



Tbilisi Crane Index Q4, 2017

KPMG Deal Advisory

Overview of the Crane Index (1/3)

The Crane Index is a tool utilized across the world in order to monitor the activity in the construction sector. By physically counting the number of cranes in a city on a periodic basis, it enables the reader to understand the construction trend over time

During the survey we count the number of cranes installed throughout Tbilisi as at the date of the survey, however such a physical count does not come without certain limitations – The Crane Index covers only the tower cranes and, due to the identification complexity, excludes the mobile (small) cranes

In order to make the regions and number of cranes comparable, we have calculated two ratios: 1) the density of population for each region (population divided by area); and 2) ratio of number of cranes per 1,000 persons for each region. The latter, along with the number of cranes and population, is provided separately for every region, as illustrated by the icons below

Please note, that the results of the previous survey (Q1 2017) were restated and updated results are provided in this report for comparative purposes. Restatement related to the following two matters:

- Reclassification of construction types (mainly between residential and multifunctional); and
- Update of population as per information provided by the Ministry of Justice



Number of cranes



Population density



Cranes per 1,000 persons

Key data for Q4 2017

# District	Area in km ²	Population	Cranes	Density per km ²	Cranes per 1,000 persons
1 Vake	24	120,201	31	4,974	0.26
2 Saburtalo	45	153,809	27	3,418	0.18
3 Isani-Samgori	80	307,421	16	3,843	0.05
4 Nadzaladevi	31	161,508	14	5,249	0.09
5 Gldani	34	164,154	12	4,841	0.07
6 Didube-Chughureti	26	151,829	10	5,863	0.07
7 Krtsanisi	14	55,024	4	3,813	0.07
8 Mtatsminda	8	64,798	3	8,099	0.05
Total	262	1,178,744	117	4,496	0.10

Source: KPMG Analysis, NAPR.GOV.GE, Google maps

Key data for Q1 2017

# District	Area in km ²	Population	Cranes	Density per km ²	Cranes per 1,000 persons
1 Saburtalo	45	153,809	36	3,418	0.23
2 Vake	24	120,201	26	4,974	0.22
3 Didube-Chughureti	26	151,829	12	5,863	0.08
4 Isani-Samgori	80	307,421	11	3,843	0.04
5 Nadzaladevi	31	161,508	8	5,249	0.05
6 Gldani	34	164,154	8	4,841	0.05
7 Mtatsminda	8	64,798	6	8,099	0.09
8 Krtsanisi	14	55,024	0	3,813	0.00
Total	262	1,178,744	107	4,496	0.09

Source: KPMG Analysis, NAPR.GOV.GE, Google maps

Overview of the Crane Index (2/3)

As of the fourth quarter of 2017 we have identified a total of 117 cranes installed at the construction sites, compared to 107 cranes in Q1 2017 (resulting in a growth rate of 9.3%), out of which 16 cranes have been idle (18 cranes in Q1 2017) either because of suspended construction works or due to them being dismantled

Construction sites were grouped into six broad categories, as illustrated in the table to the right

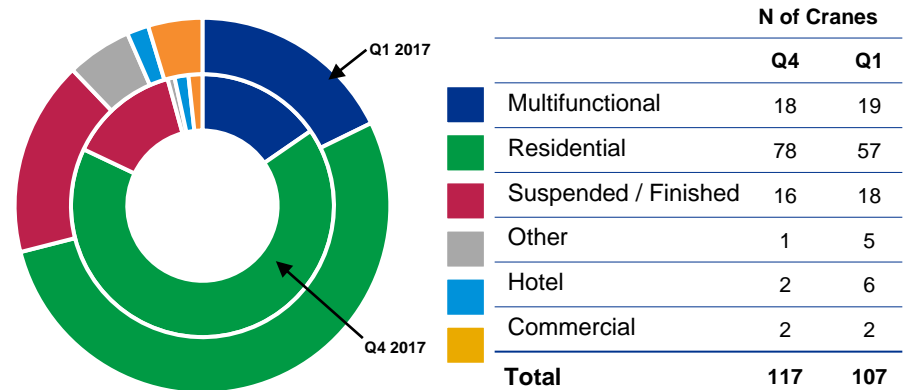
The results of our survey have also revealed that the construction of residential buildings have been the most attractive for developers and private investors, with 67.2% of construction works being related to residential premises followed by multifunctional complexes with a 15.5% share. The latter involves the development of a mix of residential, commercial, office and hotel premises

Residential constructions recorded the only growth rate of 36.8% (+21 units) among other categories reaching 78 cranes in total, compared to 57 cranes as of Q1 2017. However, the highest decrease of 80.0% (-4 units) and 66.7% (-4 units) were identified in other and hotel constructions now showing one and two cranes, respectively. The 11.1% (-2 units) and 5.3% (-1 unit) decreases were observed in suspended/finished and multifunctional constructions, respectively (18 and 19 cranes in Q1 2017, respectively). There was no change in the number of cranes of the commercial constructions

Residential	Those which are completely designated for the construction of residential premises	Hotels	Construction of new hotels
Multifunctional	Projects sharing a mix of residential, commercial and office premises	Commercial	Construction of trade centres and other premises designated for commercial use
Suspended / finished	Projects that are temporarily or permanently suspended and/or at the final stages of construction	Others	Projects with use other than those listed above (e.g. museum)



Breakdown of constructions by types in Q4 vs Q1 2017



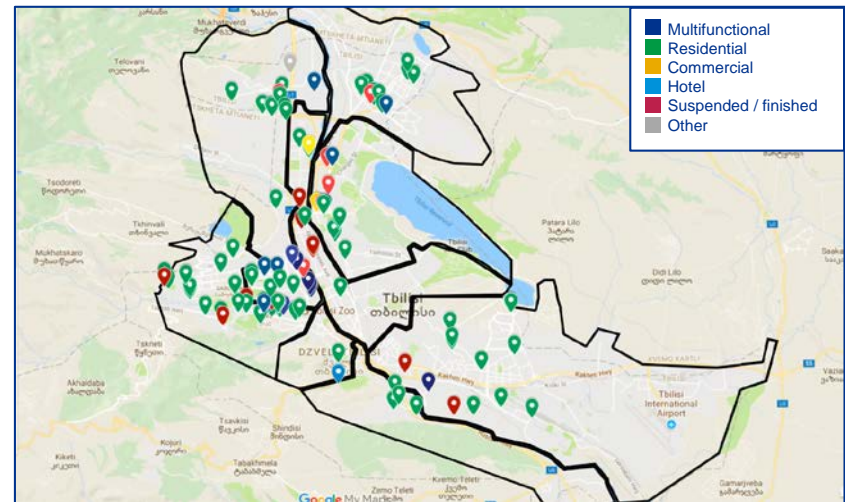
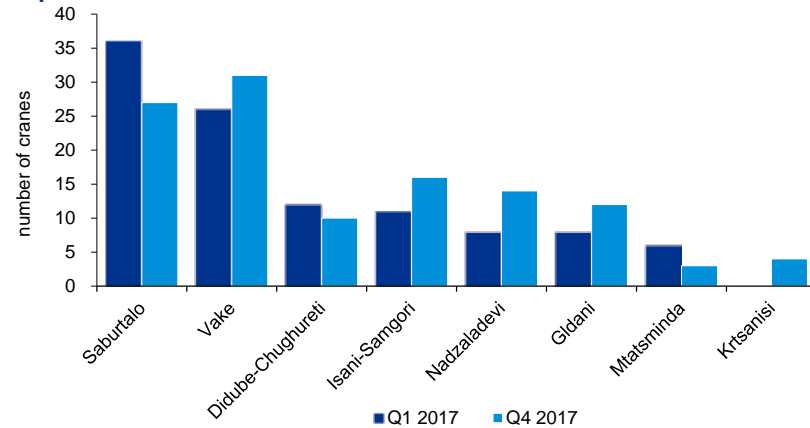
Overview of the Crane Index (3/3)

During our survey, we have identified 117 cranes installed in different parts of the city, with the most constructions situated in the western part of Tbilisi. It is important, to outline, that we have allocated cranes among the regions based on official administrative borders of the city of Tbilisi published by the National Agency of Public Registry (NAPR). The area covered by our survey amounts to 262 km², representing 52% of the total area of the city. Regions with populations of less than 10,000 individuals (Lilo, Telovani, Tskneti etc.) were excluded from our analysis

As evident on the map below, the leading region as of Q4 2017 with the highest number of construction sites is Vake (31 cranes), followed by Saburtalo (27), together covering 50% of all cranes. The highest concentration of construction in Vake and Saburtalo can be explained by their attractiveness, popularity among the citizens and increased commercial activity (Vake is perceived as the most prestigious district in the city)

Crane Index growth for Q4 2017 was mainly driven by significantly more cranes in Nadzaladevi (+6), Isani-Samgori (+5), Vake (+5), Gldani (+4), Krtsanisi (+4), that was partially offset by negative growth recorded in Saburtalo (-9), Mtatsminda (-3) and Didube-Chugureti (-2)

Comparison of Q4 2017 vs Q1 2017



Source: KPMG Analysis, Google maps

1. Vake



Description

Vake has moved into the first place in terms of number of cranes and cranes per 1,000 people. Vake is located in the center and western parts of the city, sharing borders with Mtatsminda and Saburtalo. According to the new allocation of administrative areas in the city, combined with adjustments made for the non-populated parts, the total area of the region was estimated to be 24 km². The central part of the region (also known as old Vake), is considered as one of the most prestigious places among citizens. This may also explain the highest concentration of construction sites in this part of the city

In spite of its small population and area, Vake is becoming the center of commercial and business activities, with some of the largest projects, such as Hilton, Axis Towers, etc. currently being developed

Out of 31 cranes (26 cranes, Q1 2017):

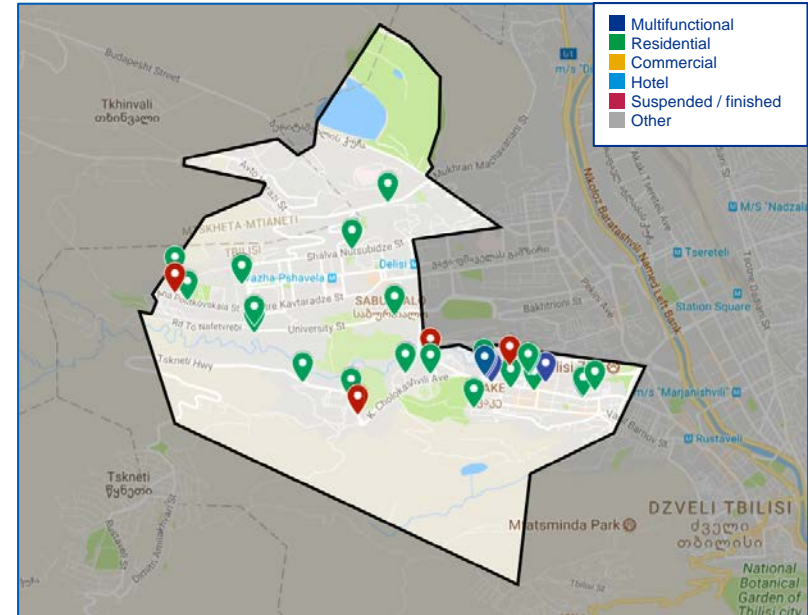
- 4 were suspended or at the final stages of construction (6 cranes, Q1 2017)
- 22 cranes were used for construction of residential buildings (15 cranes, Q1 2017)
- Remaining 5 cranes are used in multifunctional projects (4 cranes, Q1 2017)

The likely impact of the volume of activity is that the population density will increase and traffic congestion deteriorate further

It should be noted, that in Q1 2017 one crane was used for building a hotel and an additional unit was reclassified from hotel to multifunctional construction type



Location



Source: Google maps, KPMG Analysis

Q1 2017



#1 - 31



#4 - 4,974



#1 - 0.26



#2 - 26



#4 - 4,974



#2 - 0.22

2. Saburtalo



Description

Saburtalo, ranking as the 2nd largest region in the city, is located in the center and northern parts of the city. Saburtalo stretches from the Dighomi settlement down to Heroes Square covering some of the largest projects, such as Lisi Veranda, Green Budapest residential complex etc.

The total area of Saburtalo is 45 km² and it is the least dense part of Tbilisi with 3,418 persons per square kilometer

Saburtalo has moved into second place in terms of number of cranes and cranes per 1,000 people

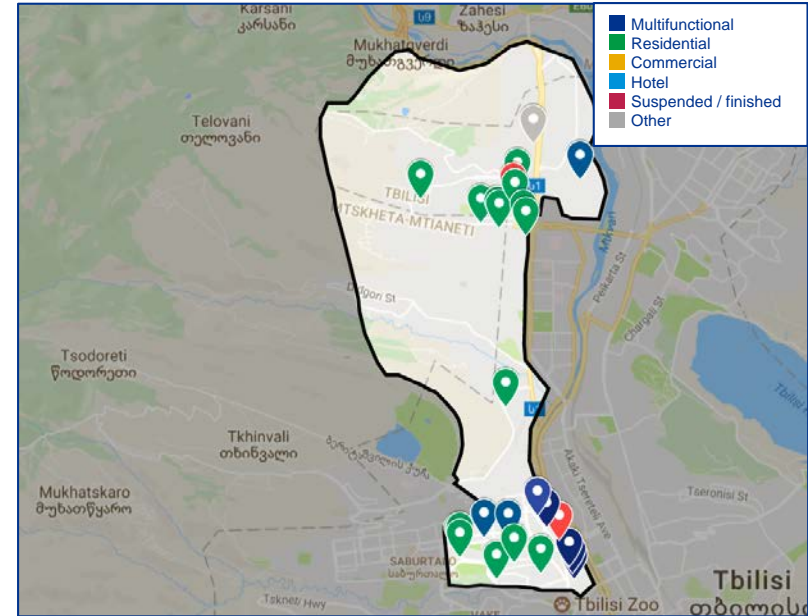
It can be seen from the map that the cranes are concentrated in two areas, by the southern part of the district and Didi Dighomi

Out of 27 cranes (36 cranes, Q1 2017):

- 8 were used in the development of multifunctional projects (11 cranes, Q1 2017)
- 16 cranes in the construction of residential buildings (19 cranes, Q1 2017)
- 2 cranes were idle either because construction works were completed or suspended (5 cranes, Q1 2017)
- One crane was used for construction of a hospital (1 crane, Q1 2017)



Location



Source: Google maps, KPMG Analysis

Q4 2017



#2 - 27



#8 - 3,418



#2 - 0.18

Q1 2017



#1 - 36



#8 - 3,418



#1 - 0.23

3. Isani-Samgori



Description

As the Tbilisi urban development process actively continues, the Isani-Samgori district has also been targeted for residential and commercial projects. Isani-Samgori district covers the territory close to Tbilisi reservoir. The area around the reservoir is attractive for real estate investors and is planned to undergo significant infrastructural development. The development envisages construction of hospitals, schools, trade centers, an ecologically friendly residential area and more. Hualing Group has been the single largest foreign investor in the Georgian real estate sector. Some of its notable projects such as Tbilisi Sea New City, Tbilisi Sea Plaza and Youth Olympic Village are located in this district

Isani-Samgori is the largest district of Tbilisi by area (80 square kilometers) with a density of 3,843 inhabitants per square kilometer

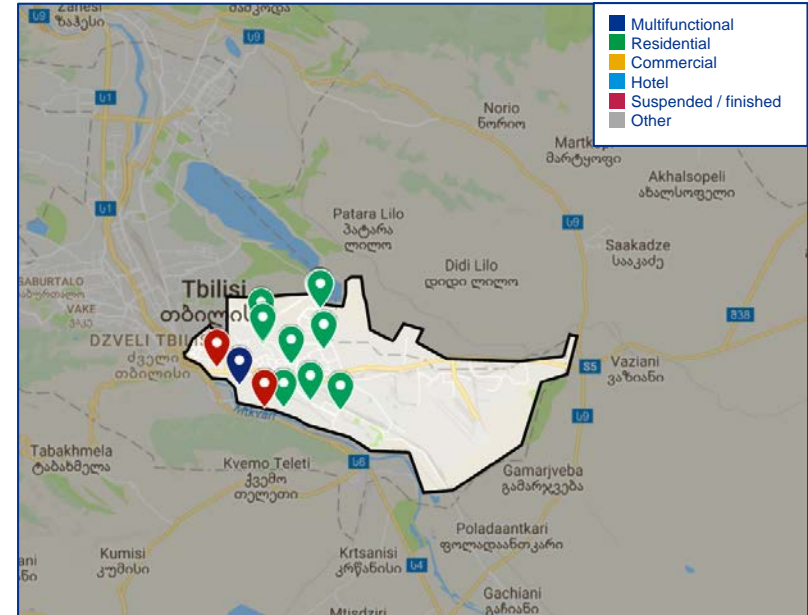
Out of identified 16 cranes (11 cranes, Q1 2017):

- 13 cranes were installed for residential building constructions (9 cranes, Q1 2017)
- 1 crane in the development of a multifunctional project (0 cranes, Q1 2017)
- Two cranes were idle either because construction works were completed or suspended (1 crane, Q1 2017)

Please note, that in Q1 2017 one crane was used for the construction of church



Location



Source: Google maps, KPMG Analysis

Q4 2017



#3-16



#6-3,843



#7-0.05

Q1 2017



#4-11



#6-3,843



#7-0.04

4. Nadzaladevi



Description

Nadzaladevi is the 4th largest district in Tbilisi with the total area of approximately 31 square kilometers (including Tbilisi reservoir) and density of 5,249 persons per square kilometer (excluding Tbilisi reservoir area). There are number of residential, business, entertainment and commercial projects planned for a development of the Tbilisi reservoir

In spite of the region's high population, Nadzaladevi has a lower level of construction activity with only 14 tower cranes currently being installed (8 cranes, Q1 2017), out of which:

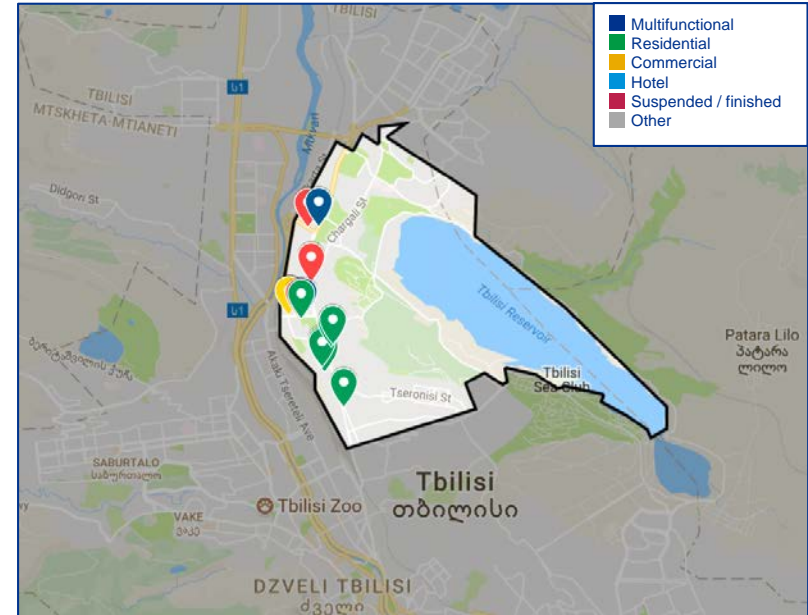
- 7 cranes were used in construction of residential buildings (4 cranes, Q1 2017)
- 3 cranes were idle due to cases of suspension or completion of construction works (2 cranes, Q1 2017)
- 3 cranes were installed at multifunctional building construction sites (1 crane, Q1 2017)
- One crane was used for the construction of commercial site (no crane, Q1 2017)

One crane was used in construction of University in Q1 2017

Low population of the region and moderate construction activity has ranked Nadzaladevi the 3rd according to cranes per 1,000 person index with 0.09 points



Location



Source: Google maps, KPMG Analysis

Q4 2017



#4-14



#3-5,249



#3-0.09

Q1 2017



#5-8



#3-5,249



#5-0.05

5. Gldani



Description

Gldani is the 3rd largest district of the capital city with an estimated area of 34 square kilometers. Gldani has the third highest population density (4,841 people per square kilometer) among Tbilisi's districts. The region stretches from Didube station up to the outskirts of the city in the northern part

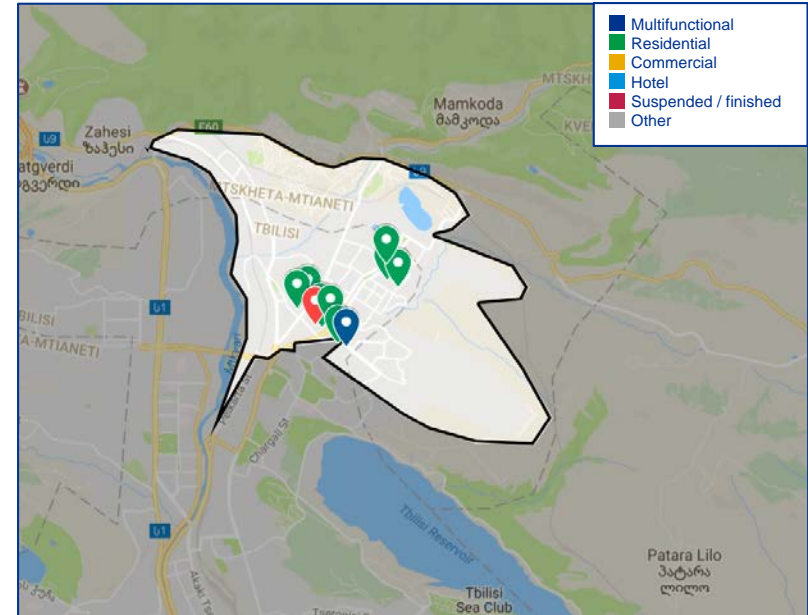
Due to the district's population dynamics, commercial infrastructure has been developed at a very rapid pace. Gldani is considered as an urban district, and shares lower popularity among citizens compared to Mtatsminda and/or Vake. This may explain lack of hotel or mixed-use project constructions

Out of 12 tower cranes (8 cranes, Q1 2017):

- 10 were installed for construction of residential buildings (8 cranes, Q1 2017)
- One crane was used in construction of a multifunctional building (no crane, Q1 2017); and
- One crane was idle (no crane, Q1 2017)



Location



Source: Google maps, KPMG Analysis

Q4 2017



#5-12



#5-4,841



#4-0.07

Q1 2017



#6-8



#5-4,841



#6-0.05

6. Didube-Chughureti



Description

Following Mtatsminda, Didube-Chughureti is the second most densely populated district with 5,863 people per square kilometer. Located in the middle of the city and stretching across the right and left banks of the river Mtkvari, Didube-Chughureti occupies around 26 square kilometers. The region combines two of the historical and touristically attractive parts of Tbilisi, such as Marjanishvili and part of Old Tbilisi

Buildings, designed for commercial use such as furniture stores, auto repair shops (such as Toyota center), restaurants and large trading centers like Tbilisi Mall, are mostly concentrated along the riverside area

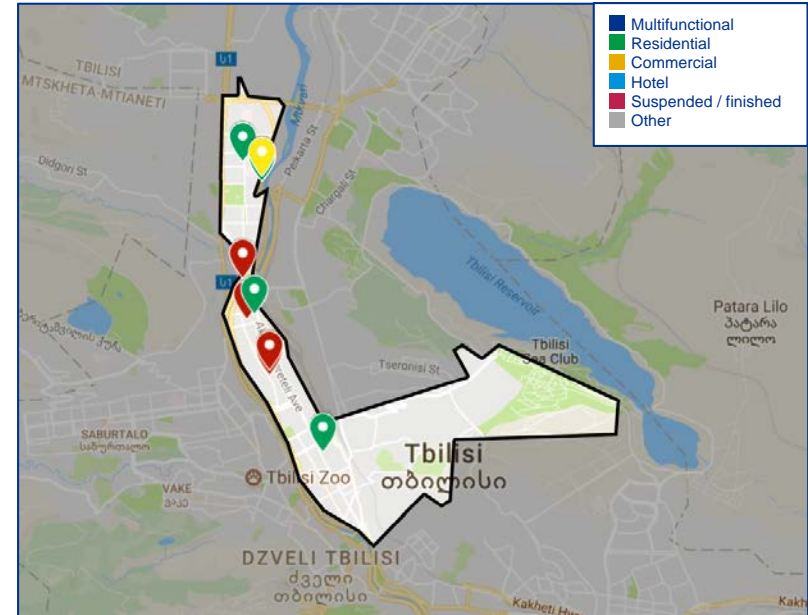
Out of 10 tower cranes (12 cranes, Q1 2017):

- 5 cranes were used for construction of residential premises (3 cranes, Q1 2017)
- 4 cranes were idle (3 cranes, Q1 2017); and
- One crane was used for commercial construction (1 crane, Q1 2017)

in Q1 2017 there were also 3 cranes used for multifunctional constructions, one crane for construction of a hotel and one crane for construction of “other” type of building. Named cranes were not identified in Q4 2017



Location



Source: Google maps, KPMG Analysis

Q4 2017



#6-10



#2-5,863



#6-0.07

Q1 2017



#3-12



#2-5,863



#4-0.08

7. Krtsanisi



Description

The Krtsanisi region stretches between Old Tbilisi, along the bank of the river Mtkvari, down to Gorgasali Square. The northern part of the region, along with Mtatsminda, is one of the most attractive destinations for tourists as most of the historical sites are in the Old Tbilisi Area. The site is crammed with cafes, restaurants and historical sights such as Narikala Fortress and Abanotubani. The latter is known for its natural hot spring waters rising from the ground. Several major diplomatic missions are also located in this part of the city such as the French Embassy, British Embassy, Swiss Embassy, Embassy of Japan and headquarters of the EUMM

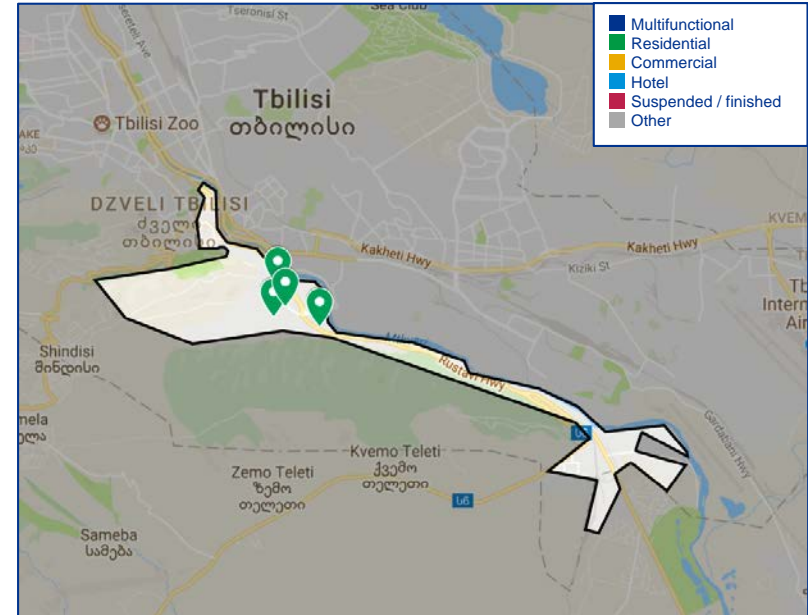
In spite of the popularity of the region, Krtsanisi seems to lack construction activity. We have counted only 4 cranes in Krtsanisi that were being used for construction of residential buildings

As a result of the restatement mentioned on the second page, there was no crane identified in Q1 2017 anymore in this region

Krtsanisi is also the area of the city with the least number of inhabitants amounting to 55,024 persons with an estimated total area of 14 square kilometers. Density of the population in Krtsanisi amounts to an 3,813 individuals per square kilometer. Krtsanisi ranks fifth in terms of cranes per 1,000 persons ratio of 0.07



Location



Source: Google maps, KPMG Analysis

Q4 2017



#7 - 4



#7 - 3,813



#5 - 0.07

Q1 2017



#8 - 0



#7 - 3,813



#8 - 0.00

8. Mtatsminda



Description

Mtatsminda, one of the oldest and smallest regions, located in the heart of the city, is considered as the historical center, combining famous monuments, cultural and architectural sights, such as Freedom Square, Opera, Rustaveli Theatre etc.

The total area despite its small population is estimated to be 8 square kilometers with the highest density of 8,099 individuals per square kilometer and it has the lowest cranes per 1,000 persons ratio of 0.05

The smallest district by size has the highest population density per square kilometer. This is in part due to the fact that the district includes large areas of Mtatsminda Park that is currently sparsely inhabited

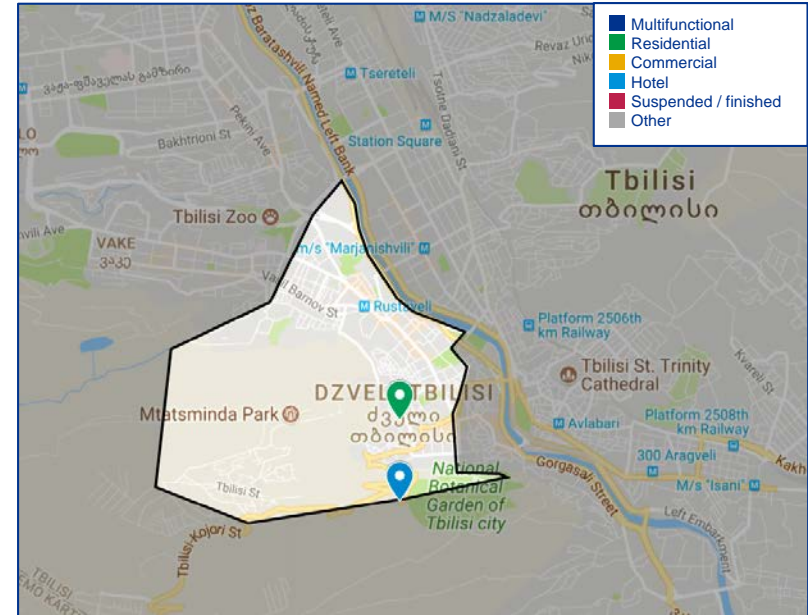
In Mtatsminda region we have identified 2 cranes (6 cranes, Q1 2017), out of which:

- Two cranes were installed for construction of a hotel (4 cranes, Q1 2017)
- One crane in the construction of a residential building (no crane, Q1 2017)

It should be noted that 3 cranes were dismantled due to the completion of the construction of reinforced concrete frame of the hotel at Freedom Square. Furthermore, one crane was used for construction of Galleria Tbilisi which was finished in Q4 2017, so the crane was dismantled. In addition, in the first quarter of 2017 one crane was used for construction of the other category type of building which wasn't the case in Q4



Location



Source: Google maps, KPMG Analysis

Q4 2017



#8-2



#1-8,099



#8-0.05

Q1 2017



#7-6



#1-8,099



#3-0.09



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