

## **Andrzej Kowalczyk**

University of Warsaw

e-mail: akowalcz1@uw.edu.pl

ORCID: 0000-0002-7862-7001

## **Beata Gierczak-Korzeniowska**

University of Rzeszow

e-mail: beatagierczak@ur.edu.pl

ORCID: 0000-0003-2460-2543

---

# **THE DEVELOPMENT AND IMPORTANCE OF TOURISM INFRASTRUCTURE IN THE AEROTROPOLIS: A CASE STUDY**

---

# **ROZWÓJ I ZNACZENIE INFRASTRUKTURY TURYSTYCZNEJ W AEROTROPOLIS – STUDIUM PRZYPADKU**

---

DOI: 10.15611/pn.2019.8.03

JEL Classification: L93, O18, H54, L92, L16, L83

**Summary:** Tourism infrastructure is one of the main elements enabling the development of tourism and recreation. It also gives a specific location a competitive advantage, often resulting from urban processes in areas which, by definition, perform completely different socio-economic functions. This is the case with new urban structures, such as aerotropoli, generated as a result of the integrated planning and management of large airports and airport-related areas. The main purpose of the work is to present the process of the development of tourism infrastructure at the aerotropolis and emphasize the role of created investments for the entire area located around Hong Kong International Airport. The article describes the processes related to the development of tourism infrastructure within the aerotropolis on Lantau Island. Reference was made to several subsystems including, among others, Hong Kong International Airport, the town of Tung Chung (also called Tung Chung New Town), Hong Kong Disneyland Resort and Ngong Ping 360. The publication is descriptive and illustrative, and is based on an analysis of the literature on the subject and Internet resources. The described case confirms that the physiognomy of airports and airport-related areas in the urban structure undergoes significant changes. They are transformed from facilities serving almost exclusively to meet transport needs to multifunctional spaces, which see the vicinity of the airport as an opportunity for the development of tourism and specific forms of tourism.

**Keywords:** aerotropolis, tourism infrastructure, Tung Chung New Town, space, Hong Kong Disneyland Resort, Ngong Ping 360.

**Streszczenie:** Infrastruktura turystyczna jest jednym z głównych elementów umożliwiających rozwój turystyki oraz rekreacji. Stanowi również o przewadze konkurencyjnej danego miejsca, niejednokrotnie będąc skutkiem procesów urbanistycznych na obszarach, które z założenia pełnią zupełnie inne funkcje społeczno-gospodarcze. Tak jest w przypadku nowych struktur urbanistycznych, jakimi są aerotropolia, powstałe w rezultacie zintegrowanego planowania i zarządzania dużymi lotniskami oraz strefami okołolotniskowymi. Głównym celem pracy jest przedstawienie procesu rozwoju infrastruktury turystycznej na terenie aerotropolis oraz podkreślenie roli powstałych inwestycji dla całego obszaru wokół Hong Kong International Airport. W artykule opisano procesy związane z rozbudową infrastruktury turystycznej w obrębie aerotropolis na wyspie Lantau. Odniesiono się do kilku podsystemów, w skład których wchodzi m.in.: lotnisko międzynarodowe Hong Kong International Airport, miasto Tung Chung (nazywane również Tung Chung New Town), Hong Kong Disneyland Resort oraz Ngong Ping 360. Publikacja ma charakter opisowy i poglądowy, opiera się na analizie literatury przedmiotu oraz zasobów internetowych. Podjęte w niej rozważania odnoszą się do konkretnego przypadku, a więc uwzględniają charakter i specyfikę rynku lokalnego. Opisany przykład potwierdza, że fizjonomia lotnisk i stref okołolotniskowych w urbanistycznej strukturze ulega istotnym zmianom. Z obiektów służących niemal wyłącznie realizacji potrzeb transportowych stają się przestrzeniami wielofunkcyjnymi, które w bliskości lotniska upatrują szans dla rozwoju ruchu turystycznego oraz konkretnych form turystyki.

**Słowa kluczowe:** aerotropolis, infrastruktura turystyczna, Tung Chung New Town, przestrzeń, Hong Kong Disneyland Resort, Ngong Ping 360.

## 1. Introduction

Airports and their surroundings are usually perceived as multimodal transport hubs which allow for meeting the transport needs of both residents of the region and travellers. In terms of their purpose, they are rarely described as attractive tourist destinations. However, in recent years there has been a growing consensus that the current nature of airports and their surroundings is changing, and numerous transformations of their infrastructure or organization surprise not only with their impetus, but also their functionality, which is more likely attributed to large urban agglomerations and metropolises [Gierczak-Korzeniowska 2017, p. 8].

The creation of the aerotropolis, one of the most influential models of space development today, is the effect of this process. J. Kasarda [2011] defines an aerotropolis as a comprehensive model of spatial development connected with an airport within a radius of several dozen kilometres [Stangel 2014, p. 44]. In 2011, Time Magazine called the aerotropolis one of 120 ideas that would change the world. The aerotropolis appears as a new area of interest for modern tourists. It is often seen as a so-called destination centre, i.e. a specially designed and uniquely developed space which is the travel destination. Thanks to the multitude of facilities and accompanying infrastructure, it is possible to satisfy virtually all the needs of tourists (accommodation, meals, entertainment, shopping, leisure, culture, etc.) without having to leave the area [Kostecka 2007; Fuhrmann 2008; Dudek-Mańkowska, Fuhrmann 2009].

Yet is it ever possible to plan space and airport-related areas so that they are attractive to tourists? It appears that this is so, and here Airport Urban planning promoted by Max Hirsch<sup>1</sup> has a significant part in the process. Although tourism has become the main driver of the urban economy, it threatens the vitality of city centres. In places like Barcelona and Chiang Mai (Thailand), soaring numbers of tourists cause significant capacity problems because the historical city centres are unable to absorb large numbers of tourists. Therefore, building facilities and places for guests staying outside the city centre is one way to reduce the pressure on the urban core and spread the economic benefits of tourism throughout the region [Hirsch 2018].

Therefore the main purpose of this work is to present the process of the development of tourism infrastructure at an aerotropolis and emphasize the role of the created investments for the entire area located around Hong Kong International Airport. The article describes the processes related to the development of the tourism infrastructure within the aerotropolis on Lantau Island.

However, to conclude the above considerations, it should be added that the plans for the further expansion of Hong Kong International Airport and the creation of a real aerotropolis in its vicinity may not be implemented. As shown in the article, the plans for the construction of the airport and the related Tung Chung New Town date back to the 1990s, and Hong Kong International Airport began operating in 1998. Although in subsequent years decisions were taken to expand Tung Chung New Town (2007) and Hong Kong International Airport (2014), which in 2018 resulted in the commissioning of further housing estates with over 7,000 flats, all these could be endangered by the street riots in Hong Kong of the summer of 2019. The uncertain future of Hong Kong as an autonomous region may have a negative impact on its economic importance. This means that Hong Kong International Airport may be less important in the coming years than it is today, so that there will be no need to expand it, which, in turn, will stop Tung Chung New Town development plans as the aerotropolis.

## **2. Tourism infrastructure at the aerotropolis**

Tourism infrastructure, otherwise referred to as the material base of tourism, is one of the three most important factors, alongside values and communication accessibility, determining the attractiveness of the regions. It is a set of buildings and facilities constituting the equipment of a given area, route or town which enable to meet the needs of tourists [Bogucka 2010, p. 94]. Tourism infrastructure comprises basic tourist facilities (accommodation and food and beverage facilities) and the accompanying facilities (tourist and semi-tourist facilities, and transport infrastructure) [Płocka 2002, p. 13].

---

<sup>1</sup> Max Hirsch – is a Research Assistant Professor at the University of Hong Kong and a leading expert on airports and urban infrastructure.

The infrastructure of air transport, like the infrastructure of other forms of transport, may also become a tourist attraction [Hall 2005, pp. 89-98], i.e. to be in the tourists' interest [Nowacki 1999, pp. 5-12]. After all, the transport function is not the only function which can be performed by airports and their accompanying infrastructure. The airport which generates tourist flows is a great place to start activities and create a product offer expanding the scope of its existing services.

The passenger terminal with a number of additional facilities for travellers remains a central element of the airport zone. It consists of not only duty-free shops and catering businesses, but also specialized services including boutiques, restaurants and various types of bars, shopping centres, banks, cinemas and other entertainment facilities and cultural attractions, VIP lounges, chapels, business centres, beauty salons, and sports centres. At Polish airports this trend is just beginning to emerge, and the additional facilities are limited to trade, catering and basic services for passengers waiting for boarding. However, there appear also new facilities including beauty salons, children's play areas and chapels. At the world's largest airports already there can be found a wide range of specialized business, commercial, service, recreational and cultural facilities [Stangel 2014, p. 35].

It has been noticed that some airports are becoming destinations in themselves as not Amsterdam, but Schiphol, may be the destination for people who need close contact to do business together [Elliott et al. 2016]. As noted by J.D. Kasarda [2010], in the process of their development, airport-related areas attract new functions unrelated directly to aviation, but rather to the companies associated with it. As a consequence, airport-related areas attract features traditionally reserved for city centres such as leisure, recreation, culture and entertainment.

The emergence of tourism in a particular region, followed by its dynamic development, was an important impulse for the emergence of the aerotropolis, and thus the development of the network of air connections and modernization of existing airports [Chung, Whang 2011, pp. 1335-1340; Turton 2004, pp. 69-78]. The development of tourism located near the airport, of a tourist and entertainment nature, in a sense refers to the book entitled *Fantasy City*, where Hanningan [1998, p. 195] shows how American cities, looking for new opportunities for themselves in post-industrial economy, are transformed into places of entertainment, leisure and adventure.

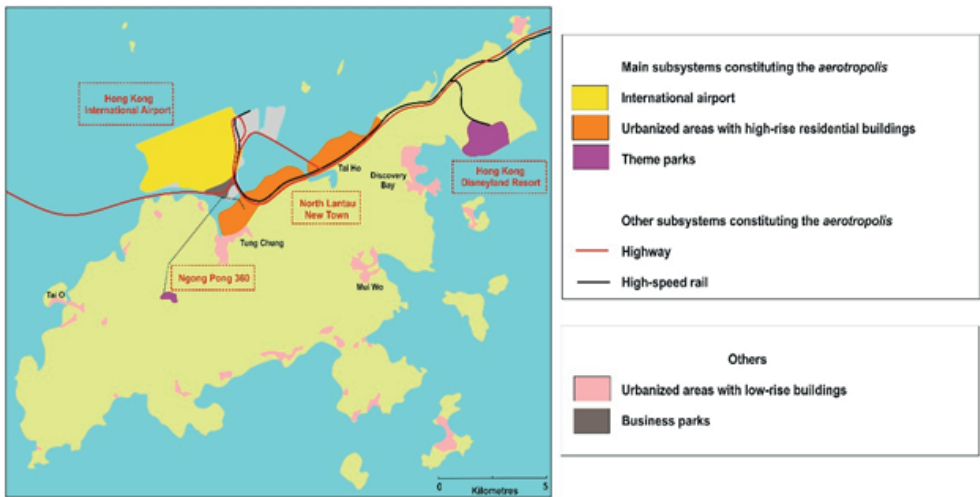
### 3. The concept of Tung Chung New Town

When the concept of the aerotropolis is referred to the transformation of geographical space and socio-economic changes related to Hong Kong International Airport, it should be initially noted that the spatial and functional system in the northern part of Lantau Island consists of four basic subsystems covering larger areas (Figure 1):

- Hong Kong International Airport,
- the town of Tung Chung (also known as Tung Chung New Town),

- Hong Kong Disneyland Resort,
- Ngong Ping 360.

Until the 1990s, Lantau Island, the largest (147.16 km<sup>2</sup>) of the islands which belonged to British Hong Kong at the time, was definitely located at the periphery of the territory. The majority of its inhabitants lived by sea fishing and the production of salt. Lantau's low level of socio-economic development was affected by its mountainous landscape, large afforestation and lack of road connections with other parts of Hong Kong (until 1997). At that time the only tourist places which were famous outside the island were the Buddhist Po Lin Monastery<sup>2</sup> and the Discovery Bay Golf Club, which was established in 1983 as a 18-hole golf course, and in June 1992 was expanded by nine more holes [*About Discover...* 2019]. As Lantau was valuable in terms of its nature, in 1978 about 50% of the island was protected with the designated Lantau North Country Park (24 km<sup>2</sup>) and Lantau South Country Park (56 km<sup>2</sup>) [*Lantau country commentary* 2013, p. 3].



**Fig. 1.** The main elements of the spatial development of Lantau Island

Source: A. Kowalczyk's own elaboration.

As mentioned above, the second basic subsystem constituting the aerotropolis which was established in Hong Kong, is the town of Tung Chung which is one of the *new towns* to have been built in Hong Kong at the time when it was owned by Great Britain.

<sup>2</sup> The Po Lin Monastery was founded in 1903 as the Tai Mao Pung Monastery. It was given its present name in 1924. A statue of Buddha stands 300 m from the monastery, which is an important pilgrimage site and a significant tourist attraction in Hong Kong [*Po Lin Monastery* 2019].

### 3.1. Tung Chung development plans

In 2007 the Hong Kong authorities decided on the expansion of Tung Chung New Town. According to the adopted Revised Concept Plan for Lantau, the town's population was to increase to 220,000. However, in the new plan, apart from housing development, a lot of emphasis was put on tourism development, the creation of office space, technical infrastructure and environmental protection. An important factor for undertaking planning work on the Tung Chung New Town project were the far-reaching plans for new investments partly going beyond Lantau Island including a bridge connecting Hong Kong with Macao and Zhuhai (in the People's Republic of China), a 9-kilometre bridge with the Tuen Mun – Chek Lap Kok highway (connecting the north-west of Hong Kong with Hong Kong International Airport), and, above all, the planned expansion of Hong Kong International Airport with a new runway [*Panel on...* 2014].

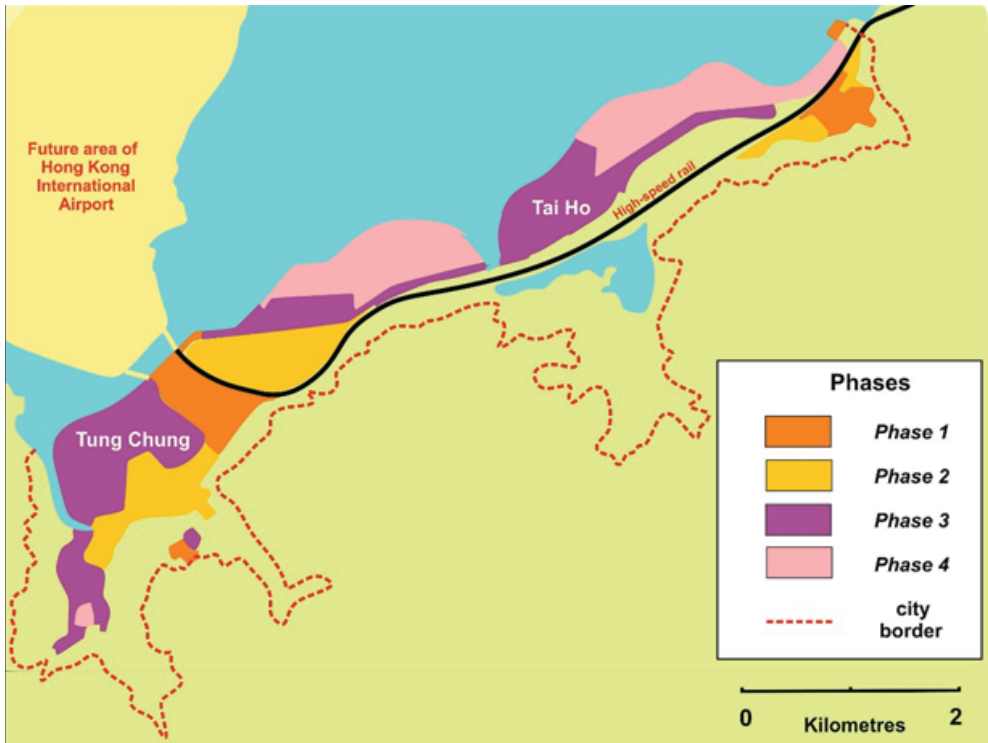
After several years of planning work, in June 2016 a spatial development plan for the northern coast of Lantau was published, called the Tung Chung New Town Extension Study. It consisted of two parts, called the Tung Chung East and Tung Chung West projects. In total, 245 hectares of land were to be covered by investment activities. The Tung Chung New Town Extension Study also provided for the creation of approximately 40,000 new jobs. According to the adopted schedule, the first construction works started at the end of 2017, and the first housing estates are to be completed in 2023 [*New towns...* 2017].

As part of the Tung Chung New Town Extension, 500,000 m<sup>2</sup> of office space is to be created (mainly in Tung Chung East), 155,000 m<sup>2</sup> of commercial space in large-scale facilities and 147,000 m<sup>2</sup> in smaller facilities, and 50,000 m<sup>2</sup> in hotels (*Tung Chung New Town Extension Study – provision of supplementary information requested by members, July 2015* 2015, p. 18). The investments related to trade, hotels, and dining are expected to generate 40,000 new jobs.

The plan to build a new town on Lantau Island had already been considered in the mid-1970s. In 1976, Discovery Bay in the eastern part of the island was chosen as the place for the future *new town*, which actually began to develop, however, outside the *new town* programme, accommodating up to 18,000 inhabitants (*Discovery Bay & outlying islands district information* 2017). However, Tung Chung in Lantau became the 'real' *new town*, that is, covered by the programme for building new towns, to be built only a dozen or so years later. At that time it was famous for the following attractions such as a fort and artillery battery from 1817 (Tung Chung Fort and Tung Chung Battery), the temples of Hau Wong (1765) and Tin Hau (1823), and also the Buddhist Lo Hon temple built in 1974 (south-west of the village).<sup>3</sup>

---

<sup>3</sup> *Tung Chung*, [https://en.wikipedia.org/wiki/Tung\\_Chung](https://en.wikipedia.org/wiki/Tung_Chung) (10.05.2017). Tin Hau Temple was located in the northeast of the island of Chek Lap Kok. In 1991 it was dismantled because of the construction of the new airport, and in 1994 it was rebuilt in Chek Lap Kok New Village, which was built at the entrance to one of the valleys south of Tung Chung.



**Fig. 2.** Planned phases of the development of North Lantau New Town as agreed at the beginning of the 1990s

Source: A. Kowalczyk's own elaboration.

According to the adopted plan (Figure 2), the construction of North Lantau New Town was to be implemented in three phases, but initially there were plans to start investments in Tung Chung. The first phase (*Phase 1*) envisaged the construction of a multi-functional administration and service centre and residential districts south of the mentioned channel separating Lantau Island from the constructed airport. The channel and its adjacent areas were conceived as a barrier separating Tung Chung from the noise associated with Hong Kong International Airport. At the same time, the construction of technical infrastructure in Siu Ho Wan began. The preparatory work comprising Phase 1 had already been completed in 1994. In January 1997, all planned investments in technical infrastructure were completed, and towards the end of the year the first public residential buildings were built including five blocks forming Yu Tung Court with 2,640 flats and three blocks comprising Fu Tung Estate with 1,664 flats [*Public housing...* 2017], Fu Tung Shopping Centre, and a road bridge connecting Tung Chung with Hong Kong International Airport. It served as the second bridge because the first road and rail bridge had been completed along with the construction of the North Lantau Highway (*Tung Chung* 2017). This meant the

creation of a *new town* with initially 15,000 inhabitants who primarily worked at the newly-opened airport. Shortly afterwards, in 1998, the construction of eight blocks forming a private residential estate was completed, called Tung Chung Crescent, with 2158 flats,<sup>4</sup> and located next to a train station (MTR).<sup>5</sup>

In the Phase 1 development, a bridge was also built (already the second, the previously built bridge consisted of a highway) connecting Tung Chung centre with Hong Kong International Airport, and a network of streets and roads was created and partly built. That work was completed in January 1997. At that time the population of Tung Chung reached 18,000 [*Tung Chung New Town* 2017], but it was still expected that in 2011 the town would accommodate 320,000 inhabitants (*Tung Chung New Town (Phase 1)* 2019).

In January 1997, work on land reclamation was also completed, marking the beginning of the transition to the second phase (*Phase 2*), which covered areas east of the *Phase 1* development area. The activities were called *Phase 2A* and, in May 1997 the construction of technical infrastructure, residential houses and service facilities began on the newly acquired areas (in total 350,000 m<sup>2</sup> were reclaimed under *Phase 2*). The development was finally completed in May 2000. At the same time, *Phase 2B* project development had already begun in November 1996 and was completed in February 2001, covering an area of 270,000 m<sup>2</sup>.

By completing that phase of town construction, the population of Tung Chung increased to 67,000 [*Tung Chung* 2019] or (according to other sources) to 69,000 [*Tung Chung New Town* 2017]. This was possible mainly owing to the completion of the first phase of the Yat Tung Estate development consisting of 13 blocks with 5597 public rental flats [*Public housing...* 2017]. Yat Tung housing estate was established south-west of Tung Chen, which was formerly a small rural fishing village. The Yat Tung urban complex also involved the first phase of the Yat Tung Shopping Centre construction which was completed in March 2001, with the second phase in May 2002 [*Tung Chung* 2019]. It should be mentioned that the Yat Tung Shopping Centre (and the abovementioned Fu Tung Shopping Centre) were not the only large-scale shopping facilities in Tung Chung. In the spring of 2000, the Citygate shopping centre opened in the centre of the newly emerging town, adjacent to the rapid Tung Chung transit line station, which was expanded a few years later.<sup>6</sup>

---

<sup>4</sup> *Tung Chung Crescent building information* [2017]. In the following years (already in Phase 2), Tung Chung Crescent was expanded to eight blocks with 2578 flats.

<sup>5</sup> *Tung Chung* [2019]. Tung Chung Crescent estate was built by a consortium of developers including Hang Lung Development Co. Ltd., Henderson Land Development Co. Ltd., New World Development Ltd., Sun Hung Kai Properties Ltd. and Swire Properties, as well as the company which owned a public transport network – MTR Corporation. The same consortium developed another private residential estate called Seaview Crescent. However, the third large Coastal Skyline residential estate was built by a consortium of developers including HKR International Ltd., Hong Leong Holdings Ltd. and Reco Tung Chung Pte. Ltd. and the aforementioned MTR Corporation.

<sup>6</sup> It should be added that the development of Tung Chung was not the only major investment on Lantau at that time. In 2000 the Discovery Bay Tunnel was completed, which greatly improved



The Citygate office building, called One Citygate (a 9-storey building) consists of 14,990 m<sup>2</sup> office space and an underground car park for 1,100 cars. Hong Kong Airlines has its head office here, as does Hong Kong Express Airways Ltd. a low-cost airline, and Metrojet Ltd., a company providing aviation services (including charter and maintenance services).

In early March 1999, reclamation works north-east of the *Phase 1* development commenced as part of the *Phase 3A* development. They were completed in April 2003 and recreational areas were created on the reclaimed land (260,000 m<sup>2</sup>) and a 1.5 km-long waterfront was built to protect Tung Chung from high waves. As part of the *Phase 3A* development, a construction of new housing estates to accommodate 22,000 people was also completed [*Tung Chung...* 2017]. Under the completion of those investments, the area with new housing developments and technical infrastructure occupied 155 ha [*Provision of Land...* 2010]. For several years, Tung Chung experienced development stagnation. The situation changed in 2018, when two new public housing estates were completed including the Mung Tung Estate (four buildings with 3866 flats) and the Ying Tung Estate (also four buildings with 3580 flats) [*Public housing...* 2017]. The former was created in the south-western tip of Tung Chung (in the vicinity of the *Phase 3* development areas), and the latter to the north-east of the centre (within the *Phase 3* development).

### 3.2. The Hong Kong Disneyland Resort

In 1998 the American Walt Disney Park and Resorts company offered the Hong Kong authorities to create a theme park based on the idea of Disneyland, created in the 1950s. The proposal was adopted in 1999 and the same year Hong Kong International Theme Parks Ltd. (HKITP) was created, with Walt Disney Park and Resorts holding a 43% equity stake. According to the adopted plan, the first phase included a projected 10-million annual visitor theme park and 2,100 hotel rooms, as well as the accompanying infrastructure (both technical, retail and dining, commercial, entertainment, and sports and leisure), which was estimated to create a total of 18,000 jobs at opening and 36,000 jobs over the following 20 years. According to assessments made by Hong Kong authorities, the Hong Kong Disneyland Resort was expected to generate 6% of GDP in benefits to Hong Kong over 40 years of operation [*Hong Kong Disneyland...* 2019].

In July 2000 the first engineering works began on land reclamation near the island of Ma Wan (near the eastern end of Lantau). The construction of the theme park itself had started in January 2003 and was completed in September 2005 (*Hong Kong Disneyland Resort* 2019).

In 2012 the Hong Kong Disneyland Resort authorities announced their plans to build four more hotels (one large and three smaller) to be connected by a local tram line. This plan had begun to be implemented in January 2015, and in April

transport between the north coast of the island (and the rest of Hong Kong) and the eastern towns of Discovery Bay and Mui Wo [*Siu Ho Wan* 2017].

2017 the 750-room Disney Explorers Lodge hotel opened, which was jointly built by The Walt Disney Company (42.5%), the Hong Kong government (42.5%) and Hong Kong Disneyland (15.0%). It is worth mentioning that also in 2015, the Hong Kong government announced negotiations on the further expansion of Hong Kong Disneyland (to be completed in 2020) (*Hong Kong Disneyland Resort* 2017), but soon after the Hong Kong Disneyland Resort reported losses due to, among others, a 9.3% fall in annual attendance in 2015 [*TEA/AECOM 2015...2015*, p. 13, 49].

The precarious situation of Hong Kong Disneyland Resort continued in the following months. This may be demonstrated in May 2017 when after several weeks of negotiations The Walt Disney Company's proposal to invest alongside the Hong Kong government in the modernisation of the existing facilities was rejected by the Legislative Council of the Hong Kong Special Administrative Region (Sun 2017). Although the government eventually began providing financial assistance to the Hong Kong Disneyland Resort, it continued to suffer losses [Cheng 2018].

Since the beginning, the Hong Kong Disneyland Resort has been owned and managed by Hong Kong International Theme Parks Ltd., whose shareholders include the Hong Kong Government (52% stake, 57% until 2009) and The Walt Disney Company (48% stake, 43% until 2009) [*Hong Kong Disneyland Resort* 2017].

As already mentioned, the Hong Kong Disneyland Resort is built on reclaimed land (a total of 1.3 km<sup>2</sup>) near Penny's Bay, in the north-east of Lantau Island. Alongside the Hong Kong Disneyland theme park, it contains the Hong Kong Disneyland Hotel (400 rooms), the Disney's Hollywood Hotel (600 rooms) and the Disney Explores Lodge (750 rooms), as well as several dining and entertainment, and recreational facilities. In the spring of 2017 there were plans to build one more hotel on the area between the Hong Kong Disneyland Hotel and the Disney Explores Lodge.<sup>7</sup>

According to 2016 figures, 39% of visitors included residents of Hong Kong, 36% came from mainland China, and 25% were foreigners [*Hong Kong Disneyland reports... 2019*]. This meant that, as initially assumed by the Hong Kong Disneyland Resort, it performs a function going far beyond the borders of Hong Kong, but also the whole of China, and thus creates a significant multiplier effect not only for the aerotropolis on Lantau Island and Hong Kong, but for the economy of the People's Republic of China.

### 3.3. Ngong Ping 360

The idea of a cable car system linking the town of Tung Chung with the nearby Ngong Ping plateau was adopted by the Hong Kong Tourism Commission in 2000. The main objective of the investment, called Ngong Ping 360, was to treat it as one

---

<sup>7</sup> Between 2015 and 2016 the occupancy rates for the hotels belonging to the Hong Kong Disneyland Resort were close to 80% (*Hong Kong Disneyland reports second-highest attendance from international guests and record per capita park spending* 2017), which provided real circumstances for taking action to build a new hotel. However, up to August 2019, another hotel had not been built [*Hong Kong Disneyland Resort* 2017].

of Hong Kong's leading tourist destinations. Construction of Ngong Ping 360 began in 2001 with a schedule to open at the beginning of 2006 [Ngong Ping 360 2019]. A detailed design for the cable car system linking the town of Tung Chung with the nearby Ngong Ping plateau was announced in 2002.

As planned, the MTR Corporation was to build a 5.5 km cable car system by the summer of 2005 to boost tourism in the area of the Po Lin Buddhist monastery and the 34-metre Buddha statue.<sup>8</sup> The project also included the construction of Ngong Ping Village with a street called 'tourist corridor' full of shops, food outlets, art galleries (covering the total area of 6000 m<sup>2</sup>, as planned, where 300 people could find employment) and a 18,600 m<sup>2</sup> of public space between the upper station of the cable car line and the Po Lin Monastery [Ngong Ping 2019]. As the construction works of the cable car system had started only at the beginning of 2004, its completion was postponed and the investment was finally completed in June (and not in January) 2006 (however, it was not officially opened until November that year). The gondola lift itself was formerly known as the Ngong Ping 360 Skyrail, and in April 2005 it acquired the name of the Ngong Ping 360 [Ngong Ping 360 2019]. It was originally operated by a company founded by the MTR Corporation and the Australian company, Skyrail-ITM [Ngong Ping 2019]. After the latter was removed from the project, Ngong Ping 360 belongs to the MTR Corporation, Hong Kong's most important public transport corporation [Ngong Ping 360 2019].

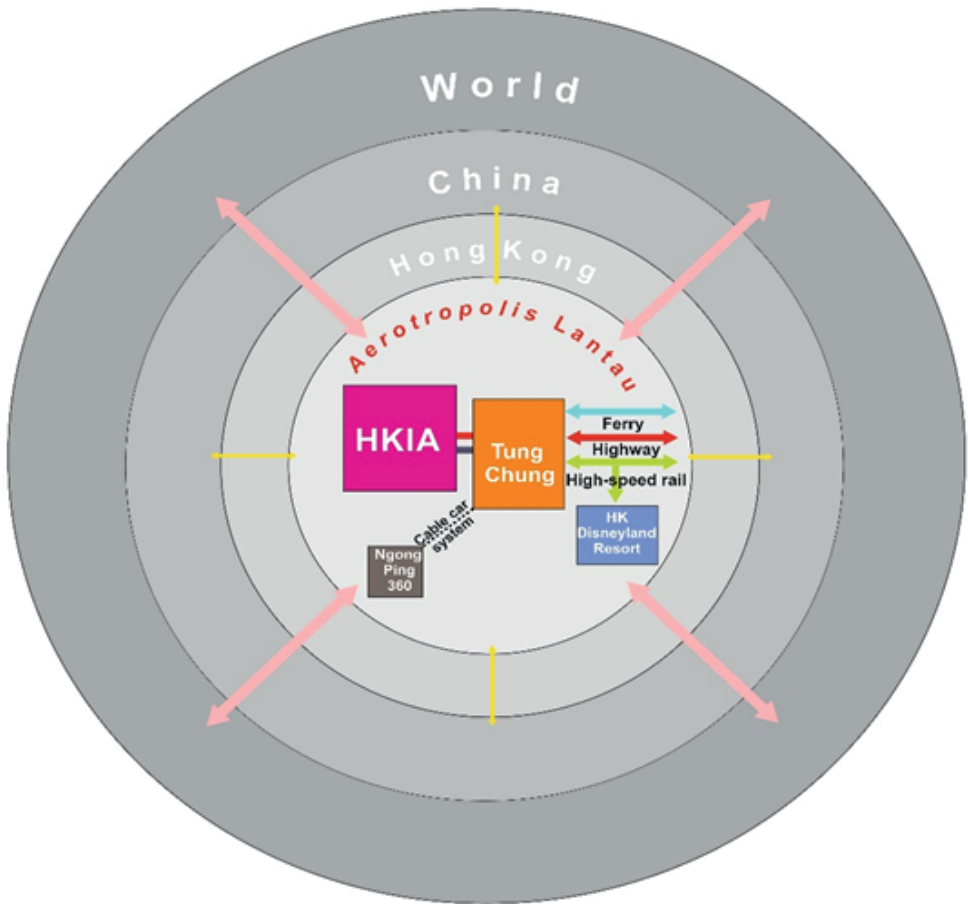
At this point it is worth elaborating on Ngong Ping Village. It occupies an area of 15,000 m<sup>2</sup> and mirrors the cultural traditions of southern China, especially Lantau Island. The shops, art galleries and restaurants featuring traditional Chinese architecture and design offer attractions including lectures devoted to Buddhism (*Walking with Buddha*), children's theatre (*Monkey's Tale Theatre*), tearoom (*Ngong Ping Tea House*) and an exhibition of cable cars from countries including Switzerland, Austria, Italy, France, Germany, Brazil and China [Ngong Ping 360 2019].

## 4. Conclusion

The aerotropolis is a modern urban structure, which, due to its location, has become attractive for many industries, including the tourism industry. It is favoured by interesting and even futuristic architecture with a variety of tourist services. The urban layout reminiscent of the aerotropolis on Lantau Island performs both endogenous (relative to Hong Kong) and exogenous (relative to the rest of China and the world) functions (Figure 3).

---

<sup>8</sup> The Buddha statue called Tian Tan Buddha or Big Buddha, was completed in 1993 and is one of the tallest Buddha statues in China (34 m tall, weighing 250 tons). 268 steps lead to the statue. A significant proportion of the pilgrims worshipping Buddha move along the steps on their knees. At a distance of 400 m from the entrance to the sanctuary, there is the terminus of the Ngong Ping 360 cable car ride [Tian Tan Buddha 2019].



**Fig. 3.** Internal and external connections of the aerotropolis on Lantau Island in a model approach

Source: A. Kowalczyk's own elaboration.

Concluding the above considerations, it is worth drawing attention to some recent events which may have a significant impact on whether a real aerotropolis will actually be created on Lantau Island.

First of all, further plans related to the development of the town of Tung Chung speak in its favour. Adopted in 2003, the *Tung Chung New Town Extension (TCNTE)* program was finally approved by the authorities of Hong Kong after numerous protests from ecological organizations [Wong 2014; 2018, *Project Background...* 2019] and in December 2017 construction work commenced, to be completed in 2023. Under the TCNTE project, 49,600 flats for 145,500 inhabitants will be built in the areas called Tung Chung East and Tung Chung West. It is expected that after project completion, Tung Chung will accommodate 269,500 inhabitants (*CEDD*

*signs contract for Tung Chung New Town Extension – reclamation and advance works (with photos) 2018).*

The extension plan of Hong Kong International Airport is the other argument in favour of the transformation of Lantau Island into a spatial and functional system in line with the aerotropolis concept. Although, according to the project adopted in 2011 [*Hong Kong International Airport 2019*], only one major investment was completed by 2019 (a 5200-metre double fuel pipeline for the airport) (*New aviation fuel pipelines set world record 2019*), it can be assumed that in subsequent years further projects will be implemented, such as an aviation sleeve capable of servicing passengers of the largest aircraft (the T1 Annex project which was to be completed in 2019), a 12-storey office building, and, above all, new runways planned to be put into service in 2024 [Wong 2018].

The completion of the bridge connecting Hong Kong International Airport with the Macao Special Region and the city of Zhuhai (located in the People's Republic of China) in autumn 2018 is also an argument in favour (although not so obvious).

When considering the future of Hong Kong International Airport in the context of the aerotropolis, there may be circumstances which can be considered as arguments against. One of them is the above mentioned building of the bridge to Macao and Zhuhai, because it can be assumed that after landing some passengers to Hong Kong International Airport do not have to stay on Lantau Island or visit Victoria and Koulun, but head straight for Macao and the mainland of China (e.g. to Guanzghou), yet other arguments against it are much more serious.

First of all, it should be remembered that Hong Kong's geopolitical and economic role has been decreasing over the years. The growing economic links between the People's Republic of China and the world economy mean that Hong Kong is no longer a kind of 'bridge' between the Chinese economy and the rest of the world. Foreign counterparties do not have to, for example, use the intermediation of banks and Hong Kong ports as they can deal with matters related to their business directly in Beijing, Shanghai, Guangzhou or Shenzhen. The same applies to Chinese entrepreneurs who are increasingly visiting Europe, Australia and the United States. Although Hong Kong International Airport is still at the forefront (9th place for the number of passengers in 2018, 72,900,000<sup>9</sup>), since 2005 it has been ahead of Beijing Capital International Airport (100,983,290 passengers, 2nd place in the world) (*Beijing Capital International Airport 2019*), and in 2018 it was also overtaken by Shanghai Pudong International Airport (74,006,331 passengers, 8th place) [*Shanghai Pudong International Airport 2019*]. Moreover, the list of the world's largest airports includes Guangzhou airport located in the neighbouring part of the People's Republic of China (13th place in 2018) and Shenzhen airport

---

<sup>9</sup> *About us. Hong Kong International Airport (2019)*. According to Wikipedia, in 2018 the number of passengers to Hong Kong International Airport accounted for 74,700,000 visitors, which put it before Shanghai Airport [*Hong Kong International Airport 2019*].

(32th place). All that means that Hong Kong International Airport may be less relevant as both a destination airport and a 'hub' in the future.

Secondly, the financial problems Hong Kong Disneyland Resort is facing mean that, with time, investments related to the creation of the international airport on Lantau Island ceased to be attractive both for tourists (mainly the Chinese from mainland China) and the residents of Hong Kong. This happened, among others, due to the dynamic development of the entertainment sector in the People's Republic of China, as exemplified by the opening of the Shanghai Disneyland Park in 2016. In 2018, it attracted 11,800,000 visitors [*Shanghai Disneyland Park* 2019], compared with 6,700,000 visitors to Hong Kong Disneyland [*Hong Kong Disneyland* 2019].

The slowdown in the construction of new hotels in Tung Chung and its surroundings may also be a sign of entering a recession phase.

Last but not least, the political tensions in Hong Kong which taken place in recent years (since 2014), and clearly intensified in the summer of 2019, may be dangerous for the political status of the Hong Kong Special Administrative Region and its economy. The limitation of the autonomy and an increase of political integration with the People's Republic of China may have a negative impact on Hong Kong's economy, and thus put projects aimed at creating the aerotropolis on Lantau Island into question.

## Bibliography

- About Discover Bay Golf Club*, <http://www.dbgc.hk/icms/template?series=26> (27.08.2019).
- About Us. Hong Kong International Airport*, <https://www.hongkongairport.com/en/about-us> (27.08.2019).
- Beijing Capital International Airport*, [https://en.wikipedia.org/wiki/Beijing\\_Capital\\_International\\_Airport](https://en.wikipedia.org/wiki/Beijing_Capital_International_Airport) (28.08.2019).
- Bogucka A., 2010, *Przystosowanie bazy turystycznej na potrzeby osób niepełnosprawnych*, *Economy and Management*, vol. 3, p. 93-108.
- CEDD signs contract for Tung Chung New Town Extension – reclamation and advance works (with photos)*, 2018, The Government of the Hong Kong Special Administrative Region. Press Releases, January 10, <https://www.info.gov.hk/gia/general/201801/10/P2018011000659.htm> (28.08.2019).
- Cheng K., 2018, *Gov't-backed Hong Kong Disneyland sees net loss of HK\$345 million in 2017 – third year in the red*". HKFP – Hong Kong Free Press, 20 February 2018, <https://www.hongkongfp.com/2018/02/20/govt-backed-hong-kong-disneyland-sees-net-loss-hk345-million-2017-third-year-red> (28.08.2019).
- Chung J.Y., Whang T., 2011, *The impact of low-cost carriers on Korean island tourism*, *Journal of Transport Geography*, vol. 19, no. 6, pp. 1335-1340.
- Discovery Bay & outlying islands district information*, <http://www.executivehomeshk.com/residential-districts/discovery-bay-outlying-islands> (28.08.2019).
- Dudek-Mańkowska S., Fuhrmann M., 2009, *Centra handlowe trzeciej generacji w Warszawie jako nowe produkty turystyczne*, [in:] Stasiak A. (ed.), *Kultura i turystyka – wspólnie zyskać!*, Wyd. WSTH, Łódź, pp. 269-282.

- Elliott A., Pitt N., Radford D., Urry J., 2016, *Globalisations utopia? On airport atmospherics, Emotion, Space and Society*, vol. 19, pp. 13-20.
- Fuhrmann M., 2008, *Znaczenie turystyczne centrów handlowych nowej generacji w Warszawie*, *Turystyka i Hotelarstwo*, 14, Wyd. WSTH, Łódź, pp. 135-144.
- Gierczak-Korzeniowska B., 2017, *Aerotropolis i Airport City jako nowy rodzaj przestrzeni turystycznej*, *Prace i Studia Geograficzne*, vol. 62.4, Wydział Geografii i Studiów Regionalnych Uniwersytetu Warszawskiego, Warszawa, pp. 7-28.
- Hall D., 2005, *Transport Tourism. Travelling through Heritage and Contemporary Recreation*, [in:] *Niche Tourism. Contemporary Issues, Trends and Cases*, M. Novelli (ed.), Elsevier, Oxford, pp. 89-98.
- Hanningan J., 1998, *Fantasy City. Pleasure and Profit in the Postmodern Metropolis*, Routledge, London.
- Hirsch M., 2018, *How Can We Build Attractive Neighborhoods Around the Airport*, <https://airporturbanism.com/articles> (21.08.2019).
- Hong Kong Disneyland*, [https://en.wikipedia.org/wiki/Hong\\_Kong\\_Disneyland](https://en.wikipedia.org/wiki/Hong_Kong_Disneyland) (28.08.2019).
- Hong Kong Disneyland reports second-highest attendance from international guests and record per capita park spending*, February 20, 2017, <http://news-en.hongkongdisneyland.com/PressReleases/PressReleaseDetail.aspx?AssetId=ffb70379-87a7-4b86-97a0-14629c845ce0>, 28.08.2019).
- Hong Kong Disneyland Resort*, [https://en.wikipedia.org/wiki/Hong\\_Kong\\_Disneyland\\_Resort](https://en.wikipedia.org/wiki/Hong_Kong_Disneyland_Resort) (10.05.2017).
- Hong Kong International Airport*, [https://en.wikipedia.org/wiki/Hong\\_Kong\\_International\\_Airport](https://en.wikipedia.org/wiki/Hong_Kong_International_Airport) (28.08.2019).
- Kasarda J.D., 2010, *Airport Cities and the Aerotropolis: The Way Forward*, [in:] J.D. Kasarda (ed.), *Global Airport City Insight Media*, London, pp. 1-31.
- Kasarda J.D., 2011, *The Aerotropolis and Global Competitiveness*, *Diplomatic Courier*.
- Kostecka J., 2007, *Manufaktura – nowa przestrzeń turystyczno-rekreacyjna Łodzi*, *Turystyka i Hotelarstwo*, 12, Wyd. WSTH, Łódź, pp. 9-36.
- Lantau Country Commentary*, 2013, Hong Kong Tourism Board, b.m.w., [http://partnet.hktb.com/filemanager/en/content\\_510/2013 Lantau Island Commentary \(Eng\).pdf](http://partnet.hktb.com/filemanager/en/content_510/2013%20Lantau%20Island%20Commentary%20(Eng).pdf) (10.05.2017).
- New Aviation Fuel Pipelines Set World Record*, 01.08.2018, Three Runway System, Hong Kong International Airport, <https://www.threerunwaysystem.com/en/overview/project-updates/20180801-new-aviation-fuel-pipelines-set-world-record> (28.08.2019).
- New towns, new development areas and urban developments*, *Civil Engineering and Development Department, The Government of the Hong Kong Special Administrative Region*, [http://www.cedd.gov.hk/eng/publications/fact\\_sheet/doc/fact\\_hk.pdf](http://www.cedd.gov.hk/eng/publications/fact_sheet/doc/fact_hk.pdf) (10.05.2017).
- Ngong Ping*, [https://en.wikipedia.org/wiki/Ngong\\_Ping](https://en.wikipedia.org/wiki/Ngong_Ping) (27.08.2019).
- Ngong Ping 360*, [https://en.wikipedia.org/wiki/Ngong\\_Ping\\_360](https://en.wikipedia.org/wiki/Ngong_Ping_360) (27.08.2019).
- Nowacki M., 1999, *Atrakcje turystyczne, dziedzictwo i jego interpretacja – jako produkt turystyczny*, *Problemy Turystyki*, t. XXII, vol. 2, pp. 5-12.
- Panel on development meeting on 28 October 2014. Updated background brief on Tung Chung New Town Extension Study*, 2014, LC Paper no. CB(1)89/14-15(06), Legislative Council, The Government of the Hong Kong Special Administrative Region, <http://www.legco.gov.hk/yr14-15/english/panels/dev/papers/dev20141028cb1-89-6-e.pdf> (10.05.2017).
- Po Lin Monastery*, [https://en.wikipedia.org/wiki/Po\\_Lin\\_Monastery](https://en.wikipedia.org/wiki/Po_Lin_Monastery) (27.08.2019).
- Płocka J., 2002, *Wybrane zagadnienia z zagospodarowania turystycznego*, cz. I, Wyd. Centrum Kształcenia Ustawicznego, Toruń.
- Project Background. Tung Chung New Town Extension*, <https://tung-chung.hk/about.php> (28.08.2019).

- Provision of Land and Infrastructure*, April 2010, Civil Engineering and Development Department, The Government of the Hong Kong Special Administrative Region, Kowloon, [https://www.gov.hk/en/about/abouthk/factsheets/docs/towns&urban\\_developments.pdf](https://www.gov.hk/en/about/abouthk/factsheets/docs/towns&urban_developments.pdf) (10.05.2017).
- Public housing estates on Lantau Island*, [https://en.wikipedia.org/wiki/Public\\_housing\\_estates\\_on\\_Lantau\\_Island](https://en.wikipedia.org/wiki/Public_housing_estates_on_Lantau_Island) (10.05.2017).
- Shanghai Disneyland Park*, [https://en.wikipedia.org/wiki/Shanghai\\_Disneyland\\_Park](https://en.wikipedia.org/wiki/Shanghai_Disneyland_Park) (28.08.2019).
- Shanghai Pudong International Airport*, [https://en.wikipedia.org/wiki/Shanghai\\_Pudong\\_International\\_Airport](https://en.wikipedia.org/wiki/Shanghai_Pudong_International_Airport) (28.08.2019).
- Siu Ho Wan*, [https://en.wikipedia.org/wiki/Siu\\_Ho\\_Wan](https://en.wikipedia.org/wiki/Siu_Ho_Wan) (10.05.2017).
- Stangel M., 2014, *Airport City – strefa okololetniskowa jako zagadnienie urbanistyczne*, Helion.
- Sun N., 2017, *Hongkongers Will Have to Pay HK\$5.45 Billion for Major Expansion of Disneyland. Approval of Government's Controversial Funding Application Comes Despite Demands by Lawmakers for a Fairer Deal with Walt Disney Company*, South China Morning Post. Edition: international, 2 May, 2017, <http://www.scmp.com/news/hong-kong/economy/article/2092336/hongkongers-will-have-pay-hk545-billion-disneyland-facelift> (27.08.2019).
- TEA/AECOM 2015. Theme Index and Museum Index: the global attractions attendance report*, Themed Entertainment Association (TEA), Burbank, CA.
- Tian Tan Buddha*, [https://en.wikipedia.org/wiki/Tian\\_Tan\\_Buddha](https://en.wikipedia.org/wiki/Tian_Tan_Buddha) (27.08.2019).
- Tung Chung*, [https://en.wikipedia.org/wiki/Tung\\_Chung](https://en.wikipedia.org/wiki/Tung_Chung) (27.08.2019).
- Tung Chung Crescent Building Information*, <http://www.executivehomeshk.com/properties/outlying-islands/tung-chung-crescent/6002> (10.05.2017).
- Tung Chung New Town*, Civil Engineering and Development Department, The Government of the Hong Kong Special Administrative Region, [http://www.cedd.gov.hk/eng/achievements/regional/regi\\_tungchung.html](http://www.cedd.gov.hk/eng/achievements/regional/regi_tungchung.html) (10.05.2017).
- Tung Chung New Town Extension Study – provision of supplementary information requested by members, July 2015*, Development Bureau, Planning Department, Civil Engineering and Development Department, The Government of the Hong Kong Special Administrative Region, <http://www.legco.gov.hk/yr14-15/english/panels/dev/papers/dev20141203cb1-1132-1-e.pdf> (10.05.2017).
- Tung Chung New Town (Phase 1)*, <http://www.info.gov.hk/archive/napco/p-tung.html> (27.08.2019).
- Turton B., 2004, *Airlines and Tourism Development: the Case of Zimbabwe in Tourism and Transport: Issues and Agenda for the New Millennium*, [in:] *Advances in Tourism Research*, eds. L. Lumsdon, S.J. Page, Series, Elsevier, Amsterdam-San Diego-Oxford- London, pp. 69-78.
- Wong O., 2014, *Reclamation plan at Lantau's Siu Ho Wan may be scaled down, government says. It's to preserve dolphin habitat, official claims; but expert says that's not the real reason*, South China Morning Post. Edition: international, 22 August, 2014, <https://www.scmp.com/news/hong-kong/article/1578665/reclamation-plan-lantau-siu-ho-wan-may-be-scaled-down-government> (27.08.2019).
- Wong M.H., 2018, *The future of Hong Kong International Airport*, CNN Travel, 13th September 2018, <https://edition.cnn.com/travel/article/hong-kong-international-airport-future/index.html> (27.08.2019).
- Yat Tung (I) Estate, Islands, New Territories West*, <http://www.housingauthority.gov.hk/en/global-elements/estate-locator/detail.html?propertyType=1&id=2838> (27.08.2019).