for elementary school for girls apply to high schools as well. High schools can be found near elementary schools and as with elementary school are in the family residential areas and less in the center of the city (see Map 4.4).



Map 4.4 – High schools (in red) spread over elementary schools (blue). Source: (Google Maps, 2023)

Some instances of specialty schools are evident in Israel, such as the Agricultural school Mikveh Israel in Holon (see Figure 4.7, Map 4.5, Page 36). Democratic school in Yavne (see Figure 4.8, Map 4.5, Page 36) and Waldorf Anthroposophical school in Harduf (see Figure 4.9, Map 4.7, Page 36). Their land is allocated as per the list in Table 4.4. The list is not complete and only refers to public use allocation and not private education possibilities.

Institution	A – Allocation of an independent plot (Dunam)			B – Allocation of space inside a building (sqm)
	A - Rural/community settlement	B - City - new complex	C - City - built environment/city renewal	
Institution for the Gifted - one day a week	3-1.5 per institution			1,650
Marine School - water sports, seafaring, meteorology, etc.				Small: 700 Big: 1,050
Basic education center, supplementary studies - for at-risk students				800
Youth Employment Center - Therapeutic, educational and rehabilitation				700
Education Centers - Second chance for high school students on the verge of dropping out				1,550
Regional-Local Support Center - Special needs education 3-21	2.0-1.0 per institution			400
Teaching Staff Development Center				Small: 1,000, Medium: 1,250 Big: 1,500, Very Big: 1,750
Farm - Environment and agriculture studies	20.0			Not Relevant

Table 4.4 - Specialty Schools Land Allocation Standards



Map 4.5 – Agricultural school, area. Source: (Google Maps, 2023)



Figure 4.7 – Mikveh Israel agricultural school. Source: (Mikveh Israel Visitor Center, 2021)



Map 4.6 – Democratic school in Yavne, area. Source: (Google Maps, 2023)



Figure 4.8 – Democratic school in Yavne. Source: (Rosman, 2023)



Map 4.7 – Anthroposophical school in Harduf area. Source: (Google Maps, 2023)



Figure 4.9 – Anthroposophical in Harduf. Source: (Shani, 2018)

4.3.2. Health and welfare services

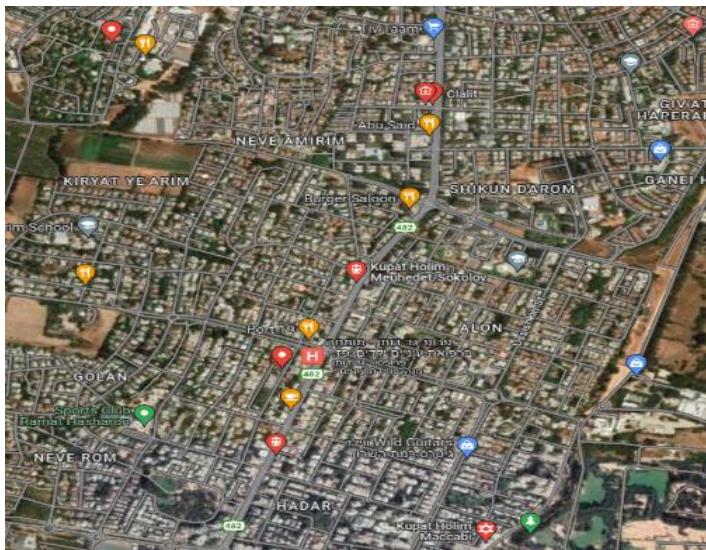
Institution	A – Allocation of an independent plot (Dunam)			B – Allocation of space inside a building (sqm)		
	Small	Medium	Big	Small	Medium	Big
Family Health Clinic	Recommended not to allocate an independent plot. Allocation of plot will be relevant if integrated with other uses. Minimal plot - 0.5 dunams			150	200	250
Local Clinic	Recommended not to allocate an independent plot. Allocation of plot will be relevant if integrated with other uses. Minimal plot - 0.5 dunams			200 - 300	300 - 500	500 - 1,000
Elderly Day Center - Physical Disabilities	1.0	1.5	2.0	On the ground floor with the allocations for built and open space		
Elderly Day Center - Mental Disabilities	0.75	1.0	1.2			
Welfare Department	Recommended not to allocate an independent plot. Allocation of plot will be relevant if integrated with other uses. Minimal plot - 0.5 dunams			320 for each branch outside of the designated space inside the local municipality. 250-500 in a rural area		
Preschool centers: Paramedical and developmental services	0.75 - 1.0			500 - 1,000		
Day Centers for Adults: Mental disabilities from the age of 21						
Autism Centers: For all age groups						
Services for the Blind	Recommended not to allocate an independent plot. A lot will be allocated if integration with other similar uses will be done.			100 - 300		
Afternoon school for special education: From the age of 21				100		
Day Center for Physically Disabled						
Out-of-home Housing				860 - 1,500 as per the number of residents		
Employment Center for the Disabled	Recommended not to allocate an independent plot. Integration with an existing structure for employment is preferred.			600 - 1,400		
Other Personal and Social Services				200 - 500		

Table 4.5 – Health and welfare land allocation

Health services in Israel are mandatory by legislation. Each citizen is eligible to receive equal and accessible treatment. This is done mainly by local health clinics, which the Ministry of Health regulates. The local services are categorized into two main branches, preventive and medicinal/therapeutic. Preventive health services are done by Family Health Clinics, which focus on pregnancy, babies, and children's treatments. Medicinal/therapeutic clinics branch out to:

- Local clinics that offer initial treatment for citizens (see Figure 4.10, Page 39)
- Specialty clinics, like laboratories and specialized medicine
- Hospitals
- Magen David Adom stations (Israeli ambulance and first aid service)

The updated guide changed the recommendation for health service placement from commercial to public lots or inside a public building because of several problems that were encountered. Commercial lots were developed after the population moved in and did not have the health services it needed. The space allocation in plans is not specific per service (as mentioned above) since the Ministry of Health and the local authority decide on which exact service will be placed in each of the saved spaces with varying distribution (see Map 4.8).



Map 4.8 – Hod Hasharon health local health clinics distribution. Source: (Google Maps, 2023)



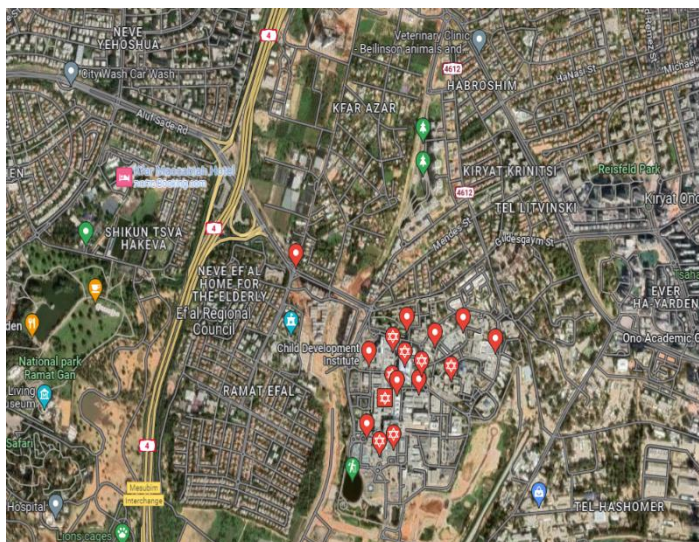
Figure 4.10 – Local clinic example. Source: (Shay, 2006)

Family clinics service ages 0 to 6. They have to include in the brute calculation of the built area for a designated safe space (bomb shelter) along with all the administrative and treatment rooms needed for the facility's everyday work. Local clinics have the same requirements for safe space as well. Both clinics can be integrated into each other and into daycares. The local clinic can also be mixed with other education facilities, facilities for the elderly, and such.

Suppose the clinics are placed into a commercial lot and not a public one. In that case, additional attention should be given to the expected population moving in and the actual date of the commercial lot built to avoid the possibility that no health services will be provided on time. The general allocation rule for local clinics is 0.1 sqm per person if the allocations in Table 4.5 (see Page 37) are not sufficient.

Welfare services in Israel are a vast array given by the government—treatment, rehabilitation, and assistance to families and individuals in distress and danger (permanent or temporary). Among the services are unemployment, social difficulties, poverty, old age, special needs, and more.

The country's preference is to integrate the special needs population, as much as possible, into the general population. This sometimes proves difficult, and building welfare facilities in neighborhoods brings resistance from the local population, especially if the service will be provided to a population that can be perceived as unsavory, like the rehabilitation of ex-cons or a facility for the mentally ill. This can be eased by integration with supralocal uses, such as a hospital (see Table 4.9, Page 49). Another difficulty in providing adequate welfare services is that land allocation for these facilities is done from a "bank" of land, and the local municipalities prefer to give the land to more "attractive" uses. The updated guide also allocates a bank of land, but only for welfare services, 0.05 sqm per person. The designation of which services will be given at the given space is still up to the local authority and the Ministry of Health.



*Map 4.9 – Tel Hashomer hospital area with elderly day care integration.
Source: (Google Maps, 2023)*

The solution for resistance from the local population is to gather several services under one roof. The guide categorizes them into six uses and allocation of space or a plot to each:

- Day-care communal services given to different populations – taken from the city-wide allocation bank dedicated to welfare services.
- Employment centers for people with disabilities – taken from the city-wide allocation bank dedicated to welfare services.
- Day-care facilities for the elderly population with disabilities – designated allocation of a plot or built space (see Figure 4.11, Page 41).
- Day-care facilities for children with disabilities - disabilities – designated allocation of a plot or built space.
- Administrative and therapeutic social services in municipalities (welfare departments) - disabilities – designated allocation of a plot or built space.
- Out-of-home housing and welfare - populations – taken from the city-wide allocation bank dedicated to welfare services.

The list is not final or complete and can be added upon by the changing needs of the local population.

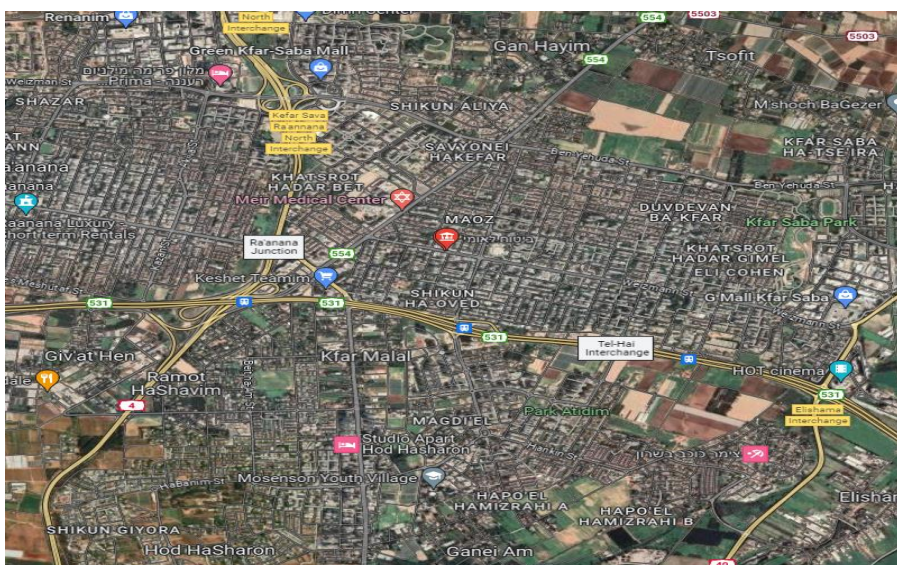


Figure 4.11 – Psychogeriatric day center.
Source: (Psychogeriatric Day Care Center, 2023)

Welfare departments serve about 2.5% of the population, and the city-wide mandatory allocation of space is 0.05 sqm per person along with the instructions in Table 4.5 (see Page 37). A branch for a Welfare Department is created for every 30,000 – 50,000 people and is dependent on the density of the population (see Map 4.10).

Recommended integrations for these facilities are between themselves. Mentally and physically disabled elderly facilities with a sufficient

allocation of open space, 500 – 1,150 sqm for the physically disabled and 200 – 250 sqm for the mentally disabled. Integration with other municipal and social services, community centers, and elderly day centers. It is not recommended to mix these services into residential lots or educational institutes. Daycares for children with autism and afternoon schools for the disabled are an extension of educational services discussed previously.



Map 4.10 – Kfar Saba area with a population of 110,456, with one local Social Security branch. Source: (Google Maps, 2023)

4.3.3. Community and cultural services

Institution	A – Allocation of an independent plot (Dunam)			B – Allocation of space inside a building (sqm)		
	Small	Medium	Big	Small	Medium	Big
Community Center	Recommended not to allocate an independent plot. Allocation of plot will be relevant if integrated with other uses.	No allocation or up to 3 dunams as per the local authority's policy	10	800 - 1,000 (in an elementary or high school plot)	1,000 - 2,500 (in a high school plot)	Not relevant
Community Branch	Recommended not to allocate an independent plot. Allocation of plot will be relevant if integrated with other uses.			300 - 500 (in an elementary school plot)		
Youth club/group	0.5 - 1.5 (0.5 if an adjacent open space is available, 1.5 if no open space is present or the use is restricted)			• Up to 300 users: 150 – 250 • 300 – 600 users: 400 • 600 – 1,000 users: 500 - 750 (with adequate open space for activities)		
Elderly Club	Recommended not to allocate an independent plot. Allocation of plot will be relevant if integrated with other uses.			250 - 300		
Auditorium	2.0 (200 - 500 seats)		3.0 (up to 1,000 seats and a professional stage)	400 (integrated with a school)	1,500 (integrated with a community center)	2,000 (city-wide)
Library	Recommended not to allocate an independent plot. Allocation of plot will be relevant if integrated with other uses.		2.0 (part of a city wide land allocation bank)	250 (integrated into a high school or other public/commercial lot)	800 (integrated into a high school or community center, or other public/commercial lot)	1,000 (integrated into a public or commercial lot)
Music School	Recommended not to allocate an independent plot. Allocation of plot will be relevant if integrated with other uses.	2.0 (part of a city-wide land allocation bank)	Not relevant	450 (integrated into a community center)	750 (integrated into a community center)	Not relevant

Table 4.6 – Community and cultural services land allocation

There is no legislative need to provide community or cultural services to the population. The local authority decides which facilities and services it wants and is willing to provide, considering the population's habits, local culture, and the financial ability of the authority considering the proposals in Table 4.6 (see page 42).

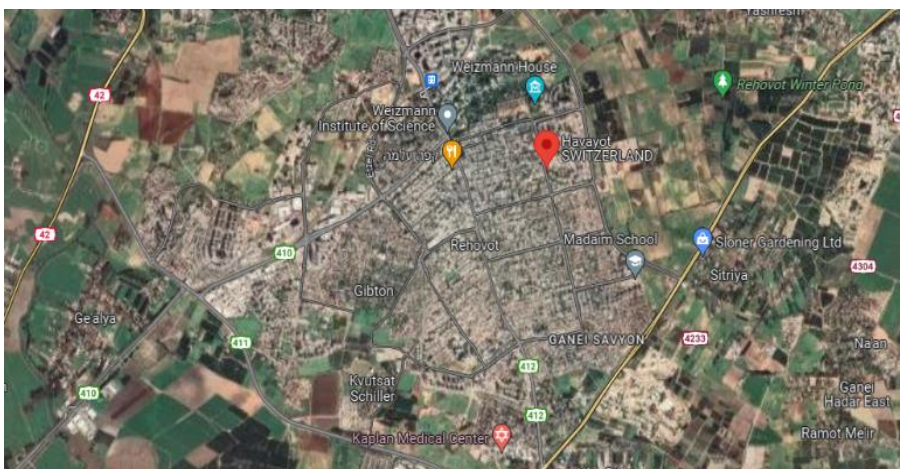
Community centers are the main feature of the services the authority can provide, and they can hold a wide array of features and amenities. The frequency and extent of the use of the community center are dependent on the size of the settlement it is in, a rural or city setting. The smaller the settlement is, the more use the community center will get since, in cities, there are many private cultural options, while in a rural setting, the community center might be the only entertainment option. Other community services that can be provided are youth clubs and groups (boy scouts and other Israel-specific options, like The Working and Learning Youth "הנוער העובד והלומד") and day centers for the elderly.

Big community centers will receive their own land plots and will be mixed with additional services such as swimming pools, playgrounds for sports, etc. In the example (see Figure 4.12) the community center is part of a new residential complex, servicing it and the surrounding areas (see Map 4.11, Page 44). Medium and small centers



Figure 4.12 – Rehovot, big community center. Source: (Geron, 2016)

will be integrated into elementary and high schools with communal use of the school playgrounds and sports facilities. In rural areas, small cities (population of 5,000 – 50,000), a big regional community center should be built, preferably adjacent to a school, and have sports facilities. In big cities (population of more than 50,000), a big community center with additional branches needs to exist. The big center will include a library, sports facilities, and sometimes pools, and the branches will be integrated into schools. Other scenarios of construction include several medium and small centers (present in Tel Aviv and Jerusalem) or full integration of all centers in schools if no land allocation is possible. If integration with schools is not possible, the allocation will be done as shown in Table 4.6 (see Page 42).



Map 4.11 – Rehovot area with the place marker of the community center in Figure 4.12. (Google Maps, 2023)

As previously stated, the participation rate of the community in the centers differs from cities to rural settlements, with 15-20% in cities and 40-50% in smaller settlements.

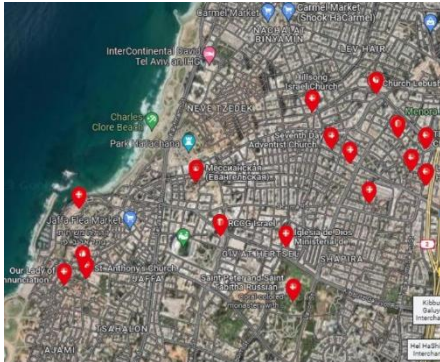
Youth groups are intended for ages 11 to 18, and the expected participation rate in the activities is 30-40%. The groups can be integrated into community centers and other community-oriented services, welfare, clinics, etc. The elderly clubs/centers space allocation is for 200 – 250 users and should be extended as needed. The participation rate of the age group is 15%. Most other uses can and should be integrated into schools or community centers to preserve and efficiently allocate land but still have a good rate of provided services.

4.3.4. Religion

There are four main religions in Israel: Jewish, Muslim, Christian, and Druze, with many more branches and denominations within each one. Religious buildings not only provide a place for prayer and spiritual needs but also, for many, a social-cultural system for the religious population. The responsibility for land allocation for religious needs for the Jewish population is done by the Ministry of Religion Services, and all other religions' land allocation is done by the Ministry of Interior. Because of this reason, the land allocation standards will be dealing with Jewish religious institutes.

Christian

Christian churches (see, Map 4.12, Figure 4.13) with every denomination having its own church (catholic, orthodox, protestant, gospel, etc.), are mostly located on private land owned by the church. Because of that, it is not possible to generalize and ration land for new church construction or additions to existing churches, and each case will need to be considered by itself.



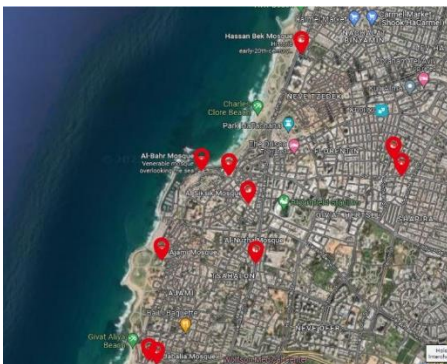
Map 4.12 – Tel Aviv – Jaffa area, church distribution. Source: (Google Maps, 2023)



Figure 4.13 – St. Peter's Church in Old Jaffa. Source: (Gobee Travel, 2020)

Muslim

Mosques, unlike churches, are built on public land (see, Map 4.13, Figure 4.14). The recommended land for a mosque is at least 2-3 dunams, with at least one mosque in every settlement. When allocating land, the proximity to other religious buildings and the acoustic aspect (muezzin) should be considered.



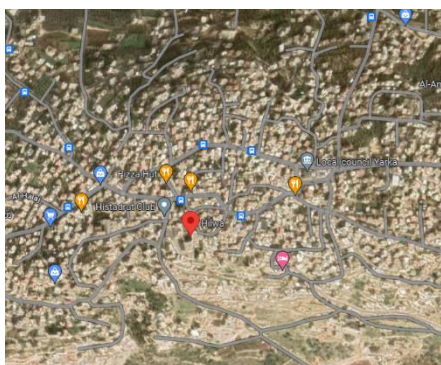
Map 4.13 – Tel Aviv - Jaffa area, mosque distribution. Source: (Google Maps, 2023)



Figure 4.14 – Hassan Bek Mosque in Tel Aviv. Source: (Sittan, 2012)

Druze

Khalwat – the Druze house of prayer (see Map 4.14, Figure 4.15), has a dedicated space for women and a separate space for men. Each room should be approximately 500 sqm, with a secondary prayer space of similar size, 2-3 study rooms, a kitchenette, restrooms, storage, etc. Additionally, the Druze need a structure for mourning customs, which will not be inside a cemetery. Furthermore, in places holy to the Druze, sufficient parking should be provided.



Map 4.14 – Yarka village. Source: (Google Maps, 2023)



Figure 4.15 – Khalwat in Yarka. Source: (Taicher, 2010)

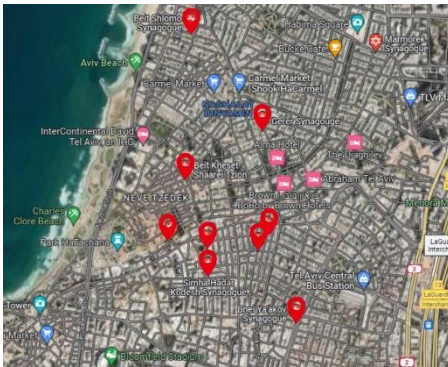
Jewish

Institution	A – Allocation of an independent plot (Dunam)			B – Allocation of space inside a building (sqm)		
	Small	Medium	Big	Small	Medium	Big
Synagog	0.5 (for 50% of the needed Synagogs and only in city renewal/new complex projects)		1.0 (regional or a cluster of Synagogs by deominations)	100 - 200 (+30 sqm of yard/balcony)	200 - 400 (+50 sqm yard/balcony)	more than 400 (+100 sqm yard/balcony)
Mikveh	0.5			65 (one immersion unit)	120 (two immersion units)	160 - 250 (3-4 immersion units respectively)

Table 4.7 – Jewish religious land allocation

The decision on the size of the Synagogue (see Table 4.7) is made by calculating the number of its potential users. The overall frequent visitor estimation is done by looking at the number of students in state-religious and orthodox schools to understand the approximate number of religious people in the area, then multiplying the number of the overall population by 0.49 and

multiplying it again by the approximate number found before. The land size is calculated by multiplying the number of frequent prayers by 1.1 sqm per person: up to 180 people, small structure, 200 sqm of built area, 180-360 people, medium structure, 200 – 400 sqm, over 360, big structure, 400 sqm, and over. Each Synagogue must have an adjacent open space (yard, balcony, or roof) for a succah (a necessity for one of the observed holidays). Synagogues should be placed up to 750 m within walking distance from residential areas (see Map 4.15, Figure 4.16).



Map 4.15 – Tel Aviv – Jaffa area, synagogue distribution. Source: (Google Maps, 2023)



Figure 4.16 – The “Big” Synagogue in Tel Aviv. Source: (Tager, 2013)

Mikveh (see Figure 4.17, Page 48) is a ritualistic water immersion for cleansing and purification, more frequently used by women, and operational from sunset for 4-6 hours, seven days a week. A “unit” per the shown calculation of land allocation in Table 4.7 – **Jewish religious land allocation** (see Page 46) is one immersion pool (see Figure 4.18, Page 48), 4 bathtubs, and one shower. Each structure must include a rainwater collection on its roof. The size of the Mikveh is calculated by the number of units it has to include, the total number of the target population multiplied by the participation rate divided by 23. The rate of participation in the orthodox and religious population is 0.07, and the rate of participation for the rest of the population is 0.07 multiplied by the number of the population in the area. The number 23 is because each unit serves, on average, 23 women a night. If a Mikveh for men is needed, it will be added to a Synagogue and not an independent plot. The recommended walking distance is up to 750 m from residential areas.



Figure 4.17 – Mikveh building. Source: (Religious Rishon LeTziyon , 2019)



Figure 4.18 – Immersion Pool. Source: (Cohen, 2021)

4.3.5. Sports facilities

There is a general understanding that sports activities are good and necessary for the general health of the population. In addition, sports facilities provide social aspects, such as a meeting place and communal unity, for example, winning a game in the local leagues. Sports facilities in Israel are provided by the Ministry of Sports and Culture, the local authorities, and private individuals. A wide variety of casual and professional sports facilities are provided, with the professional/competitive facilities having a rigid needed size for their land, and the casual is more malleable.

The classification of land allocation is done by separating the facilities by the abovementioned and if the facility can be part of other services or needs a stand-alone plot (see Table 4.8, Page 49).

Institution	A – Allocation of an independent plot (Dunam)			B – Allocation of space inside a building (sqm)		
	Small	Medium	Big	Small	Medium	Big
Soccer Stadium	12.0	-	20.0	Not Relevant		
Soccer Field	10.0 - 12.0			Not Relevant		
Athletics Stadium	20.0			Not Relevant		
Tennis Court	2.8 (4 courts alongside each other)			at least two courts 18.5X36.5 m		
Gymnasium	Recommended not to allocate an independent plot			550 (will be integrated into all the schools)	1,000 (Integrated into large elementary school and high schools)	1,450 (integrated into high schools or a city Sport Center)
Sports Hall	3.0 - 4.0			3,000 (as part of a city-wide land allocation or a large high school)		
Arena	10.0 - 12.0 (city-wide allocation bank in major cities)			10,000		
Swimming Pool	2.0 - 6.0 (6.0 for a community pool with lawns)			1,000		
Sports fields and athletics facilities for public/community use	Recommended not to allocate an independent plot. Will be integrated into education or community institution. In smaller settlements with no education institutes at least one plot should be given to a combined plot			• Combined plot (volleyball and two basketball courts, 32X42 m – 1,344 (2,000 with margins) • Basketball court – 600 (700 with margins) • Long-jump Pit (with running track) – 140 (250 with margins) • High Jump – 350 (500 with margins) • Running Track (60 m for elementary school, 100 m for high school) – 375 – 600 • Mini pitch (lawn and goal posts 15X30 m) – 500 • Pétanque (compressed sand surface 12X12 m) – 300 • Rollerblading Ring – 800 • Skate Park (skating ring 45X45m) – 2,000 • Mini football (field 45X25 m) – 1,200 • Soccer Field – Practice (32X42 m) – 1,500		

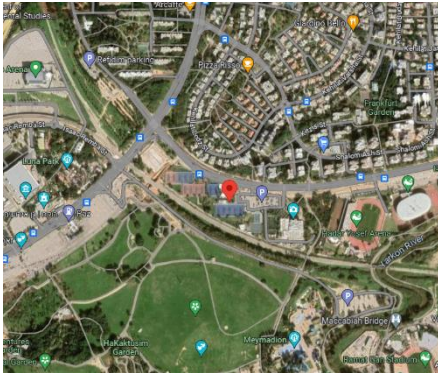
Table 4.8 – Sports facilities land allocation

Big, formal/competitive facilities, such as stadiums, will have land allocation and will be city-wide facilities. Medium, community, or local use gymnasiums, swimming pools, etc., will preferably be mixed with other public uses, communal or educational. If applicable can be placed in public open spaces, like soccer fields and skate parks. Small facilities, like rollerblading rings, will be placed in an open public space as well.

A small stadium threshold is a population of 50,000 – 150,000 people. The stadium will be with 2,000 to 5,000 seats, along with 500 sqm for administration and locker rooms/showers. The threshold for a big stadium is a population higher than 150,000 people, with 15,000 seats and 1,500 sqm for administration and locker rooms/showers. The preferred location for this type of facility is within a reasonable distance from residential areas, industrial zones, or areas with mostly office space. This way, adequate parking can be provided without the need to allocate additional space only for parking use. No matter the size of the stadium, additional uses can be added under the tribunes, gym, dancing studio, etc. Retail, restaurants, and other commercial uses can be added as well.

- A soccer field for competitive use will be the standard size of 70X105 for a big field and 45X90 for a small field. In addition, a practice field 25X45 will be added, along with up to 2,000 seats and 300 sqm for showers.
- Tennis courts standard size is 18.5X36.5. It is recommended to have at least two courts. The preferable amount is four. A tennis center will have eight courts or more (see Figure 4.20, Map 4.17, Page 51).
- Gymnasiums of various sizes will be placed inside every school, and at least one big gymnasium will be constructed in every settlement (see Figure 4.19, Map 4.16, Page 51). A small gymnasium will have a basketball court, showers, and a stage. A medium, basketball courts, showers, stage, and 200 seats. The big gymnasium will have to include a basketball court with margins, a judges' stand, showers, and 500 seats. A sports hall will house a volleyball court, three basketball courts, showers, and 3,000 seats. Small and medium gymnasiums will be integrated into elementary and high schools. In small settlements without educational institutes, land will be allocated to a gymnasium.
- Swimming pool size is 16X25 (400 sqm), with an infant pool of 100 sqm. As per **type B** land allocation, an indoor pool will receive 1,000 sqm. Swimming pools will include bathrooms, showers, administration office, and a food court, and if possible, a lawn.

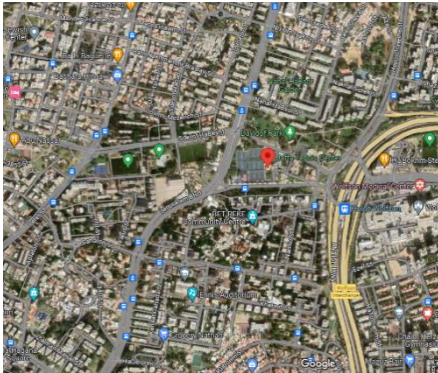
If a communal facility is integrated into an educational institute, it has to provide a separate entrance so it can be accessible after school hours. All public/community uses that can be placed in open public spaces should be placed there.



Map 4.16 - Hadar Yosef neighborhood, Tel Aviv. Source: (Google Maps, 2023)



Figure 4.19 – Hadar Yosef Gymnasium. Source: (Hadar Yosef, 2023)



Map 4.17 – Jaffa, Yaffo D neighborhood. Source: (Google Maps, 2023)



Figure 4.20 – Jaffa Tennis Center. Source: (Tennis, 2023)

4.3.6. Emergency and rescue services

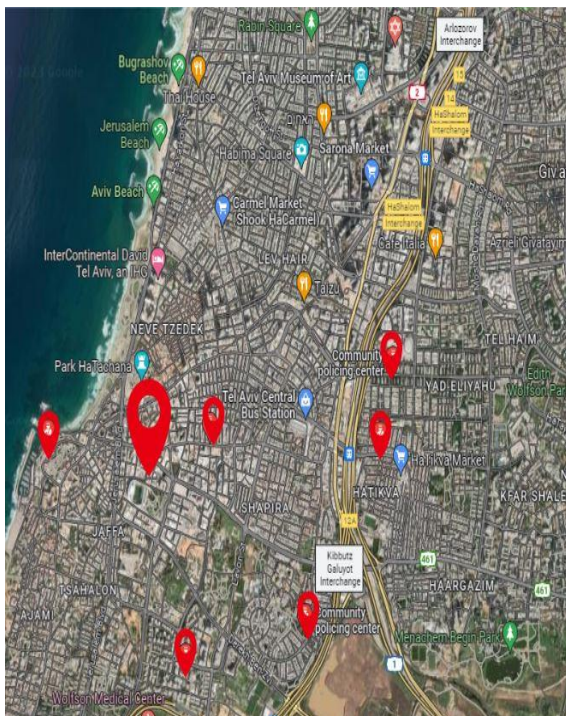
Israel has three main providers, not including private suppliers. Police provide public order and physical and property protection by discovering, preventing, and solving offenses. These are possible by the spread of stations and branches in the country. The spread depends on the density of the population, crime rate, and more. Fire and Rescue provides firefighting and rescue services. The spread of the stations depends on the population density and the size of the district. Magen David Adom (MDA, מ"ד in Hebrew), public-statutory first aid service, along with additional medical services provided to IDF (Israel Defense Force) in war settings and blood banks. Branches vary by size depending on the characteristics of the location. The emergency services are as good as their response time from the initial call. The spread should be near residential areas but in such a manner as not to be a nuisance and be close enough to major traffic axis. It is also recommended for all three be next to each other, if possible (see Table 4.10)

Institution	A – Allocation of an independent plot (Dunam)			B – Allocation of space inside a building (sqm)		
	Small	Medium	Big	Small	Medium	Big
Community Police Center	Recommended not to allocate an independent plot			100		
Police Station	0.5 - 2.0	3.0	6.0	Not Relevant		
Magen David Adom Station	1.0	2.0	2.5	200 + yard	600 + yard	Not Relevant
Fire Station	1.5	3.0	5.0	Not Relevant		

Table 4.10 – Emergency and rescue services land allocation

Police Services

A community police center threshold is a population size of 5,000 – 15,000 people, and the built area is 100 sqm. For a small station, the population should be 15,000 to 40,000 people, with a built area of 500/ 1,000-2,000. The medium station requires a population of 40,000 – 100,000 people, and its built area is 2,000 – 4,500 sqm. The big station threshold is a population of 100,000 to 300,000 people. The built area of the big station will be 4,500 to 6,500 sqm. All stations, except the community branch, require separate parking for police and citizen vehicles. In cities several community stations (see Figure 4.21, Page 53) can be found (see Map 4.18, Page 53) alongside with the central police branch (see Figure 4.22, Page 53).



*Map 4.18 – Tel Aviv – Jaffa police stations distribution.
Source: (Google Maps, 2023)*

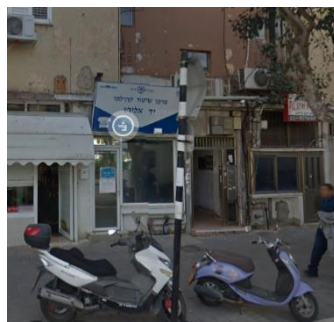


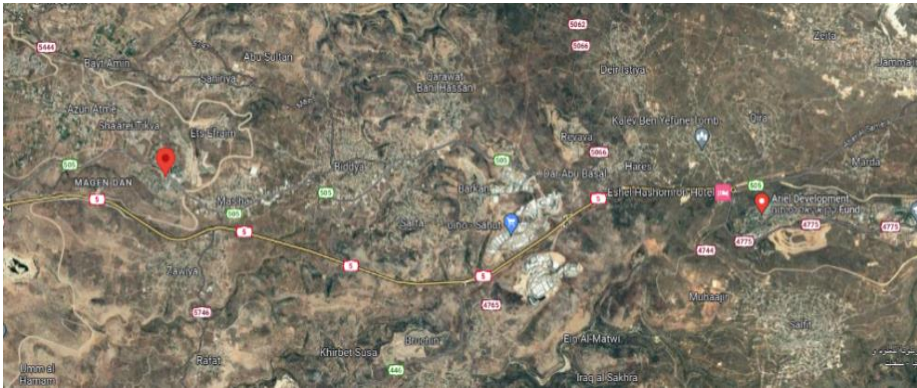
Figure 4.21 – Community police station. Source: (Google Maps, 2015)



Figure 4.22 – Tel Aviv police Central command. Source: (Denya, 2023)

Magen David Adom (MDA, מ"דא)

The population threshold for a small station is 15,000 people, and it should be 200 sqm of built area. The medium station threshold is 15,000 – 50,000 people, and the built environment is 600 sqm. The big station requires a population of above 50,000 people. The built area of the station will be 700, and parking for 50 ambulances. Each of the stations must include an open space/parking big enough to maneuver and turn. In rural areas an emergency station that serves several surrounding settlements can be found (see Map 4.19, Page 54).



Map 4.19 - Ariel and the area with one local Magen David Adom branch. Source: (Google Maps, 2023)

Fire Station

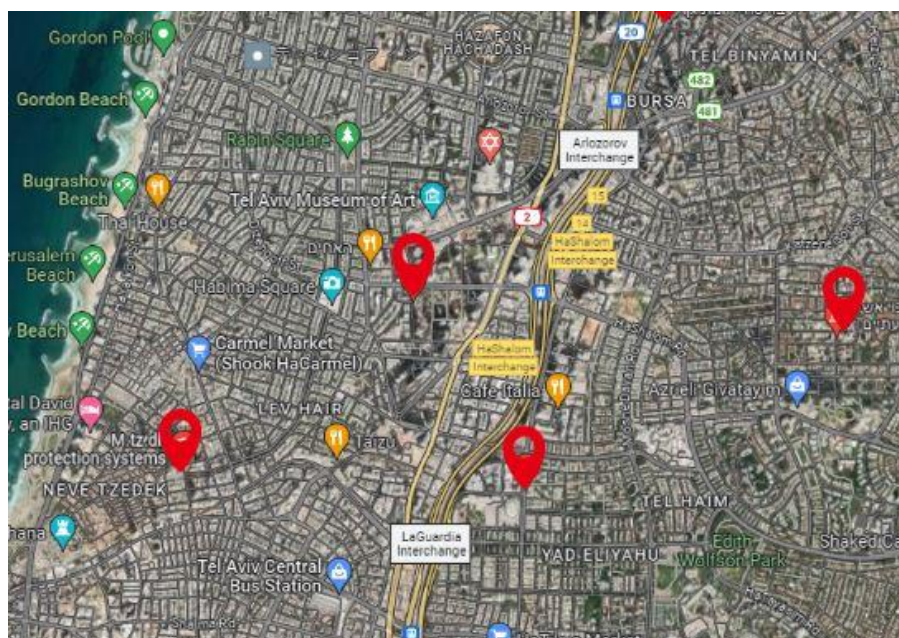
The threshold for a small fire station is a population of 30,000 people. The built area of the station will be 180 sqm with an additional 230 sqm for a shed for the vehicles. The medium station needs a population of 30,000 – 60,000 people, its built area of 320 sqm, and a shed of 370 sqm. The big station (see Figure 4.23 and Figure 4.24) is for a population of over 60,000, and its built area needs to be 340 with a vehicle shed of 640 sqm. As with the MDA services, the parking space needs to be wide enough for a fire truck to be able to maneuver and turn. Several big fire stations can be observed in densely populated areas (see Map 4.20, Page 55).



Figure 4.23 – Fire station in Jaffa. Source: (Gibson, 2022 11)



Figure 4.24 – Fire station in Ramat Gan. Source: (Frideman, 2019)



Map 4.20 – Fire station distribution Tel Aviv greater area. Source: (Google Maps, 2023)

4.3.7. City-wide services

City-wide services, sometimes extending to regional services, are a broad range of services differing by size, location, and the targeted population. Some of the services include municipality halls, courthouses, stadiums, etc. The number of the given services varies due to the size of the settlement, the population's preferences, and the local authority's financial ability to provide those.

There are three major groups of city-wide land allocation:

1. **Sports** – Soccer/athletics stadium, standardized/professional soccer fields, which need a significant population to justify a land allocation.
2. **Emergency** – allocation of land in each settlement.
3. **Other City-Wide Services** – there is no agreed agenda for the needed city-wide allocation of land. Each facility is considered specifically.

Because each local authority decides on the city-wide services, it would like to provide a land allocation bank created for the total optional use of each authority. The bank is calculated at 0.8 sqm per person (10,000 people will get 80 dunams, 80,000 sqm). The bank does not include emergency, sports, and

open spaces, which get their own land allocation as previously discussed, and will be discussed in the next chapter. This bank allows each authority to choose the services from a list of possibilities and opens a “competition” between the different services and oftentimes leaves the less desirable services neglected (some welfare services, as mentioned in 4.3.2). To prevent this, the allocated 0.8 sqm is divided into 0.75 for city-wide services, and the remaining 0.05 sqm is going exclusively to welfare services.

Another consideration that has to be taken into account is the size of the proposed plan and how the allocation of city-wide land will play a part in it so as to avoid the option that only extensive plans will be obligated to set aside the areas. It was decided to split the different projects into residential units it will provide. A city-wide project will need to provide a bank with the same parameters as mentioned above. More than 5,000 units or 10% of the total of the city or more (the smaller option) will need to allocate 0.3 sqm per person within the borders of the plan and at least 1.0 dunams for welfare. A plan with 500 – 5,000 residential units will provide 0.3 sqm per person with a minimum of a 0.5 dunam lot. A plan with less than 500 residential units is not obliged to provide any city-wide allocation. The last two plans do not need to provide land allocated specifically for welfare.

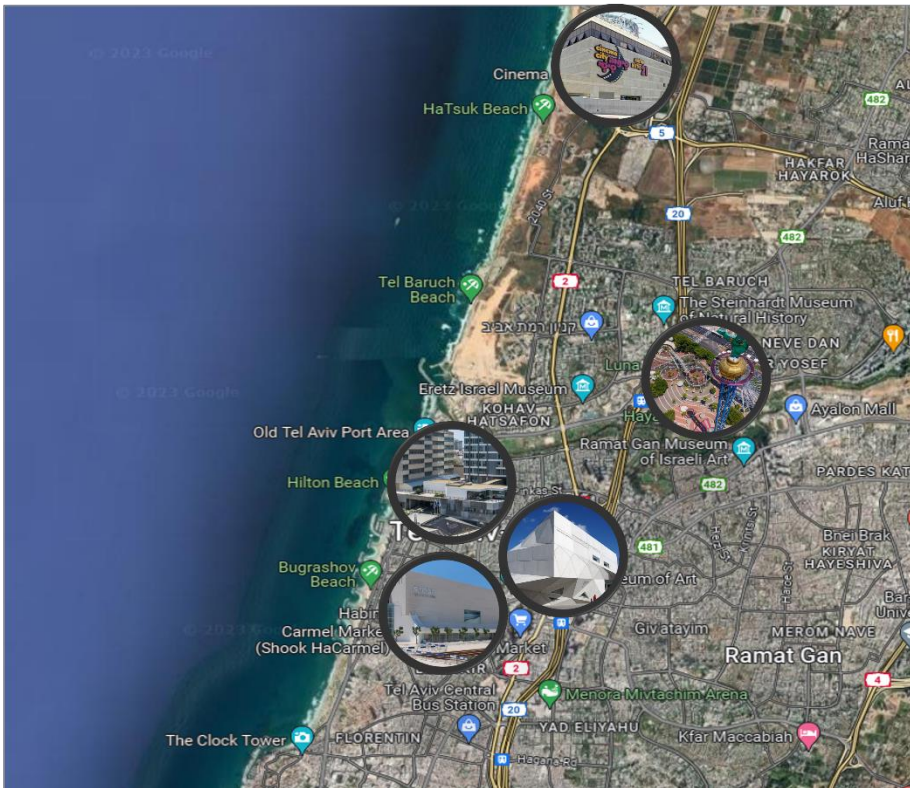
Examples of City-Wide Public Institutes with a minimum lot of 1.5 dunams:

- Municipality Hall with branches as needed – per the size of the settlement
- Cinema Theater (for settlement of 75,000 people and up) (see Figure 4.25, Page 58)
- Museum (see Figure 4.26, Page 58)
- Courthouses, Rabbinical Courts⁸, and other religious courts (see Figure 4.27, Page 58)
- Theater – from 500 seats and up (see Figure 4.28, Page 58)
- Music Center
- Conservatorium
- Central Synagogue
- Central Library
- Center for the Elderly
- Storage and Municipal Logistic Facilities

⁸ The Rabbinical Courts are part of the Israeli judiciary and mainly handle issues relating to divorce, property, visitation rights of children, wills, and inheritances, approval of Jewish status and conversion” gov.il

- Emergency in wartime facilities for evacuation, relief, and fallen gathering (can be placed in basements of public buildings)
- Ministry offices in accordance with the size of the settlement
- Other public institutes (see Figure 4.29, Page 58)

The recommended placement of the above is in the center of the settlement, easily accessible not only by vehicles but also by foot and bicycle see (Map 4.21).



Map 4.21 – Map of the greater Tel Aviv area with city-wide services. Source: (Google Maps, 2023)



Figure 4.25 – A big cinema complex. Source: (Matzafi, 2016)



Figure 4.26 - Tel Aviv Museum. Source: (Project-TLV, 2023)



Figure 4.27 – Tel Aviv court. Source: (Lee Marshal Real Estate, 2023)



Figure 4.28 – Habima national theater. Source: (Wikipedia, 2011)



Figure 4.29 – Amusement Park in Tel Aviv. Source: (Time Out, 2022)

4.3.8. Public open space

Open public space is considered as the space near and between buildings, green spaces, sidewalks, pedestrian streets, etc. The space is calculated as a whole and not by its parts, so it will be possible to plan for the future as much as possible by placing the space strategically and avoiding excess allocation in land-deficient environments. Because of this, the open public space was divided into three ranges (see Table 4.11):

1. **House threshold** – to allow for each person an accessible open space for social interaction, no matter their age or a disability that might hinder their mobility.
2. **Urban** – open space that provides a solution to several areas/neighborhoods (pedestrian streets, boulevards, large parks, etc.).
3. **City-Wide** – leisure spaces for a wide range of the population (beaches, city parks, forests, etc.). These are based, as much as possible, on an existing range of natural options.

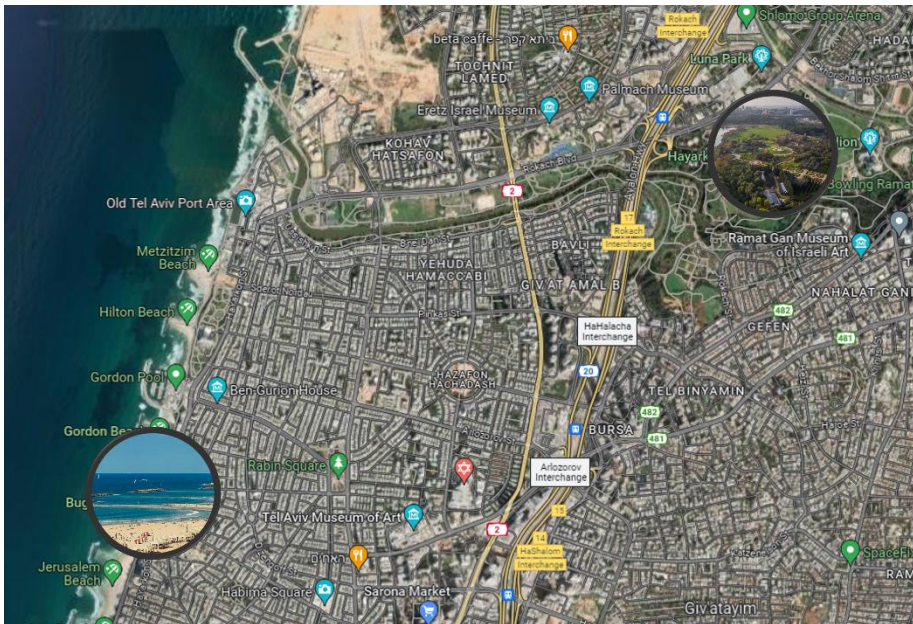
At least 80% of the open space will be green spaces (natural or artificial).

		New Complex	Built Environment
House Threshold	Area Quota	5 sqm per person	3 - 5 sqm (can be less than if can't be provided within the borders of the plan)
	Green/Rigid Infrastructure	A minimum of 80% green open space	100% of the existing green spaces
	Accessibility Range	In the borders of the plan	Prioritizing the plan borders if possible
Urban	Area Quota	2 sqm (if no additional allocation is needed from the previous part)	2 sqm (can be less if can't be provided within the borders of the plan)
	Green/Rigid Infrastructure	A minimum of 80% green open space	Plan adjacent
	Accessibility Range	In the borders of the plan	Prioritizing the plan borders if possible
City-Wide (new and renewed)	Area Quota	Minimum of 3 sqm per person and until reaching the full 10 sqm per person	
	Green/Rigid Infrastructure	100%	
	Accessibility Range	In the borders of the local authority	

Table 4.11 – Open space land allocation

The minimal open space per person will be 10 sqm, the allocation is rigid, but the planning within the allocated space is flexible and dependent on the planner's preferences. Suppose no minimal allocation is possible due to the nature of the project (city renewal and built environment). In that case, the planner will condense the needed open space for the expected population and place it outside of the plan's border but within the "accessible range." The accessible range is defined by the distance and time of the walk/travel it takes to get to the open space.

If the solution is given outside the planned border, the land will be reduced from the city-wide land allocation. The accessibility range for house threshold areas is up to 7 minutes walking distance, the Arial distance of 500-600 m. Urban accessibility area will be about a 15–20-minute walk or 10 minutes by bicycle or public transport. In a city-wide area, an adjacent to the locality forest or beach can be included in the calculations for the minimum open space needed if it is accessible by foot, vehicle, bicycle, or public transport.



Map 4.22 – Greater Tel Aviv area. Source: (Google Maps, 2023)



Figure 4.30 – Bograshov beach. Source: (Shutterstock, 2021)



Figure 4.31 – Park HaYarkon. Source: (Tager, 2013)

4.3.9. Private use allocation standards

All the above parts only refer to public uses of space and land. These uses are countrywide and do not change from district to district or from city to city. Unlike the private use standards, which each municipality can choose for itself, along with the design preference of the structures, these uses are written in the Spatial Guidelines and differ slightly from each other by the demographic and land availability of the locality. For example, in Tel Aviv, with a population density of 7,664.5 (Knoema, 2012), the minimum brute area for an apartment is 35 sqm. In Haifa, with a population density significantly lower 1,084.3, the minimal apartment size is 54 sqm (see Figure 4.32, Figure 4.33) The differences between the cities in Israel bring further changes to the private uses along with the design preferences of the local authorities, with consideration to the existing environment of each city.

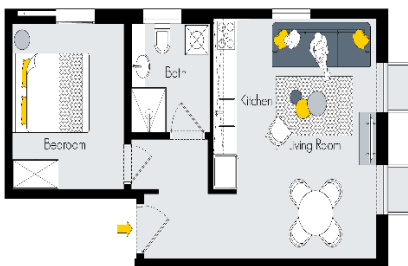


Figure 4.32 - 2-bedroom apartment in Tel Aviv. Source: (Ashdar, 2023)



Figure 4.33 – 2-bedroom apartment in Haifa. Source: (Prashkovski, 2023)

5. Conclusions

The research aimed to find if the state of Israel uses planning standards in its urban planning practices and, if so, which standards they utilize. The result of the study indicates that, indeed, Israel has planning standards for urban uses, and they cover most of the needed uses, from education, communal, and emergency to open space and how it should be calculated in a given environment. The planning system structure in Israel is a top-down approach dictated by the government, with country, district, and local outline plans, each respectfully influencing the other. The official building standards guidelines are utilized for public uses only, mainly for regional and local plans. Private use standards are decided and implemented by each local authority and can be vastly different from city to city and in more rural regions, and highly dependent on the demographics and density of the area.

The study intended to get an overview of all the planning standards, how they are allocating land for each use, and which standards are unique for Israel because of the distinctive population that lives in the country. The allocations in the Israeli standards are done by, firstly, dividing the use into two types of land allocation, an independent lot, or a space inside an already built structure. Secondly, most of the land allocation size is determined by an already calculated population threshold needed for the use and not sqm per person, and further classified into small, medium, and big plots or structures to determine the allocated land size. All sizes and suggestions are for the minimum needed space for each use. As for the unique uses and standards, the obvious ones are the religious buildings, but educational institutes in Israel have the most distinct features. With the need for the segregation of girls and boys in orthodox Jewish education, each has its own allocated land for the structure, along with the additional land allocation for regular educational institutions for the rest of the population. This means that elementary schools and high schools for each sector will receive their own plot with specific instructions on how the land should be utilized.

The research was based on literature and official government publications review, which can mainly be found in Hebrew without a translated version. Which made the process time-consuming and challenging since everything had to be translated before it could be applied. The intended goals of the dissertation were to study the Israeli standards and system and bridge the language gap by translating it and bringing the information to the West to help promote collaboration between planners, further research, and comparison.

Additionally, this dissertation can help identify gaps in the Israeli planning standards or areas for improvement by easier comparison to other planning standards, or comparatively countries with similarities to Israel can borrow standards that they might be lacking.

As an architect, the dissertation helped me to understand the hierarchy of urban planning in Israel, how planning standards are applied, and acknowledge the context of the higher level of planning within the architectural daily work. It taught me the importance of understanding local context and demographics, and how planning standards for urban uses can help promote the correct allocation of all the needs of the local population.

For future research, a case study of an existing area can be done, looking at the existing environment, demographics, and the public uses the area has and comparing it to the governmental official public use standards. If and how they differ from the ideal land allocation and the uses on the ground. Interviews with city planners can be added to understand the practical impact and implementation of the standards. An additional comparison can be made with the differences in private-use land allocation between the main cities to find the reason for the difference. Or a comparison with other urban standards can be done to identify gaps that can be filled by other countries expertise. Furthermore, some of the standards are based on legislation, and the link between the allocation of the land for private and public uses can be explored as well.

To sum up, the Israeli urban use standards are a comprehensive guide for land allocation for almost all public needs in an area, with solutions both for built-up and new areas. However, each local authority decides on its own unique private use allocation as per its demographic and available free land and they may vary greatly preventing a unified approach to allocation of private uses. Further research into private-use land allocation should be done in order to understand the full picture of plan-making in Israel.

6. References

- Admin, 2020. *Planning Tank*. [Online]
Available at: <https://planningtank.com/planning-theory/rational-planning-model>
[Accessed 17 02 2023].
- Ashdar, 2023. *Recanati Residence Tel Aviv*. [Plan Online]
Available at: <https://www.ashdar.co.il/project/recanati-residence/>
[Accessed 26 04 2023].
- Ashdod Net, 2011. *The Sportek in Ashdod will be built near Nahal Lakish*. [Photograph Online]
Available at:
<https://ashdodnet.com/%D7%97%D7%93%D7%A9%D7%95%D7%AA-%D7%90%D7%A9%D7%93%D7%95%D7%93/40362>
[Accessed 05 05 2023].
- Batey, P., 2018. The History of Planning Methodology. In: C. Hein, ed. *The Routledge Handbook of Planning History*. New York: Routledge, pp. 46-58.
- Brennan, F. R., 2022. *File:Israel's political system.svg*. [Diagram Online]
Available at: https://en.wikipedia.org/wiki/File:Israel's_political_system.svg
[Accessed 05 05 2023].
- Britannica, 2023. *Garden City*. [Online]
Available at: <https://www.britannica.com/topic/garden-city-urban-planning>
[Accessed 01 03 2023].
- Britannica, 2023. *Gaza Strip territory, Middle East*. [Online]
Available at: <https://www.britannica.com/place/Gaza-Strip>
[Accessed 01 03 2023].
- Central Bureau of Statistics, 2022. *Israel in Numbers, Selected Statistics Data from 2022*. [Online]
Available at:
https://www.cbs.gov.il/he/publications/DocLib/isr_in_n/isr_in_n22h.PDF
[Accessed 01 03 2023].
- CIA, 2023. *West Bank*. [Online]
Available at: <https://www.cia.gov/the-world-factbook/countries/west-bank/>
[Accessed 01 03 2023].
- City Population, 2023. *Israel, State of Israel*. [Online]
Available at: <http://www.citypopulation.de/en/israel/cities/>
[Accessed 01 03 2023].

Cohen, D., 2021. *Did you know? The virtue of the Mikveh for men*. [Photograph Online]
Available at: <https://www.tv2000.co.il/article/25866>
[Accessed 05 05 2023].

Denya, 2023. *Tel Aviv Police Centra Command*. [Photograph Online]
Available at: <https://www.denya-group.com/en/tel-aviv-police-central-command/>
[Accessed 05 05 2023].

English Heritage , 2023. *Sir Patrick Abercrombie*. [Photograph Online]
Available at: <https://www.english-heritage.org.uk/visit/blue-plaques/sir-patrick-abercrombie/>
[Accessed 05 05 2023].

ESRA, 2009. *Sir Petrick Geddes Plan for Tel Aviv*. [Map Online]
Available at: <https://magazine.esra.org.il/posts/entry/sir-patrick-geddes.html>
[Accessed 06 04 2023].

Frideman, Y., 2019. *Ramat Gan area fire station*. [Photograph Online]
Available at:
https://www.google.com/maps/place/Jaffa+fire+station/@32.0494646,34.7628218,3a,75y,90t/data=!3m8!1e2!3m6!1sAF1QipPnejo5Po_gVvngKpCckVXqqF6Eq_pfn3Kgh8CA!2e10!3e12!6shhttps:%2F%2Flh5.googleusercontent.com%2Fp%2FAF1QipPnejo5Po_gVvngKpCckVXqqF6Eq_pfn3Kgh8CA%3D
[Accessed 05 05 2023].

Fry, E. &., 2020. *Sir William Graham Holford, Knight, Royal Academician*. [Photograph Online]
Available at:
https://en.wikipedia.org/wiki/William_Holford,_Baron_Holford#/media/File:Sir_William_Holford_1953.jpg
[Accessed 05 05 2023].

Geology.com, 2023. *Israel Map and Satellite Image*. [Map Online]
Available at: <https://geology.com/world/israel-satellite-image.shtml>
[Accessed 01 03 2023].

Geron, A., 2016. *Rehovot Community Center / Kimmel Eshkolot Architects*. [Photograph Online]
Available at: https://www.archdaily.com/803544/rehovot-community-center-kimmel-eshkolot-architects?ad_medium=gallery
[Accessed 06 04 2023].

Gibson, H., 2022 11. *Jaffa fire station*. [PhotographOnline]
Available at:
https://www.google.com/maps/place/Jaffa+fire+station/@32.0494646,34.7628218,3a,75y,90t/data=!3m8!1e2!3m6!1sAF1QipPnejo5Po_gVvngKpCckVXqqF6Eq_pfn3Kgh8CA!2e10!3e12!6shhttps:%2F%2Flh5.googleusercontent.com%2Fp%2FAF1QipPnejo5Po_gVvngKpCckVXqqF6Eq_pfn3Kgh8CA%3D

[h8CA!2e10!3e12!6shhttps:%2F%2Fh5.googleusercontent.com/%2F%2FAF1QipPncjo5Po_gVvngKpCckVXqqF6Eq_pfnN3Kgh8CA%3D](https://www.googleusercontent.com/%2F%2Fh5.googleusercontent.com/%2F%2FAF1QipPncjo5Po_gVvngKpCckVXqqF6Eq_pfnN3Kgh8CA%3D)
[Accessed 05 05 2023].

Gobee Travel, 2020. *St. Peter Church in Old Jaffa*. [Photograph Online]
Available at: <https://www.gobeetravel.com/wp-content/uploads/2020/03/%D7%94%D7%9B%D7%A0%D7%A1%D7%99%D7%99%D7%94-%D7%91%D7%99%D7%A4%D7%95.jpg>
[Accessed 06 04 2023].

Google Maps, 2012. [Photograph Online]
Available at:
<https://www.google.com/maps/@32.0899377,34.8296641,3a,90y,287.02h,113.04t/data=!3m6!1e1!3m6!1s7K3JdFk0Wz1po9ssiHfWXAww!2e0!7i13312!8i6656>
[Accessed 06 04 2023].

Google Maps, 2015. *Yad Eliyahu Community Police*. [Photograph Online]
Available at:
<https://www.google.com/maps/place/Community+policing+center/@32.0591099,34.7895535,3a,75y,94.4h,90t/data=!3m6!1e1!3m6!1sO2hEtkQiiSoSuorlyFNS3Q!2e0!5s20150301T000000!6shhttps:%2F%2Fstreetviewpixels-pa.googleapis.com/%2Fv1%2Fthumbnail%3Fpanoid%3DO2hEtkQiiSoSu>
[Accessed 05 05 2023].

Google Maps, 2023. *Google Maps*. [Map Online]
Available at: <https://www.google.com/maps/>
[Accessed 05 05 2023].

Hadar Yosef, 2023. *Migrashim*. [Photograph Online]
Available at: <https://www.migrashim.org.il/PickSlot?hadary>
[Accessed 14 04 2023].

HaMichlol Jewish Encyclopedia, 2023. *Israel Districts*. [Map Online]
Available at:
https://www.hamichlol.org.il/%D7%9E%D7%97%D7%95%D7%96%D7%95%D7%AA_%D7%99%D7%A9%D7%A8%D7%90%D7%9C
[Accessed 01 03 2023].

Heijden, J. V. d., 2009. *Towards a Better Understanding of Building Regulation*. [Online]
Available at:
https://www.researchgate.net/publication/46559674_Towards_a_Better_Understanding_of_Building_Regulation
[Accessed 17 02 2023].

Hein, C., 2018. The What, Why and How of Planning History. In: C. Hein, ed. *The Routledge Handbook of Planning History*. New York: Routledge, pp. 2-4.

Israel Hayom, 2016. [Photograph Online]
Available at:
https://www.israelhayom.co.il/sites/default/files/styles/566x349/public/images/articles/2016/02/28/14566695541662_b.jpg
[Accessed 06 04 2023].

Jackobson, M., 2017. *Elementary School Druyanov in Florentine*. [Photograph Online]
Available at:
<https://michaelarch.wordpress.com/2017/05/17/%d7%a1%d7%99%d7%91%d7%95%d7%91-%d7%91%d7%aa%d7%99-%d7%a1%d7%a4%d7%a8-23-%d7%91%d7%99%d7%aa-%d7%a1%d7%a4%d7%a8-%d7%99%d7%a1%d7%95%d7%93%d7%99-%d7%93%d7%a8%d7%95%d7%99%d7%90%d7%a0%d7%95%d7%91-%d7%91/>
[Accessed 06 04 2023].

Knoema, 2023. *Israel*. [Online]
Available at: <https://knoema.com/atlas/Israel#Demographics>
[Accessed 01 03 2023].

Lee Marshel Real Estate, 2023. *Tel Aviv Court*. [Photograph Online]
Available at: <https://www.leemarshal.co.il/projects/%D7%91%D7%99%D7%AA-%D7%9E%D7%A9%D7%A4%D7%98-%D7%94%D7%A9%D7%9C%D7%95%D7%9D-%D7%AA%D7%90/>
[Accessed 05 05 2023].

Matzafi, T., 2016. *Cinema City does not allow disabled people to order tickets on the website*. [Photograph Online]
Available at: <https://www.globes.co.il/news/article.aspx?did=1001104654>
[Accessed 05 05 2023].

Mikveh Israel Visitor Center, 2021. [Photograph Online]
Available at:
<https://www.facebook.com/633809723340864/photos/a.633809826674187/3820891217966016/>
[Accessed 05 05 2023].

Pissourios, I. A., 2014. Tow-Down and Bottom-Up. *European Spatial Research Policy*, 21(1), pp. 83-98.

Pissourios, I. A., 2023. Elements of the theory of urban indicators and the approach of the self-regulated planning indicators. pp. 1-7.

Planning Administration , 2020. *MAVAT Procedure (uniform structure for programs) (in Hebrew)*. [Online]
Available at:

https://www.gov.il/he/Departments/Guides/mavat_2009_guide?chapterIndex=1
[Accessed 02 03 2023].

Planning Administration, 2022. *Zoning Table 2022*. [Online]
Available at:
https://www.gov.il/BlobFolder/guide/utilities_mavat/he/mavat_mavat_TablZoning2022.pdf
[Accessed 01 03 2023].

Planning Authority, 1999. [Online]
Available at: <https://apps.land.gov.il/IturTabotData/tabot/telmer/5004976.pdf>
[Accessed 06 04 2023].

Planning Authority, 2005. *NOP 35 Plan*. [Map Online]
Available at: <https://mavat.iplan.gov.il/SV4/1/99001664/310>
[Accessed 20 03 2023].

Planning Authority, 2010. *DOP 5 Plan*. [Map Online]
Available at: <https://mavat.iplan.gov.il/SV4/1/99001665/310>
[Accessed 20 03 2023].

PR, 2023. *Beit Ariela*. [Photograph Online]
Available at: <https://www.timeout.com/israel/attractions/beit-ariela>
[Accessed 06 04 2023].

Prashkovski, 2023. *Parashkovski in Ramat HaNasi, Haifa*. [Plan Online]
Available at: <https://www.yad2.co.il/realestate/project?project=23513>
[Accessed 26 04 2023].

Project-TLV, 2023. *Tel Aviv Museum of Art*. [Photograph Online]
Available at: <https://project-tlv.info/places/art-museum/>
[Accessed 05 05 2023].

Psychogeriatric Day Care Center, 2023. *About us*. [Photograph Online]
Available at: <https://merkazyom.org.il/>
[Accessed 06 04 2023].

Religious Rishon Le'Tziyon , 2019. *Mikveh Tehorim*. [Photograph Online]
Available at: <https://mdrl.org.il/wp-content/uploads/2019/06/tehorim.jpg>
[Accessed 05 05 2023].

Roldogin, P., 2023. *Construction – Planning and Licensing Procedures in the State of Israel (in Hebrew)*. [Online]
Available at:
<https://www.civileng.co.il/%D7%A0%D7%99%D7%99%D7%94-%D7%94%D7%9C%D7%99%D7%9B%D7%99-%D7%AA%D7%9B%D7%A0%D7%95%D7%9F->

[%D7%95%D7%A8%D7%99%D7%A9%D7%95%D7%99-%D7%91%D7%9E%D7%93%D7%99%D7%A0%D7%AA-%D7%99%D7%A9%D7%A8%D7%90%D7%9C](#)
[Accessed 24 02 2023].

Rosman, D., 2023. *Democratic school Yavne*. [Photograph Online]
Available at: <https://www.diegorosman.com/projects/democratic-school-yavne>
[Accessed 05 05 2023].

Shafir, H., 2020. *Mikveh Israel*. [Photograph Online]
Available at: <https://www.pikiwiki.org.il/image/view/68498>
[Accessed 27 04 2023].

Shani, 2018. *Waldorf School in Hardorf was chosen as the outstanding school for the year 2018*.
[Photograph Online]
Available at: <https://m24.co.il/byhs-wldwr-bhrdw-nbxr-khbyth-hsphr-mst/>
[Accessed 05 05 2023].

Shay, D., 2006. *Health Clinic*. [Photograph Online]
Available at:
https://he.wikipedia.org/wiki/%D7%A7%D7%95%D7%91%D7%A5:Kupat_Holim.JPG
[Accessed 06 04 2023].

Shutterstock, 2021. *Third summer of inspections: Do we play less in beach restaurants?*.
[Photograph Online]
Available at: <https://timeout.co.il/topic/%D7%97%D7%95%D7%A3-%D7%91%D7%95%D7%92%D7%A8%D7%A9%D7%95%D7%91/>
[Accessed 05 05 2023].

Sindel, Y., 2020. *Treasury said planning funding reform to push Haredi schools to teach core subjects*. [Photograph Online]
Available at: <https://www.timesofisrael.com/ministry-said-planning-funding-reform-to-push-haredi-schools-to-teach-core-subjects/>
[Accessed 06 04 2023].

Sittan, U., 2012. *Hassan Bek Mosque*. [Photograph Online]
Available at: https://commons.wikimedia.org/wiki/File:Hassan_Bek_Mosque.JPG
[Accessed 06 04 2023].

Statista, 2021. *Total population of Israel in 2021, by district*. [Graph Online]
Available at: <https://www.statista.com/statistics/1288905/total-population-of-israel-by-district/>
[Accessed 01 03 2023].

Tager, E., 2013. *100 Years of Loneliness: The Rise and Fall of the Big Synagogue in Tel Aviv*.
[Photograph Online]

Available at: <https://xnet.ynet.co.il/architecture/articles/0,14710,L-3102707,00.html>
[Accessed 06 04 2023].

Taicher, D. A., 2010. *The bilvah in Rikba*. [Photograph Online]
Available at: <https://www.pikiwiki.org.il/image/view/8724>
[Accessed 06 04 2023].

Tal, D., 2016. *For the Songs: Musical Journey in the Israeli Landscape*. [Photograph Online]
Available at: <https://www.ynet.co.il/articles/0,7340,L-4851235,00.html>
[Accessed 14 04 2023].

Taylor, N., 1998. *Urban Planning Theory Since 1945*. London: SAGE Publications.

Tel Aviv Map 360, 2023. *Downtown Map*. [Map Online]
Available at: <https://telavivmap360.com/img/0/tel%20aviv-downtown-map.jpg>
[Accessed 6 04 2023].

Tennis, 2023. *Jaffo Tennis*. [Photograph Online]
Available at: <https://www.tennis.org.il/centers/%D7%99%D7%A4%D7%95/>
[Accessed 05 05 2023].

The Parick Geddes Centre, 2023. *The Parick Geddes Centre*. [Photograph Online]
Available at: <https://www.patrickgeddescentre.org.uk/>
[Accessed 05 05 2023].

Time Out, 2022. *Luna Park*. [Photograph Online]
Available at: <https://timeout.co.il/%D7%94%D7%94%D7%98%D7%91%D7%94-%D7%94%D7%99%D7%95%D7%9E%D7%99%D7%AA-6/>
[Accessed 05 05 2023].

Welter, V. M., 2009. The 1925 Master Plan for Tel-Aviv by Patrick Geddes. *Israel Studies*, 14(3), pp. 94-119.

Wikipedia, 2011. *Habima Theatre Tel Aviv-Yafo*. [Photograph Online]
Available at:
[https://he.wikipedia.org/wiki/%D7%94%D7%91%D7%99%D7%9E%D7%94#/media/%D7%A7%D7%95%D7%91%D7%A5:Habima_Theatre_\(cropped\).jpg](https://he.wikipedia.org/wiki/%D7%94%D7%91%D7%99%D7%9E%D7%94#/media/%D7%A7%D7%95%D7%91%D7%A5:Habima_Theatre_(cropped).jpg)
[Accessed 14 04 2023].

World Data, 2023. *Population Growth by Country*. [Online]
Available at: <https://www.worlddata.info/populationgrowth.php>
[Accessed 01 03 2023].

World Population Review, 2023. *Israel Population 2023 (Live)*. [Online]
Available at: <https://worldpopulationreview.com/countries/israel-population>
[Accessed 01 03 2023].

7. Bibliography

Britannica, 2023. *Urban Form*. [Online]

Available at: <https://www.britannica.com/topic/urban-planning/Urban-form>
[Accessed 17 02 2023].

Center for Real Estate Editors, 2023. *Planning and Construction Committee – the complete guide 2023 (In Hebrew)*. [Online]

Available at: <https://www.nadlancenter.co.il/article/6513>
[Accessed 03 03 2023].

Finkelstein, A., 2020. *Local Government in Israel: General Background, Core Issues, and Challenges*. [Online]

Available at: <https://www.idi.org.il/media/15356/local-government-in-israel-general-background-core-issues-and-challenges.pdf>
[Accessed 02 03 2023].

Forum Sharet, 2023. *All you need to know on City Building Plan (CBP) (in Hebrew)*. [Online]

Available at:
<https://www.forumsht.co.il/%D7%AA%D7%9B%D7%A0%D7%99%D7%AA-%D7%91%D7%A0%D7%99%D7%9F-%D7%A2%D7%99%D7%A8-%D7%9E%D7%94%D7%99/>
[Accessed 24 02 2023].

Freestone, R., 2020. *Urban Planning in a Changing World, The Twentieth Century Experience*. London: Routledge.

Heijden, J. V. d., 2009. *Towards a Better Understanding of Building Regulation*. [Online]

Available at:
https://www.researchgate.net/publication/46559674_Towards_a_Better_Understanding_of_Building_Regulation
[Accessed 17 02 2023].

Institute of Historic Building Conservation, 2022. *The History of Building Regulations and Building Control*. [Online]

Available at:
https://www.designingbuildings.co.uk/wiki/The_history_of_building_regulations_and_building_control
[Accessed 17 02 2023].

NEVO, 2023. *Building and Construction Law 1965*. [Online]
Available at: https://nevo.co.il/law_html/law01/044_001.htm
[Accessed 24 02 2023].

Planning Administration , 2020. *MAVAT Procedure (uniform structure for programs) (in Hebrew)*. [Online]
Available at:
https://www.gov.il/he/Departments/Guides/mavat_2009_guide?chapterIndex=1
[Accessed 02 03 2023].

Planning Administration, 2018. *Guide for Allocation of Land for Public Needs*. Tel Aviv: Meirgraf Print.

Roldogin, P., 2023. *Construction – Planning and Licensing Procedures in the State of Israel (in Hebrew)*. [Online]
Available at:
<https://www.civileng.co.il/%D7%91%D7%A0%D7%99%D7%99%D7%94-%D7%94%D7%9C%D7%99%D7%9B%D7%99-%D7%AA%D7%9B%D7%A0%D7%95%D7%9F-%D7%95%D7%A8%D7%99%D7%A9%D7%95%D7%99-%D7%91%D7%9E%D7%93%D7%99%D7%A0%D7%AA-%D7%99%D7%A9%D7%A8%D7%90%D7%9C>
[Accessed 24 02 2023].