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The Actual Condition of Vacant Houses Location in Central Urban Area of Local Cities

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ABSTRACT

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THE ACTUAL CONDITION OF VACANT HOUSES LOCATION IN CENTRAL URBAN AREA OF LOCAL CITIES

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Abstract

In Japan, decline of the central urban area has been a major problem for a long time. In addition, in recent years, an increase in vacant houses has become an issue all over Japan due to population decrease and the aging population. There is also concern that the number of vacant houses will increase in central urban areas. In this research, we grasped the actual conditions of vacant houses in central urban areas and analyzed location trends in the target 5 city. We investigated the vacant houses in each central urban area and after land use of disappeared vacant house, and analyzed the location trend of vacant houses about the following three points; "Distance to station", "Road contact condition", and "Building area". we can mention to the tendency of vacant houses location is the house which is located far from station, have contact with narrow road, and have relatively small building area.

Keywords: Vacant house, Central urban area, Local city

1. Introduction

Over a long time in Japan, in central urban areas, various urban functions such as residential function, commercial function, and public function were collected. However, many of its functions have been relocated to the suburbs with the progress of motorization, further suburban locations of large-scale commercial facilities and decreasing population of residents have led to the decline of central urban areas [1].

The problem with the decline in the central urban area did not start in recent years. In 1998, the three-town planning law (hereinafter referred to as "Three Laws") were enacted in order to revitalize the central urban area. However, the reduction of the population in the central urban area and the suburbanization of various functions were not stopped, and in 2006, new Three Laws were established to improve the problems of the conventional three laws. It became possible for each municipality to receive assistance such as a special example of taxation system from related ministries and government subsidies when the municipality created the central urban area activation basic plan (hereinafter

referred to as "Basic Plan") and certified by the prime minister.

And in recent years, due to population declines and aging population, the increase of vacant houses has become a big issue throughout Japan, and each local government actively takes a survey of empty houses and takes countermeasures.

Even in the central urban areas where population declines and aging population are contributing to the decline, there is concern that the number of vacant houses are increasing, and it is considered that it is a factor of the decline in the central urban area.

In this study, we first analyze the vacant house trends in 35 cities which has Basic Plan and a population size from 100,000 to 400,000 excluding the metropolitan area. Then we investigated the actual conditions of vacant houses in central urban areas in the 5 cities: Obihiro city, Hirosaki city, Ueda city, Kofu city and Isahaya city, which showed characteristic trends among 35 cities.

The purpose is to analyze the location trend of vacant houses while paying attention to the subsequent use of the lost vacant house,

“distance from the station”, “road contact condition” and “building area”.

2. Literature Review

There are many previous literatures about the central urban area.

Fuji et al (2008) mentioned the influence of condominium location on central urban area activation based on reading the surveys for both condominium residential and commercial staff [2].

Mituda et al (2009) mentioned the effect of a plane parking lot on central urban area activation for 53 cities accredited to the basic plan [3].

There are also many previous literatures about the vacant houses.

Yoshitake et al (2016) mentioned a future image review about the occurrence and extinction of vacant houses and vacant lots in Yokosuka cities Yato area [4].

Yamashita et al (2015) mentioned the occurrence factors of vacant houses in Utsunomiya city by focusing on the occurrence pattern for 31 years [5].

However, there are few literatures about vacant houses in central urban areas, and in addition, most of literatures mention only one city or one area, therefore there is an issue that characteristics of vacant houses are characterized by regions, and cannot find any similarities.

3. Vacant House Trends in 35 Cities

We first analyzed the vacant house trends of whole city in 35 cities which has certified Basic Plan and has a population size from 100,000 to 400,000. For the analysis, we used the “Land and Housing survey” by the Ministry of Internal Affairs and Communication, between 2008 and 2013. Figure-1 shows that the relation between vacant rate and increase/decrease of vacant rate in 35 cities. Vacant rate is expressed by percentage of vacant houses relative to the number of houses.

From the analysis, we got the changes in the vacant rate is roughly unchanged between 2008 (16.3%) and 2013 (16.5%). However, the vacant rate in 2013 in Japan

as a whole is 13.5%, therefore the vacant rate in local cities is in high flux. From figure-1, 21 cities are increasing in vacant rate. We decided to investigate the central urban area in 5 cities which showed characteristic trends regarding both increase and decrease: Obihiro city, Hirosaki city, Ueda city, Kofu city, and Isahaya city.

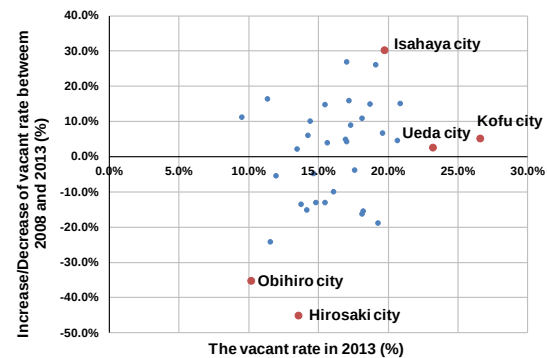


Figure-1: The relation between vacant rate and increase/decrease of vacant rate in 35 cities.

4. Research Methods of the Vacant House in Central Urban Area

In this study, we used the housing map to investigate the vacant houses in each central urban area because of there is no data about vacant house location that the municipal government have released.

We determined the vacant houses in central urban area in 5 cities between 2011 and 2016, then made charts of the distribution of vacant houses in each 5 central urban areas. We divided the vacant house distribution into three types: “a vacant house that occurred after 2012”, “a vacant house that kept standing since 2011”, and “a vacant house that disappeared after 2012”.

The area of central urban area is based on the basic plan in each city.

In this study, we focused only on detached houses, therefore we excluded the apartment and condominium.

5. Actual Condition of the Vacant House in 5 Central Urban Area.

5.1. Hokkaido Prefecture Obihiro City

The vacant rate in the whole of Obihiro city was 13.8% in 2008 and 10.2% in 2013. We can confirm that the trend of vacant houses is decreasing in the whole Obihiro city. Population and household in central urban area were 2,889 (population) and 1,762 (household) in 2011, 2,744 (population) and 1,760 (household) in 2016.

Figure-2 shows the distribution of vacant houses in the Obihiro central urban area. We confirmed the existence of 90 vacant houses in 2011 and 84 vacant houses in 2016. The vacant rate in central urban area was 16.1% in 2011 and 14.3% in 2016, it is a decreasing trend the same as the trend of the whole of Obihiro city.

In figure-2, there is a large distribution of vacant houses in the northeast area, along the national roads and major regional roads. In addition, we confirmed there are many vacant houses which occurred and disappeared in the northeast area.

Northeast area is the area where is expected the commercial function, from this, this area, it is feared that the decline of commercial function because of the influence of the vacant houses in bad affect to high-degree application.

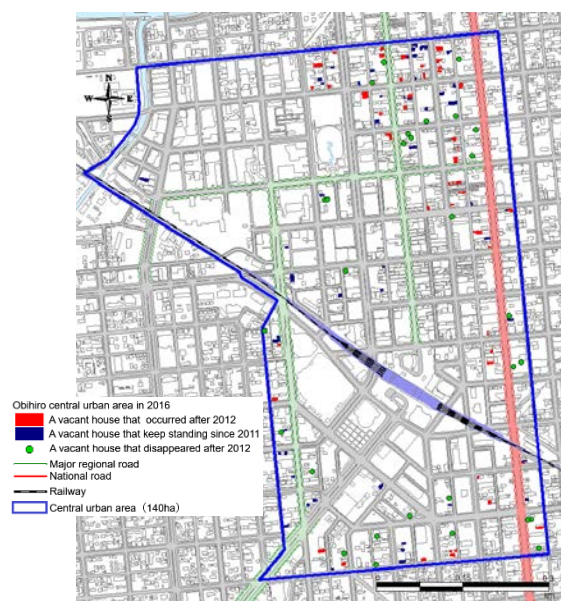


Figure-2: Distribution of vacant houses in Obihiro central urban area

5.2. Aomori Prefecture Hirosaki City

The vacant rate in the whole of Hirosaki city was 19.7% in 2008 and 13.6% in 2013. We can confirm that the trend of vacant houses is decreasing in a whole Hirosaki city. Population and household in central urban area were 7,498 (population) and 3,583 (household) in 2011, 7,520 (population) and 3,832 (household) in 2016.

Figure-3 shows the distribution of vacant houses in the Hirosaki central urban area. We confirmed the existence of 150 vacant houses in 2011 and 158 vacant houses in 2016. The vacant rate in central urban area was 10.6% in 2011 and 15.8% in 2016, it is an increasing trend in the central urban area against the trend of the whole of Hirosaki city.

In figure-3, there is a large distribution of vacant houses in the center area and along the major regional roads.

There are 14 large condominiums in the center area, from this, we need to ascertain about the relationship or influence of the condominiums location.

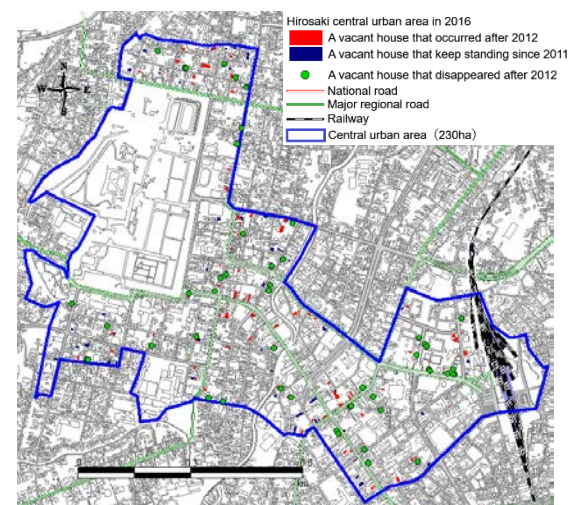


Figure-3: Distribution of vacant houses in Hirosaki central urban area

5.3. Nagano Prefecture Ueda City

The vacant rate in the whole of Ueda city was 22.7% in 2008 and 23.2% in 2013. We can confirm that the trend of vacant houses is increasing and the high vacant rate in a whole Hirosaki city. Population and household in central urban area were 9,996 (population) and 4,598 (household) in 2011,

10,382 (population) and 5,003 (household) in 2016.

Figure-4 shows the distribution of vacant houses in the Ueda central urban area. We confirmed the existence of 302 vacant houses in 2011 and 333 vacant houses in 2016. The vacant rate in the central urban area was 18.1% in 2011 and 22.3% in 2016, it is an increasing trend in the central urban area the same as the trend of the whole of Ueda city.

Ueda central urban area has the most vacant houses of the 5 cities, and from figure-4, vacant houses are distributed in the whole area and especially along national roads and major regional roads. There are also many occurrence and distribution of vacant houses, the corrective action is smooth but more than that new vacant houses have occurred, we can mention that this is a serious condition.

Saito (2014) mentioned, In Japan, it is difficult to circulate vacant houses again in housing market [6]. However, in the Ueda central urban area, many vacant houses are destroyed without being neglected. From this, we need to clear the process of smooth vacant house corrective action and circulate.

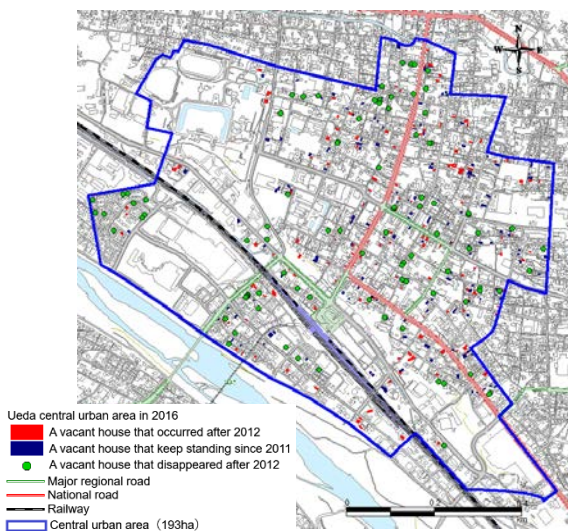


Figure-4: Distribution of vacant houses in Ueda central urban area

5.4. Yamanashi Prefecture Kofu City

The vacant rate in the whole of Kofu city was 25.2% in 2008 and 26.6% in 2013. We can confirm that the trend of vacant houses is increasing and the high vacant rate in the whole of Kofu city. Population and household in central urban area were 11,478 (population) and 5,820 (household) in 2011, 12,028 (population) and 6,362 (household) in 2016.

Figure-5 shows the distribution of vacant houses in Kofu central urban area. We confirmed the existence of 231 vacant houses in 2011 and 253 vacant houses in 2016. The vacant rate in the central urban area has 21.9% in 2011 and 27.2% in 2016, it is an increasing trend in central urban area same with the trend of the whole of Kofu city.

Kofu central urban area has many vacant houses, and highest vacant rates of 5 central urban areas. From Land and Housing survey in 2013, the vacant rate in Yamanashi prefecture has highest in Japan, and we can mention the vacant house condition in Kofu central urban area is also a serious condition.

From figure-5, there are few vacant houses distribution around the station and along national roads or major regional roads, on

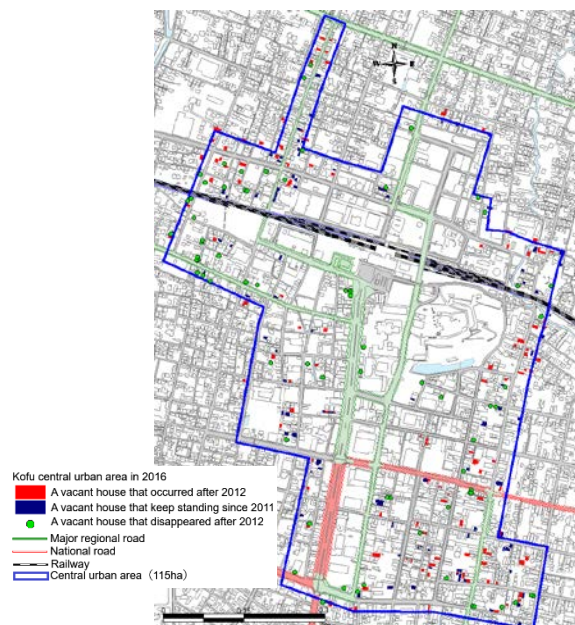


Figure-5: Distribution of vacant houses in Kofu central urban area

the other hand, there are many vacant houses distributed in the northwest area and the southeast area such as areas far from the station.

5.5. Nagasaki Prefecture Isahaya City

The vacant rate in the whole of Isahaya city was 13.8% in 2008 and 19.7% in 2013. We can confirm that the trend of vacant houses is rapidly increasing in the whole of Kofu city. Population and household in central urban area were 10,045 (population) and 4,420 (household) in 2011, 9,852 (population) and 4,417 (household) in 2016. Figure-6 shows the distribution of vacant houses in Isahaya central urban area. We confirmed the existence of 73 vacant houses in 2011 and 71 vacant houses in 2016. The vacant rate in the central urban area was 13.7% in 2011 and 17.0% in 2016. Although there are 2 declines in the number of vacant houses, there are also 15 declines in the number of houses, that's why the vacant rate has increased.

From figure-6, there are few vacant houses compared with other cities, but they are distributed along the railway and in the west area.

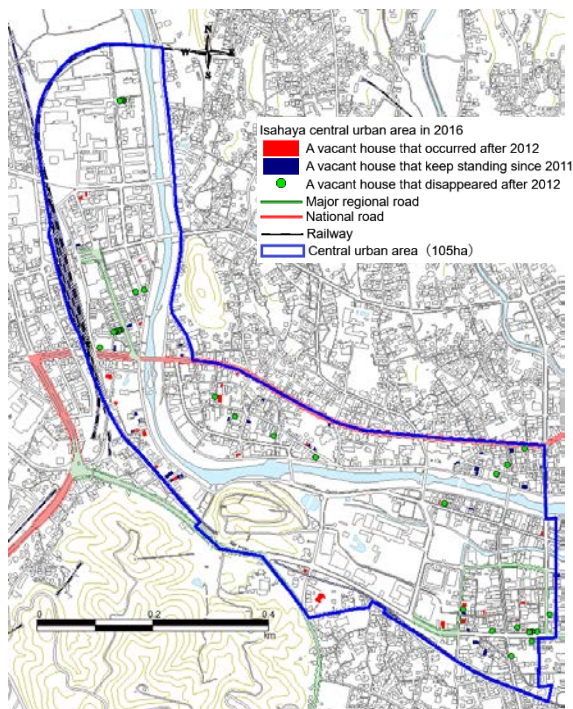


Figure-6: Distribution of vacant houses in Isahaya central urban area

In the west area, there is a shopping district and a plan to develop complex facilities which will have residential, office, and commercial function. By this deployment, this area is expected to have a resident population increase and activation of commercial function. We need to focus on the relationship with the urban redevelopment.

6. After Land Use of Disappeared Vacant Houses

In the previous chapter, we revealed the actual condition of vacant houses in each central urban area, and it might be concerned the effect of vacant house to various function decline in central urban area. On the other hand, effective utilization of vacant houses is an important factor to activation.

In this chapter, we investigated the after-land use of disappeared vacant house.

Table-1 shows, a number of vacant houses which were still vacant houses in 2011 but disappeared when we investigated in 2016, and the rate of disappeared vacant houses in 2011.

Figure-7 shows the breakdown of after land use of disappeared vacant houses in 2016. From table-1, the Ueda central urban area has the most disappeared vacant houses, however, about 30%-40% of the vacant houses disappeared in the 5 central urban areas. From figure-7, a large number of after land uses of disappeared vacant houses are “vacant lots”, “parking lots”, “new occupancy”, and “stores”. Especially, 39.7% vacant houses in sum of 5 cities have changed to vacant lots. Vacant lot is an

Table-1: Disappeared vacant houses and the rate of disappeared vacant houses in 2011

	a : a number of vacant houses in 2011	b : a number of disappeared vacant houses	b/a : the rate of disappeared vacant houses
Obihiro city	90	33	36.7%
Hirosaki city	150	54	36.0%
Ueda city	302	115	38.1%
Kofu city	231	74	32.0%
Isahaya city	73	31	42.5%

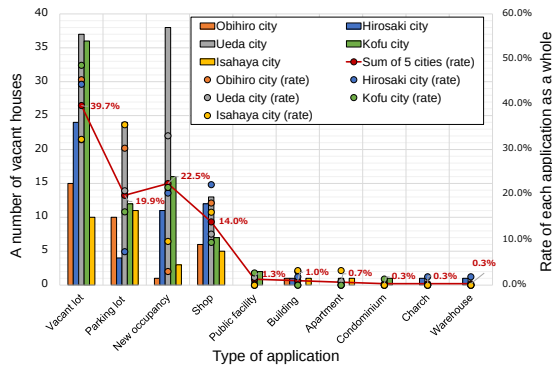


Figure-7: Breakdown of after land use

issue as the low unused land same with vacant house in Japan.

Parking lot is also an issue as the low unused land, however, according to an inhabitant's questionnaire in each cities' basic plan, "lack of parking lot" and "inconvenience of parking lot" is a reason why the people don't want to visit central urban areas. Therefore, parking lots are an important factor to activation in central urban areas.

Looking at each city, "new occupancy" is the most number and high rate compared with other cities. From this, as we mentioned in chapter5.3, smooth vacant houses circulate in Ueda central urban area is still interested.

7. Vacant House Location

By chapter5, we can mention to the characteristics of distribution of vacant houses are distributed along arterial roads and distributing far from stations. And we could see the variety of housing size.

From this, in this chapter, we investigated the trend of vacant house location against 887 vacant houses we could confirm in 2016, with focusing on 3 characteristics: "distance from station", "road contact condition", and "building area".

7.1. Distance from Station

We used the "distance calculation tool" on GIS to investigate the distance from station, dividing it into units of 100 meters.

Figure-8 shows the breakdown of distance from station in each central urban area.

From figure-8, we confirmed there are many distributions of vacant houses in "1000m or more" category, 43.8% of vacant houses distribute over 700m away. Ogawa (2013) mentioned the relationship between housing supply and population, households are stable in areas close to the station in local cities [7]. From this, also in central urban area, housing demand is high in areas close to the station.

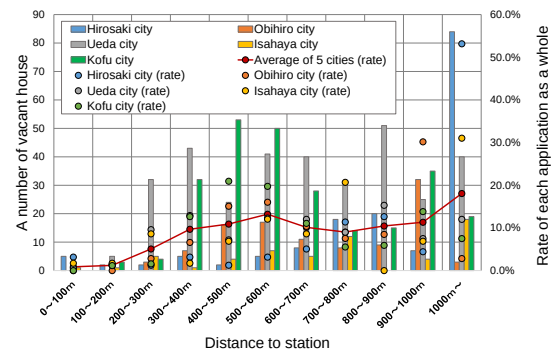


Figure-8: Breakdown of distance to station

7.2. Road Contact Condition

We used the "Nationwide Road Map Data for GIS" to investigate the road contact condition, dividing it into 4 types: "less than 3.0m", "3.0m or more and less than 5.5m", "5.5m or more and less than 13.0m", and "13.0m or more". "less than 3.0m" include a vacant house not in contact with the road. Figure-9 shows the breakdown of the road contact condition of vacant houses.

From figure-9, we confirmed the highest rate is the "less than 3.0m" category, it accounts for 38.5% of overall. In this, there

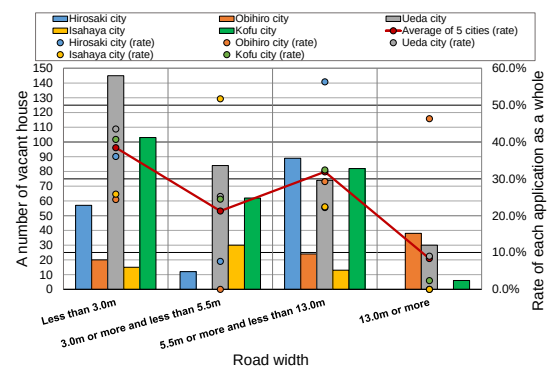


Figure-9: Breakdown of road contact condition

are many vacant houses which are not in contact with the road.

In Japan, the “Building Standards Law” has a “Contact Obligation” that the housing cannot be rebuilt unless more than 2.0m of the site is in contact with a road with a width of 4.0m or more. Therefore, there are many vacant houses which are difficult to update the land, and they might be concerned tends to be a vacant house.

7.3. Building Area

We used the “area calculation tool” on GIS to investigate the building area of vacant houses.

Figure-10 shows the building area by 5 cities. From figure-10, there are many distributions of vacant houses among building area 60-90m² (645sq ft - 968sq ft). According to the “Land and Housing survey” in 2013, the average building area of detached houses is 83.32m² (896sq ft) in Japan, therefore this result is the same as the building area distribution of entire houses in Japan and it is a general result.

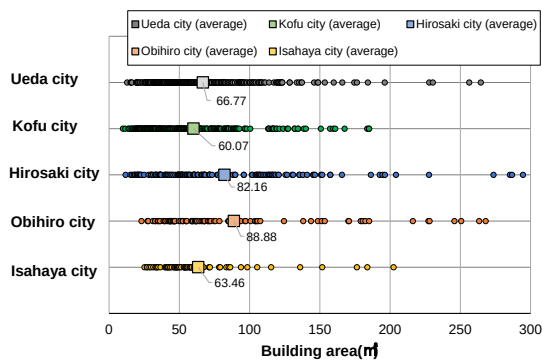


Figure-10: Building area of vacant house

8. Conclusion

The purpose of this study is to clarify the location trend of vacant houses in the central urban area of local cities.

We first clarified the actual condition of vacant houses in 5 central urban areas (Obihiro city, Hirosaki city, Ueda city, Kofu city, and Isahaya city), the number of vacant houses are increasing in 4 cities other than Obihiro city. From this, we can mention to tendency of the vacant house in

central urban area of local cities has get worse.

We can also mention to tendency of the vacant house distribution in the whole of the central urban area has 2 types: “dispersive location pattern” such as Hirosaki city and Ueda city, and “focus intensive location pattern” such as Obihiro city, Kofu city, and Isahaya city.

What we concluded about the vacant house location in central urban areas of local cities is the following 4 points.

- Many properties which had vacant houses became “Vacant lots”, “parking lots”, “new occupancy”, and “shops” after the vacant house disappeared.
- Many vacant houses are located over 700m away from the station.
- Many vacant houses have contact with a road of width less than 3.0m.
- Many vacant houses have building area with 60-90m² (645sq ft - 968sq ft).

Totally, we can mention to the tendency of vacant houses location in the central urban area of local cities is the house which is located far from station, have contact with narrow road, and have relatively small building area.

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