

## High-Quality Technological Education as a Lever for a New Housing Project in the City of Kiryat Gat ( Israel )

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### ***Abstract***

In the medium-sized city of Kiryat Gat in the south of Israel, a new housing project is starting these days. The initiators of this project intend to promote its utilization of a new model of technological and scientific education. The focus of this article is on the following aspects of this model: the demography and sociology of the location, a new pattern of governmental and other structures involved in this move and, more specifically, how to give the optimal answer to the challenge of reducing educational gaps. The following article, in addition to analyzing the present situation and intentions, foresees additional changes in the near future. The author serves voluntarily as a consultant to the local authorities on the topics of technological and scientific education.

### ***The city of Kiryat Gat today and tomorrow***

The city of Kiryat Gat was established in 1955 as a development town by 18 families of Moroccan Jews. At the end of 2012, the city had a total population of 48,275(1). In the 1980s, Jews from the former Soviet Union became a third of the local population. The local economy was based since the beginning of its settlement on the textile industry. In 1980s-1990s, many more sophisticated plants were established, and the local branch of "Intel", one of the biggest and important branches of this company, became the flagship of local employment. The development of the Rabin Industrial Zone on the eastern edge of the city, and the opening of Highway 6, further improved the economy of the city. But over the years, the city's location became its major problem. Kiryat Gat lies 56 kilometers south of Tel Aviv, 43 kilometers north of Be'er-Sheva and 68 kilometers from Jerusalem. Professional specialists for local industry, medical and educational services choose to live in the large cities, only coming into Kiryat Gat for work. The highway and the railway support this tendency. As a result, the city does not have academic institutions or non-academic colleges.

An additional factor influencing the development of Kiryat Gat is the high price of housing in the central areas near Tel-Aviv, beyond the reach of Tel-Aviv young couples, including the highly-educated. The Land Authority of Israel has initiated, over the next five years, the building of 14,400 housing units in the outskirts of Kiryat Gat – apartments and private houses, and has proposed to the builders appropriate lands (2). The cost of a unit will be less than half compared with similar housing on the outskirts of Tel-Aviv. Taking into account the size of an average Jewish family in Israel (about 5 people), this means building a "New Kiryat Gat", called Karme Gat ("The Gath Vineyards") near to and more populated than the old one. The question remains: Will the young couples from the Center of the country relocate to Karme Gat? The second part of this paper will deal with factors involved in such a move.

### ***The Move: why should I go to such a place?***

In the existing stage of Israeli social structure and mentality, we can clearly point out the "ladder of preferences" of a young, dynamic and educated family:

1. A stable and lasting solution to **the housing problem**.
2. A promising solution to the **employment problem**.
3. A promising **high level of local education** giving comprehensive solutions to the young generation of newcomers.
4. A promising **"green" environment**.

The project of Karme Gat seeks to address each of these four elements, and will be presented accordingly:

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1. As we already pointed out, the whole project of "Karme Gat" is oriented to providing **affordable and varied accommodation**. The experience of establishing completely new towns with very positive images and quality of life, such as occurred in Carmiel and Modi'in (3) supports this plan.
2. As mentioned above, the location of the existing town of Kiryat Gat provides its inhabitants, including the inhabitants of the nearby cities of Tel-Aviv, Jerusalem, Be'er-Sheva, Ashdod and Ashkelon, with a **wide range of employment solutions**. In addition, the town of Kiryat Gat is the location of one of the biggest branches of "Intel" and other sophisticated industries. These industries partially or mainly rely upon human resources residing outside the town - so the professional newcomers will be highly welcomed.
3. The so called "New Kiryat Gat" will be supplied with **absolutely new educational facilities**: kindergartens, schools and libraries. In general, it promises young educational teams and leadership, which can only improve the local education. The new town brings not only new pupils, but also new teachers, providing additional means of employment for many families of newcomers. As entry into kindergartens and grade schools in Israel is strongly zoned, the children of the "old" and supposedly more "weak" population of the old part of town will be unable to enroll into the educational frameworks of the "new" town. However, the renewed technological education of the "new" town will provide an opportunity to reduce the educational gaps in the town of Kiryat Gat. In the next section of the article, the methods of achieving this reduction will be presented.
4. The future "New Kiryat Gat" is situated in **an area free of industrial zones and far away from the chemical industry** of the South. Such an environment can be seen as very "green" - especially compared to the "big apple" of Tel-Aviv or the surroundings of Haifa. This location will therefore be attractive to the newcomers.

**High quality technological education as a lever for a housing project.**

**1. The existing educational system in Kiryat Gat.**

The town of Kiryat Gat has had to cope with the typical problems of the so-called "development towns". They were established quickly to provide immediate housing and employment solutions to new immigrants - mainly from North Africa and Asia(4). The "housing" consisted mainly of tents and huts, and the employment offered consisted of very simple jobs in new local plants in the confection and food processing industries.

The most dynamic, young and vocationally prepared people left Kiryat Gat and moved to the big cities, leaving behind their parents and "weaker" families. **Such a "negative selection" led to an educational local system that matched the educational level and aspirations of the parents.**

**The role of technological education in promoting social mobility in Israel.**

As opposed to the strict zoning of primary, intermediate and many high schools, the technology streams in schools are open to all youngsters of a city. Only in cases where the same stream exists in two schools, will a pupil be forced to enroll in the nearest one. Theoretically, these rules can open the various technological streams in town to everyone. **But one of the main obstacles in this aspect is the "economies of scale". The efficiency of big plants is very similar to the situation in big and small educational units.** The "economies of scale" in industry was described by Marx (5) and elaborated further by neoclassical economist Ferguson (6). Krakover uses these instruments of analysis to explain the phenomena of "economies of scale" in the reality of educational systems of Israeli "development towns"(7). **This phenomena narrows the options of technological streams in such a places like Kiryat Gat.** The number of pupils in technological streams during the last year (8) explains very clearly the situation in Kiryat Gat on the eve of starting the Karme Gat Project.

**The existing technological streams in Kiryat Gat are very small and old-fashioned.** 886 pupils (48.3%) were enrolled in technological education last year, while 25.2% (223 pupils) studied in the Art and Design stream - which does not lead to a promising future in local employment. The next largest stream is Computers (200 pupils, 22.6%). But this stream is offered not because students request it, but mainly because it is inexpensive to offer as every high school is already equipped with a number of computers. The

minimum number of pupils in any stream is at least 84 students in order to provide the quantity of lessons required to fulfill the program. However, in the last year in Kiryat Gat, there were only 3-4 economically justified streams, while the **other 6 streams were too few and too under-populated** and were not able to provide the stable economic bases for learning. **Not one of the streams went to the 14-th class, which could give graduates the PE diploma.**

*High level technological education of the new part of the city as a lever for the improvement of the entire city's educational and social situation.*

The situation in the local technological education - if changed - **can be a mighty lever for the better future of education in general and the social life** of the whole town. We have already emphasized the lack of zoning restrictions in this part of the system. At the same time, the **improved technological education can be used for maximizing the social mobility** of the next generation and **increase local technical specialists** - technicians and PEs - that will add different industries to the town. How can this be done? First of all, the local list of technological streams should be changed to the streams already existing in Israel which are not as yet offered in Kiryat Gat. These streams include (9): electronics and computer engineering, robotics, aviation, biotechnology, systems of diagnostics of motor transport, systems of TV and cinema, cybernetics and aerospace (as a sub-topic of the science-technological stream). In the new part of the town about 5-6 new high-schools will be established. Every one of them will open approximately two streams from the above list. Intensive marketing of the new frameworks could be attractive as a magnet for the next young generation and for their parents. In terms of employment, it will not only improve the supply of specialists for local, already existing industries, but will also attract to the growing town investments in new kinds of plants and factories.

The extension and growth of new and already existing technological streams into technological colleges (the 13-th and 14-th grades) will also increase the supply of local specialists. Such a move can change the overall image of the town, as has already happened in other places in the periphery (10). In addition to the new streams, the already existing "old" streams in the old part of the town and similar frameworks in the new part of it can **overcome the existing "economies scale"** and became more effective in the economic means as well. This will necessitate additional investments in equipment and improved infrastructure which should be based on the improved knowledge in science and technology in the previous stages of study. All these components of the changes in technological education can and will make it into a strong lever of improvement in the social life of the town. In the next section we will show the origin of the resources and partners for such a change.

### **3. New partnership in reaching the goals in education and social structure of the town.**

The advanced and costly steps outlined above can be fulfilled only by attracting to the project an array of new partners. The following is a list of additional partners emphasizing their contribution to the project:

a. **The Office of Prime Minister.** This new partner recognized the Karmel Gat project as a national one. As such, the project received **special funds** dedicated to the building of and equipping the new schools according to the highest standards. Its additional contribution is in **helping overcome the different bureaucratic obstacles.** The funds are dedicated especially for providing a solid basis for science and technology studies already in the early stages of kindergarten and primary school and for engaging an academic mentorship.

b. The main part of such mentorship is done by "**Ytek**" NGO (11). This body works with the slogan "Bringing technology to the community" and specializes in **preventing educational gaps between the different social groups of a local community.** Ytek is known as a very effective body in changing educational activities. Up until now, Ytek has concentrated its activities mainly in Northern Israel, and this is their first attempt to bring their experience to a new and big project in the South. Its theoretical basis is a part of **S.T.E.M. ( Science, Technology, Engineering, Mathematics )** (12) and widely uses the principles of **constructivism philosophy** (13).

c. "**Technion - Israel Institute of Technology**", Haifa. This is the oldest university in Israel (1912) with 4

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Nobel Prize winners and wide experience in the technological education of young generations. The university is working together with "Ytek" in its **involvement in the improvement of science and technological education in Kiryat Gat.**

d. **"Intel" Kiryat Gat** and other hi-tech local plants. They take on themselves to help with the broadening of the local system of technological education by providing opportunities for diploma-projects in technology, supplying mentors for such diploma-projects and co-op placements in the framework of the technological streams.

The common work and efforts of all "new" and traditional partners can provide the ingredients for the success of the Karme Gat Project to attract the new-comers to this town and to give all members of the local young generation better opportunities in their future lives.

**What can be learnt and what can be foreseen? Conclusions**

The following conclusions came be made from the present stage of this project:

1. Projects in the field of infrastructure with significant impact on the social structure of surrounding neighborhoods can and should be accompanied by significant changes in the educational background of such neighbourhoods.
2. The existing local social structures may not be dynamic enough to manage such projects and would require the involvement of additional partners.
3. The involvement of new partners in such projects opens new horizons for the use of educational structures in general and, more specifically, technological education.
4. Future changes require a new approach to the existing frameworks of technological education and can promote them to new forms and connections.
5. The new frameworks and initiatives of technological education have the potential to reduce educational gaps and initiate innovations.
6. Comparative studies in this field in different countries and systems of technological education can be extremely useful in the clarification of this topic.

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