



# **Almaty International Airport Expansion**

Evaluation of Alternatives Report

June 2022



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# 1 Introduction

## 1.1 Background

TAV Airports Holding Co. (hereafter referred to as 'TAV'), alongside partner VPE Capital Ltd, purchased Almaty International Airport ('ALA'), Kazakhstan in 2021. Under the purchase, a new terminal is proposed as part of the airport terminal expansion works, alongside associated infrastructure development at the airport; these works comprise "the Scheme".

Mott MacDonald Ltd has been appointed by JSC Almaty International Airport to undertake an Evaluation of Alternatives Report (this report) to review and evaluate the options available to locate the VIP terminal building within the context of the Scheme. Mott MacDonald has also worked closely with TAV on this work.

The Scheme proposes to increase terminal capacity by constructing a new international terminal; however, the current proposed location of the new international terminal conflicts with an existing building on site, known as the 'VIP terminal building'. This building is noted as a building of historic interest. This report reviews options that have been considered for the VIP terminal building with an aim to try to minimise heritage impacts whilst also enabling the development of the new airport terminal, with a view to economic considerations in both construction and operation phases.

## 1.2 Purpose of this Report

The purpose of this report is to identify and evaluate the spatial options available to locate a new international terminal at ALA and subsequent options relating to the VIP terminal building location. Chapter 2 presents a long list of potential scenarios in the context of the VIP terminal building that have been identified following a design workshop with Mott MacDonald environment, heritage and stakeholder specialists, Almaty Airport's Community Liaison Officer (CLO), TAV Construction engineering leads, TAV Construction architecture specialists, and TAV environmental specialists. These scenarios are high level concepts which have been evaluated in greater detail in Chapter 3.

In evaluating each of the options for the VIP terminal building, the following criteria categories have been considered for both adverse and beneficial impacts:

- Impacts to cultural significance - consideration of the direct physical impacts to the VIP terminal building and potential changes in its spatial context/ setting which impact its cultural significance (termed heritage value in the ESIA).
- Constructability - consideration of construction cost, programme, effects, and the overall ease of construction i.e., construction vehicle access, proximity to other structures/buildings.
- Operational suitability - consideration to the functionality of the VIP terminal building and the functionality of the airport as a whole. Consideration of the cost associated with operation, where applicable.
- Socio-economic benefits – consideration to the socio-economic benefits associated with the development.

A combination of qualitative analysis and professional judgement has been applied in determining which options are suitable to be taken forward following evaluation. Chapter 4 presents the short list of options to be taken forward to stakeholder consultation. Following this stakeholder consultation, a preferred option will be selected which will form the final design for the Scheme.

### 1.2.1 Need for the Scheme

Almaty airport is a major international airport in Kazakhstan, which currently serves more than 34 airlines, including hub operations for Air Astana. Current aspirations from TAV are to expand the airport capacity in line with forecast increase in passenger numbers. In 2019, the airport recorded 6.43 million passengers, 1.2 million tonnes of cargo and 60,055 aircraft movements.

The impact of the Covid-19 pandemic has led to a global downturn in air passenger traffic since the ADP Ingenierie study. Almaty airport's revised passenger data (TAV, 2020) suggest that, incorporating Covid-19 impacts, 10 million passengers will be reached by 2032, with 2019 passenger numbers reached again before 2024, when the expanded terminal facilities will be needed.

An Expansion Feasibility Study was completed by ADP Ingenierie in May 2019 on behalf of TAV to identify the general order of magnitude for the capital expenditure for the terminal expansion, as reported by Waterman in their Environmental and Social Due Diligence<sup>1</sup> of the airport and the Scheme (September 2020). Waterman reports that this study describes the current terminal capacity as limiting potential growth at Almaty airport.

The new passenger terminal size requirements are based on a peak hour international traffic forecast at 1,600 air traffic movements (ATMs) and 1,200 ATMs for domestic flights. TAV has indicated that the area required for the international building is approximately 48,000m<sup>2</sup> and approximately 30,000m<sup>2</sup> for the domestic building. The current terminal is currently utilised for both domestic and international flights. The terminal is 30,370m<sup>2</sup>; therefore, remodelling of this available space for domestic use is possible. In 2019, before the Covid-19 pandemic, the existing terminal was reaching capacity and so expanded facilities were identified as being required.

The proposal for a new international terminal will accommodate up to eight million international passengers per year, allowing the existing terminal to also serve up to eight million domestic passengers per year, giving a total annual passenger capacity of up to 16 million passengers per year.

### 1.3 New international terminal locations

The location of the new international terminal has a direct bearing on the spatial options available in the context of the VIP terminal building. As such, consideration was given to proposed new international terminal locations, as outlined below.

Four locations were shortlisted, as shown in Figure 1.1. A summary of each location is provided along with any corresponding rationale as to the feasibility of taking any of these options forward, to feed into the VIP terminal building location evaluation.

Other locations within the airport boundary beyond the four presented here were also considered; however, the existing space is currently occupied by ancillary structures such as the fuel farm or wastewater treatment plant, which preclude locating the terminal in these areas. Other areas close to the runways present the same operational challenges and would also require construction of new aprons and taxiways. The operational issues raised therefore remain for all alternative locations within the wider airport boundary, as such alternative locations were not considered further given none have any advantage over the four locations considered below.

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<sup>1</sup> Waterman, 2020. "Project Apple: Almaty International Airport, Environmental and Social Due Diligence".



**Figure 1.1: Proposed new international terminal locations**



Source: TAV, 2020

### 1.3.1 Location 1.1: International terminal located in the helicopter hangar/factory

This location would see the new passenger terminal located in the existing helicopter hangar/factory. This area of land is currently used for helicopter manufacture and refurbishment, primarily for military use. A replacement location and factory infrastructure would be needed within the airport area to allow for continued access to the airfield, with the cost of moving this high and disruptive to ongoing airport operations. This would likely require land acquisition, require consent, and need to manage environmental and social impacts. This option has significant programme implications and would delay construction whilst an alternative location for the hangar/factory was found, and factory infrastructure consented and constructed.

Operationally, it is not desirable to have passengers moving externally across the airport, from the domestic terminal to a new international passenger terminal, as the existing VIP terminal building could act to block the connection route.

This location would retain the VIP terminal building in its current place and with no works proposed to modify the structure in any way. There would be no adverse physical impact to the VIP terminal building. This location would alter the setting of the VIP terminal building due to the construction of a new passenger terminal building where the existing helicopter hangar/factory is located (as defined in the heritage statement, report number 100107121-003). Although the VIP terminal building's setting would be altered it would not adversely impact its cultural significance. The VIP terminal building would continue to maintain a relationship with the culturally significant elements of its spatial context including the airport runway and Mailin Street. Therefore, overall there would be no impact to the cultural significance of the VIP terminal building.

However, due to the significant constructability challenges this option presents, in combination with the operational challenges, Location 1.1 has not been taken forward.

### 1.3.2 Location 1.2: International terminal located in the southern apron

This location proposes a new terminal in a remote apron area, to the south of the existing terminal building. On review of ICAO restrictions, this location is unsuitable as the runway approach conflicts with the height of the new terminal, rendering it too high for plane take-off and landing safety requirements.

If the terminal height was reduced to be in line with these requirements, this would then have implications for passenger circulation requirements and additional land would be needed to maintain the same building floorspace (through a larger ground floor area to compensate for the lower building height). The associated apron area would have to be extended to accommodate aircraft parking at the terminal and space for taxiways, which would have a consequential impact to the runway. Therefore, the adjacent runway would likely need to be moved further to the north-east, with associated land take requirements. This would have implications for the Scheme programme and cost, with consenting required, environmental and social impacts needing to be managed, and construction taking place to the runway, which would be disruptive to airport operations.

Operationally, it is unfavourable to have passengers moving externally across the airport, from the domestic terminal to a new international terminal. Similarly, this location presents difficulties in designing a suitable pick up/drop off point for the international terminal within the space available and proximity to the existing buildings.

This location would retain the VIP terminal building in its current location, with no works necessarily needed to modify the structure in any way. There would be no adverse physical impact to the VIP terminal building. There would be no change to the setting or spatial context of the VIP terminal building (as defined in the heritage statement, report number 100107121-003). Therefore, there would be no adverse impact to its cultural significance.

There would be no adverse impacts to the cultural significance of the VIP terminal building. As this location is not capable of meeting ICAO restrictions without significant land take to accommodate the increased floorspace, the resulting impacts to cost and programme render this option unsuitable. Therefore, Location 1.2 has not been taken forward.

### 1.3.3 Location 1.3: International terminal located in existing VIP terminal building location

This location would see the new passenger terminal adjacent to the existing terminal, in the current location of the VIP terminal building. This location would require potential removal, alteration, or incorporation of the VIP terminal building in order to construct the proposed new passenger terminal and extension to the existing vehicular access ramp for passenger drop-off/pick up.

This location is the most optimised for airport operations and constructability; it meets passenger comfort and safety standards and can be readily integrated into the existing terminal, existing apron, taxiways and kerbside drop off/pick up.

This location would have a direct adverse physical impact on the cultural significance of the VIP terminal building due to the presence of the new terminal building and construction activities. There are multiple concepts and options that can be developed which would likely have varying levels of impact on heritage.

For example, options to retain the existing building in-situ rather than remove it would reduce the adverse direct physical impact on the VIP terminal building but would alter its setting (as defined in the heritage statement, report number 100107121-003) introducing new adverse impacts to its cultural significance.

Whilst this location has adverse impacts on the cultural significance of the VIP terminal building, this should be weighed against the clear advantages from an operational suitability perspective. Location 1.3 has therefore been carried forward to further consideration in Chapter 2 and will be considered in the context of suitable options that can be developed for the VIP terminal building location in order to minimise potential impacts on the VIP terminal building and built heritage. Therefore, more detailed consideration of heritage impacts resulting from the concepts and options developed from this location are presented later in this report.

### **1.3.4 Location 1.4: International terminal located near the site of a previously partially completed terminal**

This location considers locating the new passenger terminal in an area to the south of the runway. This location would require significant new infrastructure to support a new passenger terminal here, such as new apron and taxiway, which would have subsequent cost and programme implications. Land acquisition would be required with potential for further social impacts associated with livelihood restoration. Supporting infrastructure (such as highways) would need to be constructed, generating road traffic in areas which have not previously had airport road traffic passing through.

This location is not considered operationally suitable as aircraft moving between the international terminal and the domestic terminal would need to cross the active runway and this presents logistical challenges. This is challenging as when aircraft arrive on a domestic leg but are then required to operate an international leg, they would need to be towed a large distance across the airfield which reduces the operational flexibility of for the airlines, reducing the airport's attractiveness to be operated as a hub (or passengers bussed to/from the different terminals). Similarly, a bus shuttle service would also be required to transport passengers between the international terminal and the domestic terminal. This was the reason identified for Air Astana's objection to the previous terminal located in this area which remains in a half-built form on private land – it is likely a similar objection would be forthcoming for a new terminal located in this part of the airport.

However, this location would retain the VIP terminal building in its current location, with no works proposed to modify the structure in any way. There would be no physical impact to the VIP terminal building. There would be no change to the setting or the spatial context of the VIP terminal building (as defined in the heritage statement, report number 100107121-003). Therefore, there would be no impact to its cultural significance.

Overall, based on these considerations, Location 1.4 has not been taken forward.

### **1.3.5 Conclusion of new passenger terminal location optioneering**

Due to the above analysis, it was identified that Location 1.3 above was the most suitable to be taken forwards for further consideration. Therefore, the remainder of this report considers more detailed variants within this location selection.

## **1.4 VIP Terminal Building**

In selecting Location 1.3 above as the preferred way forward for the new passenger terminal, impacts to the existing VIP terminal building would arise.

The existing VIP terminal building is noted as a building of historic interest, constructed in circa 1950. A heritage assessment conducted by Environmental Resources Management (ERM)<sup>2</sup>

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<sup>2</sup> Historic Building Assessment, Almaty International Airport VIP Terminal (2020), ERM

describes the VIP terminal building as a representative of historic architectural trends of the Soviet period, playing a historically important role in the development of Kazakhstan.

The VIP terminal building is a listed asset of local heritage value and described on the official list as:

*No. 73. Airport (now a business terminal). Architects: G. Elkin, B. Zavarzin; Turksibsky district, st. Mailina, 1a, 1947.*<sup>3</sup>

The VIP terminal building is located to the north of the main airport terminal with the landside elevation partially seen when approaching the airport from Mailin Street. The airside elevation is adjacent to the airport apron. The role the building plays as a focal point within the wider airport is particularly relevant to its cultural significance and its appreciation amongst stakeholders and the local community.

The proposed Scheme was presented to the Mayor of Almaty and President of Kazakhstan in January and May 2020 respectively, following which Akimat approval was granted in November 2020 to replace the VIP terminal building, and construct a similar building elsewhere. Although local permits and consents were granted for this proposal previously, this report considers all options discussed to date as a new review; it will therefore not take these existing permits or current works on site into account.

A suite of documents has been produced to assess the cultural significance of the VIP terminal building and its spatial context. This includes a Significant Fabric Assessment (report number 100107121-001), Heritage Interpretation Plan (report number 100107121-002), and Heritage Statement (report number 100107121-003) This has informed an optioneering process to understand the preferred options for how to minimise adverse impacts to the cultural significance of the VIP terminal building. These include direct adverse physical impacts and impacts resultant from a change in the setting of the VIP terminal building. Chapters 2 to 4 consider this further to conclude on preferred options for the VIP terminal building.

## 1.5 ESIA Proposed Scheme Layout

Within the project Environmental and Social Impact Assessment (ESIA)<sup>4</sup>, a preferred option was presented as part of the Scheme design for assessment where the new international terminal is situated in the current location of the VIP terminal building (Option 1.3 above), with the VIP terminal building replaced and reconstructed in the remote apron area where it will become the “Presidential and General Aviation” terminal (see Figure 1.2). In replacing and reconstructing the building, the heritage value (an equivalent term to cultural significance) is sought to be retained through considered reconstruction of the building material and restoration at its new location.

Figure 1.2 and Figure 1.3 illustrate the proposed layout, as assessed in the ESIA, with the new passenger terminal (dark blue), existing terminal (pale blue) and replacement VIP terminal building (yellow) within the existing airport boundary. These figures were produced as part of the previous ESIA in consideration of the proposed scheme layout.

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<sup>3</sup> Finnegan, E., and Myers, E. 2020 *Historic Building Assessment, Almaty International Airport VIP Terminal*. Environmental Resources Management, Inc. (ERM).

<sup>4</sup> Environmental and Social Impact Assessment (ESIA), Mott MacDonald, 2021. Document reference 100100464-001

**Figure 1.2: Proposal for change in location for VIP Terminal Building, as assessed previously in the ESIA**



Source: TAV, 2020

**Figure 1.3: Proposal Masterplan**



Source: TAV 2020

It is important to note that this option was the preferred way forward at the time of the ESIA, but the optioneering process presented in this Evaluation of Alternatives report has reviewed the information and makes its own conclusions irrespective of the option presented in the ESIA. Therefore, the preferred options from this report may not necessarily reflect the same design as that presented in the ESIA.

## 1.6 Optioneering Process

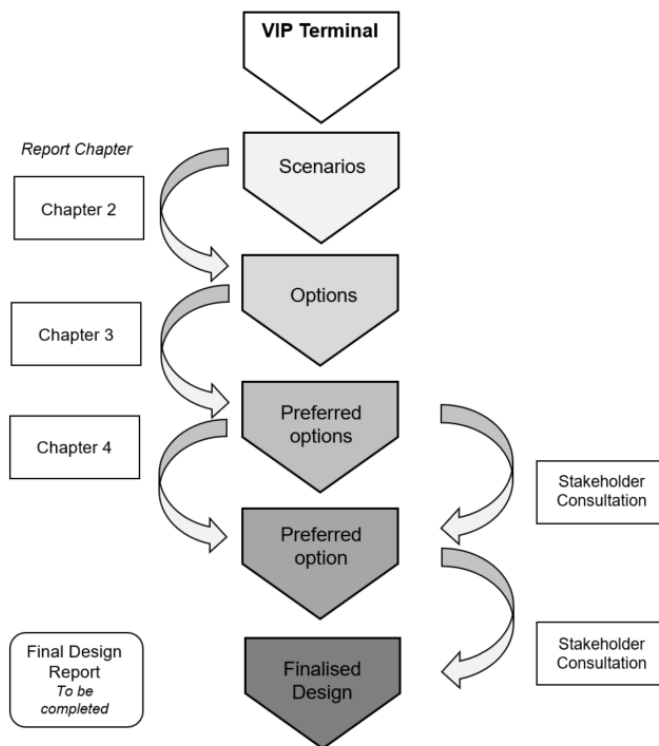
Of the potential locations for the new international terminal, as outlined in Section 1.3 above, only Location 1.3 'International terminal located in existing VIP terminal location' was considered suitable for further development. As such, this option has been taken forward as part of the Scheme, therefore necessitating the consideration of suitable options for minimising risks or impacts to the VIP terminal building which currently occupies this location.

To do this, an optioneering process has been developed: firstly "concepts" are considered which are design solution principles. Preferred concepts are then taken forward for more detailed designs whereby more detailed "options" are developed, with preferred options taken forward for stakeholder consultation.

The scenarios are high level concepts which will be evaluated in greater detail in Chapter 2, in line with the evaluation criteria outlined in Section 1.2.

Chapter 3 presents a short list of options to be taken forward to stakeholder consultation. See Figure 1.4 below for a summary of this process.

**Figure 1.4: VIP Terminal Building Evaluation Flow Chart**



## 2 Scenarios

This chapter presents a long list of scenarios which have been identified for locating the VIP terminal building in the context of the Scheme. This includes options for managing impacts to the VIP terminal building for scenarios that would propose a new passenger terminal on that site. Scenarios are reported as being taken forward to the next stage or not, and only those taken forward for further optioneering are considered in Chapter 3.

### 2.1 Do-Nothing

Under a 'Do-Nothing' scenario, the airport would continue to operate, however no further maintenance of the existing facilities would be undertaken, allowing general degradation of the facilities and no further improvement or repairs. No works would be undertaken to address the identified capacity increase. This would lead to the viability of Almaty airport decreasing and would result in direct physical impacts to the cultural significance of the VIP terminal building as it would not be repaired and maintained. It is likely that the setting of the VIP terminal building would alter detrimentally due to lack of maintenance further impacting its cultural significance.

The 'Do-Nothing' scenario is not considered viable as it does not address the need for the scheme nor maintain the existing airport. In addition to the above, the 'Do-Nothing' scenario would result in several missed socio-economic benefits as a direct result of not expanding the airport terminal facilities and increasing the potential passenger capacity.

### 2.2 Do-Minimum

Under a 'Do-Minimum' scenario, maintenance of the existing facilities would be undertaken (unlike the "do-nothing"), but no significant works would be undertaken to address the identified capacity increase. The airport would continue to operate with existing terminal infrastructure, maintaining all relevant structures and buildings as it currently does.

As significant works would not be proposed, environmentally this would likely result in fewer overall impacts resulting from construction and operation of the Scheme. Impacts to the cultural significance of the VIP terminal building would not occur as the building and its setting (as defined in the heritage statement, report number 100107121-003) would be maintained. Therefore, from an environmental and heritage perspective, this would be preferred. However, this scenario does not allow for an increase in passenger numbers that the airport needs, to be able to accommodate the projected increase in passenger numbers. Similar to the 'Do-Nothing' scenario, this option would result in several missed socio-economic benefits associated with expanding the terminal facilities and increasing passenger provision.

As such, the 'Do-Minimum' scenario is not considered suitable to take forward for further evaluation as it does not address the need for the Scheme.

The Do-Minimum Scenario is therefore not considered further.

### 2.3 Do-Something

#### 2.3.1 Scenario 1: Retention in situ of VIP terminal building, incorporation into the new international terminal

This scenario would see construction of a new international passenger terminal located immediately behind the existing VIP terminal building so that the two adjoin. The VIP terminal building would be the main landside feature of the new passenger terminal. The VIP terminal building may also be enveloped within the new structure.

Structural work to the VIP terminal building would be required for seismic compliance. This would result in a direct physical impact on the building.

Retention of the VIP terminal building in place would enable fewer direct physical heritage impacts than removing the building and replacing it elsewhere. It is likely that the setting of the VIP terminal building (as defined in the heritage statement, report number 100107121-003) would be altered. The degree to which this impacts its cultural significance would need to be considered. Therefore, this scenario has been taken forwards for further consideration, although it would present some challenging construction and operational issues regarding access and seismic compliance.

### **2.3.2 Scenario 2: Demolition and construction of a replacement VIP terminal building within the airport**

In this scenario, the existing VIP terminal building would be demolished and a replacement building constructed in a style influenced by the existing building, with key heritage features moved across where possible.

This scenario would result in the permanent loss of some of the VIP terminal building's cultural significance. The cultural significance of the VIP terminal building is considered to be due to its architectural form, symmetry and key architectural features (including the pishtaq, belvedere, decorative elements and window and doorway arrangements). Later alteration has meant that its cultural significance of the VIP terminal building has been reduced (see the heritage statement, report number 100107121-003). This means that construction of the replacement VIP terminal building would retain some of the key fabric of the building and therefore some of its cultural significance. The character and appearance of the new building, including these architectural features, would be reconstructed. Some features from the original building would be retained and relocated into the new building where possible, such as the stained glass. Full details on construction technique would be determined in a more detailed design stage in due course if this concept is taken further.

Elements of the VIP terminal building's historic spatial context including the linear alignment of Mailin Street, surrounding suburb and airport would be retained. The VIP terminal building would be lost as a focal point of the historic landscape including the alignment with Mailin Street. However, Mailin Street would remain creating a different relationship with the new international passenger terminal. Although there would be an impact to the cultural significance of the VIP terminal building itself this should be weighed against the continued importance of the relationship between Mailin Street and the new international passenger terminal as part of an evolving landscape.

Multiple options for location of the replacement building would be possible, which would offer a range of impacts and opportunities to the cultural significance of the VIP terminal building and its spatial context. These options could also consider how the historic landscape of Almaty airport is retained or enhanced through sympathetic design. All of these options retain association with the airport and maintain this element of its cultural significance.

Therefore, this scenario has been taken forwards for further consideration, although it is noted that demolishing the original building would have heritage impacts which would be considered in further detail.

### **2.3.3 Scenario 3: Permanent demolition of the VIP terminal without replacement**

This scenario would see permanent demolition and removal of the VIP terminal building, with no provision to replace the structure.



This scenario would result in the permanent loss of the majority of the VIP terminal building's cultural significance. This would involve all of the significant fabric of the VIP terminal building itself and the permanent loss of the building as a heritage resource. The VIP terminal building would be lost as a focal point of the historic landscape including the alignment with Mailin Street. Elements of the VIP terminal building's historic spatial context including the linear alignment of Mailin Street, surrounding suburb and airport would be retained as part of an evolving landscape.

Furthermore, the future need for a "Presidential and General Aviation terminal" provides the airport with an opportunity for a new VIP terminal building to be constructed to contain heritage features of the current building.

Therefore, this scenario has not been taken forwards for further consideration.

#### **2.3.4 Scenario 4: Relocation away from the airport**

This scenario would demolish the existing VIP terminal building and construct a replacement building of similar style at a location situated away from the airport, elsewhere (likely to be in Almaty city, outside of the existing airport footprint). Key heritage features from the current building would be moved to this replacement. This scenario would create building of interest elsewhere in the city which could be used for a variety of purposes.

This scenario would result in the permanent loss of most of the VIP terminal building's cultural significance. The VIP terminal building would be lost as a focal point of the historic landscape including the alignment with Mailin Street. Elements of the VIP terminal building's historic spatial context including the linear alignment of Mailin Street, surrounding suburb and airport would be retained as part of an evolving landscape.

The relocation of the VIP terminal building would retain some of the significant fabric of the building itself. However, the cultural significance of its historic context and association with the airport for which it was designed would be lost.

Furthermore, the future need for a "Presidential and General Aviation terminal" provides the airport with an opportunity for a new VIP terminal building to be constructed to contain the heritage features of the current building, and this would be located at the airport, providing those features with the context for which they were intended.

Therefore, given there are preferable alternatives, this scenario has not been taken forwards for further consideration.

#### **2.3.5 Scenario 5: Relocation of the airport/building new airport**

This scenario would seek to build a new Almaty airport in an alternative location, avoiding the need to affect the VIP terminal building, by selecting a site large enough to accommodate the projected future growth and address the need for the Scheme.

It is assumed that this scenario would result in the existing VIP terminal building being retained in-situ. This option would remove the potential direct physical impacts on the heritage significance of the VIP terminal building due to its alteration and/or demolition. However, it would be likely to result in the loss of an active airport from the setting of the VIP terminal building. The airport forms an important element of the cultural significance of the VIP terminal building for which it was designed.

The VIP terminal building is not regarded as being of sufficient cultural significance to warrant the relocation of the airport. It is regarded as being of local significance with some individual architectural elements of higher cultural significance.

This scenario presents considerable other challenges due to the significant costs and planning involved with developing a new airport. The impacts of developing a new airport are highly likely to be significant on the environment and communities and require extensive designing, permitting and consenting periods. The timeframes for this would be substantially lengthy to mean the existing airport would have passenger numbers exceeding capacity well before a new airport could open. There would also be numerous political and economic obstacles which would affect the viability of such a project.

Although there have been previous discussions regarding development of a new airport for Almaty, these are not currently actively being proposed. Therefore, this scenario has not been taken forward for further consideration as it would not enable an increase in passenger terminal facilities within the required timeframe.

## 3 Options for VIP Terminal

This chapter describes subsequent options that have been developed under the two Scenarios, which have been taken forward for further consideration – i.e. Scenario 1 and 2 as described in Chapter 2. For each option the key evaluation criteria will be considered before concluding whether the option is suitable to be taken forward to stakeholder engagement.

### 3.1 Scenario 1: Retention in situ (incorporation into the new international terminal)

Four options under this scenario have been considered, as outlined below.

#### 3.1.1 Option 1.1: New international terminal located behind the VIP terminal building with a split-level entrance

##### **Description**

This option would see the construction of a new international terminal adjoining directly behind the existing VIP terminal building. A vehicular ramp would connect to the existing ramp as a continuation of this structure, allowing a split-level zone for passenger drop-off/pick up, segregating arrivals (lower level) and departures (upper level) at the terminal entrance, as per the existing terminal. This passenger drop-off/pick-up area and vehicle ramp would be located in front of the VIP terminal building and adjoin it via a pedestrian bridge. See Figure 3.1 for indicative illustration.

The VIP terminal building and new passenger terminal would be inter-linked, with the VIP terminal building acting as the landside entrance/exit part of the new terminal.

##### **Impacts to cultural significance**

Retaining the VIP terminal building in its present location would mean its demolition is not required thus reducing the direct physical impact to its cultural significance. This option requires constructing a new passenger terminal immediately to the rear (and east) of the VIP terminal building and locating the vehicle access ramp in front of the VIP terminal building (see Figure 3.1 for illustration) with associated walkway bridges cutting through the roof. This would require the alteration of the VIP terminal building and a change to its setting. This would impact its cultural significance and is not desirable.

In this option, both the interior layout of the VIP terminal building and the exterior architectural details is likely to be altered. In order to allow for passenger throughflow on the lower and upper ramp levels and sufficient emergency exits the window openings would be changed. This would include the removal of the stained-glass windows and alteration of the exterior western façade. The interior layout would be altered. These changes would result in a direct physical impact on the cultural significance of the VIP terminal building. It would alter how the original function, architectural form and composition of the VIP terminal building could be appreciated.

Furthermore, structural work would be needed for seismic compliance. This would result in a further, direct physical impact on the building. This would further diminish its cultural significance and the ability to appreciate its character and appearance.

The new passenger terminal would be located immediately east and to the rear of the VIP terminal building. This would visually dominate the VIP terminal building, introducing additional infrastructure into its setting. The construction of the new passenger terminal would also sever the relationship with the airport runway. Views from the airport towards the VIP terminal building entirely lost. It would prevent the VIP terminal building's eastern façade being a visual focal

point to passengers arriving to the airport. The construction of an access ramp would obscure views of the western façade (see Figure 3.1). This would reduce the ability to appreciate the character and appearance of the building and important architectural features such as the pishtaq and fenestration.

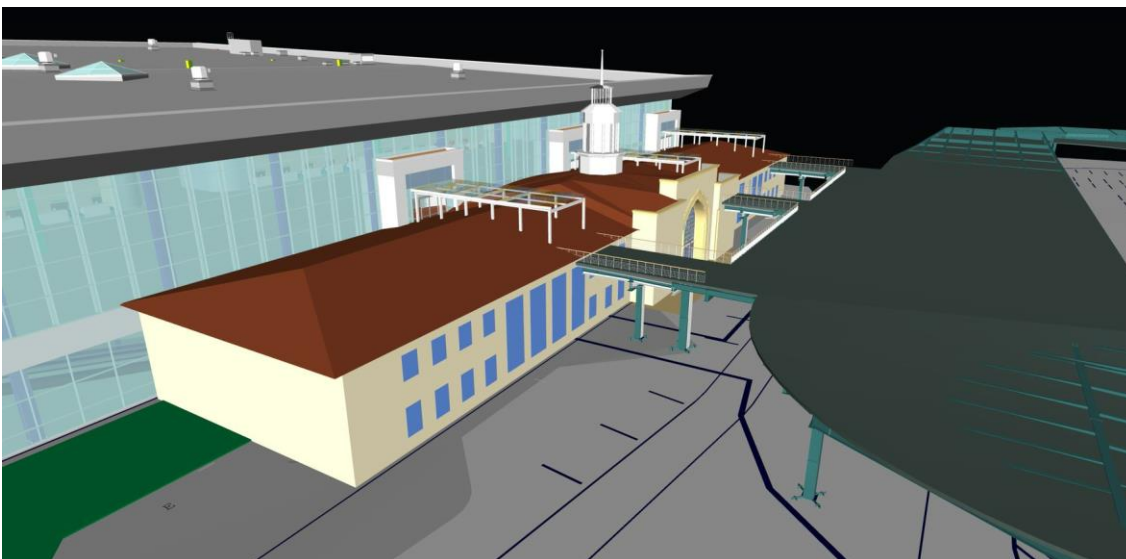
The VIP terminal building's setting already has elements that are detrimental and unsympathetic to its cultural significance. But this option introduces new infrastructure and buildings which would reduce the ability to understand the simple architectural form and intended landmark character of the building. The ability to appreciate the relationship between the building, the airport runway and some of the surrounding historic context of Mailin Street would be lost. It would result in a setting that had been so substantially altered from its historic context in open land on the edge of the airport runway that it would contribute very little to its cultural significance.

**Figure 3.1: Option 1.1 New international terminal located behind the VIP terminal building on a split level** (Doesn't show modifications that would be needed for seismic compliance and passenger flow)



Source: TAV, 2020

**Figure 3.2: Option 1.1 New international terminal located behind the VIP terminal building on a split level** (Indicative modification locations required for passenger flow on the upper ramp level are shown, but the cuts through the roof for the walkways are not shown)



Source: TAV, 2022

### **Constructability**

Due to the proximity of the VIP terminal building to the new international terminal, the structural foundations of the new terminal could adversely impact the stability and structure of the VIP terminal building. At present, the VIP terminal building does not meet current requirements

relating to seismic risk. As such, any works to the VIP terminal building would require additional structural reinforcement which is likely alter the aesthetic quality of the building.

Similarly, the VIP terminal building could pose a risk to the new terminal, should the structure fail under seismic activity and fall on the new terminal.

The construction of a vehicle ramp would require significant modifications to both levels of the VIP terminal building to provide appropriate space on both levels and would require removal of windows and creation of suitable space to enable passenger flow. Changes to the roof would be required to allow access to/from the upper vehicle ramp.

### ***Operational suitability***

Operationally, this split-level design is desirable to separate arrival and departure passenger throughflow, providing enough space for vehicle pick-up and drop-off, and meeting desired passenger comfort levels. Life and fire safety standards can't be fully met, as the VIP terminal building does not provide sufficient escape routes in the event of a fire, without significant modification to the number of entry/exit points from the VIP terminal building.

### ***Socio-economic benefits***

This option would provide significant socio-economic benefits as a direct result of a new international terminal and the increased passenger provision this would provide. The new international terminal would create employment opportunities and new sources of revenue for the local community.

### ***Conclusion***

From a heritage perspective, the VIP terminal building is retained in situ, albeit with additional construction modifications required to meet the necessary standards. Its setting would be substantially altered such that it would contribute very little to its cultural significance. Whilst this option has multiple constructability challenges, it is capable of providing the desired passenger comfort levels and space to accommodate vehicle pick-up and drop-off. For these reasons, this option will be carried forward to further consideration and stakeholder consultation.

## **3.1.2 Option 1.2: New international terminal located behind the VIP terminal building with ground level pick-up/drop off**

### ***Description***

This option retains the VIP terminal building in its current location, with the new international terminal located behind, with no vehicle access ramp. In this scenario all passenger drop-off/pick-up would be on the ground level. The VIP terminal building and new passenger terminal would be inter-linked, with the VIP terminal building acting as the landside entrance/exit part of the new terminal. See Figure 3.3 for illustration.

### ***Impacts to cultural significance***

Retaining the VIP terminal building in its present location would mean its demolition is not required thus reducing the direct physical impact to its cultural significance. This option requires constructing a new passenger terminal immediately to the rear (and east) of the VIP terminal building. This would require the alteration of the VIP terminal building and a change to its setting. This would impact its cultural significance and is not desirable. See Figure 3.3 for illustration below.

In this option, both the interior layout of the VIP terminal building and the exterior architectural detail is likely to be altered. In order to allow for passenger throughflow on the lower level and sufficient emergency exits the window openings would be changed. This would include the removal of the stained-glass windows and alteration of the exterior western façade. The interior

layout would be altered. This would be a direct physical impact on the cultural significance of the VIP terminal building. It would alter how the original function, architectural form and composition of the VIP terminal building could be appreciated.

Furthermore, structural work would be needed for seismic compliance. This would result in a further direct physical impact on the building. This would further diminish its cultural significance and the ability to appreciate its character and appearance.

In this option the setting of the VIP Terminal Building would be altered. The VIP terminal building's setting already has elements that are detrimental and unsympathetic to its cultural significance. However, this option would introduce new buildings which would visually dominate the VIP terminal building, and obscure key views of the eastern elevation. This would reduce the ability to understand the simple architectural form and intended landmark character of the building. The ability to appreciate the relationship between the VIP terminal building and the surrounding historic context of Mailin Street would, however, be partially retained. Overall, it would result in a setting that had been substantially altered from its historic context in open land on the edge of the airport runway. The extent to which the VIP terminal building's setting contributes to its cultural significance would be diminished.

**Figure 3.3: Option 1.2 New international terminal located behind the VIP terminal building**  
(ground level pick-up/drop off, removal of windows for passenger movements, and structural improvements for seismic risk are all not shown in the visualisation)



Source: TAV, 2020

### ***Constructability***

As with Option 1.1, at present the VIP terminal building does not meet current Kazakhstan regulations relating to seismic risk. As such, any works to the VIP terminal building would require additional structural reinforcement.

Spatial options have been considered which locate an access road elsewhere within proximity to the VIP terminal building, such as around the currently vacant hotel building. However, there is not enough space in the airport boundary to locate the road without using a double-deck access ramp.

### ***Operational suitability***

Operationally, this presents a challenge to utilise one level for all arrivals and departures entering and exiting the building simultaneously. There would also be insufficient space for both passenger drop-off and pick-up without significant works (such as demolition of the adjacent hotel building).

This design would affect passenger comfort levels and fire and life safety requirements, as the current VIP terminal building does not contain enough fire escape routes on its ground floor to meet the safety requirements for the projected number of passengers in accordance with National Fire Protection Association (NFPA) standards and the Gost Standard.

### ***Socio-economic benefits***

This option would provide significant socio-economic benefits as a direct result of a new international terminal and the increased passenger provision this would provide. The new international terminal would create employment opportunities and new sources of revenue for the local community.

### ***Conclusion***

From a heritage perspective, the VIP terminal building is retained in situ, albeit with additional construction modifications required to meet the necessary standards. This would retain some of its cultural significance but the extent to which the VIP terminal building's setting contributes to its cultural significance would be diminished. This option is not capable of meeting the required operational standards, in particular regarding passenger pick-up/drop-off. Similarly, it presents a number of constructability challenges with limited benefit to the heritage importance of the VIP terminal building. For these reasons this option will not be carried forward to further consideration or stakeholder engagement, although it is acknowledged that heritage impacts would be less than with Option 1.1.

### **3.1.3 Option 1.3: New international terminal located behind the VIP terminal building (access ramp relocated)**

#### ***Description***

This option would see the new terminal building located directly behind the VIP terminal building, with the access ramp relocated underground to prevent obscuring the front elevation of the VIP terminal building. See Figure 3.3 for illustration of the VIP terminal location and proximity to the new international terminal, noting the access ramp is not shown in this visualisation. This would see the VIP terminal building retained in its current situ. The VIP terminal building and new passenger terminal would be inter-linked, with the VIP terminal building acting as the landside entrance/exit part of the new terminal.

#### ***Impacts to cultural significance***

Retaining the VIP terminal building in its present location would mean its demolition is not required thus reducing the direct physical impact to its cultural significance. This option requires constructing a new passenger terminal immediately to the rear of the VIP terminal building. This would require the alteration of the VIP terminal building and a change to its setting. This would impact its cultural significance and is not desirable.

In this option, the entrance and window openings would not be changed. As passengers would be dropped-off and picked-up underground, the building would no longer serve as an entranceway for users. However, the architectural form and composition of the western elevation and interior of the VIP terminal building could still be appreciated. The interior layout of the VIP terminal building would be retained but its interior layout mostly lacks cultural significance.

Furthermore, structural work would be needed for seismic compliance. This would result in a direct physical impact on the building. Excavation for underground vehicle pick-up/drop-off may also risk subsidence and physical damage to the structure of the VIP terminal building which will need to be carefully considered in the design. This would have the potential to diminish its cultural significance and the ability to appreciate its character and appearance.

The new passenger terminal would be located east and to the rear of the VIP terminal building. This would visually dominate the VIP terminal building and alter its setting. The construction of the new passenger terminal would also sever the relationship with the airport runway. Views from the airport towards the VIP terminal building would be entirely lost. It would prevent the VIP terminal building's eastern façade being a visual focal point to passengers arriving to the airport.

The VIP terminal building's setting already has elements that are detrimental and unsympathetic to its cultural significance. But this option introduces new infrastructure and buildings which would reduce the ability to understand the simple architectural form and intended landmark character of the building. Underground access ramps in the vicinity of the building may distract further from the ability to appreciate the relationship between the VIP terminal building and its setting. The ability to appreciate the relationship between the VIP terminal building and the surrounding historic context of Mailin Street would, however, be partially retained. Overall, it would result in a setting that had been substantially altered from its historic context in open land on the edge of the airport runway. The extent to which the VIP terminal building's setting contributes to its cultural significance would be diminished.

### ***Constructability***

Utilising underground vehicle access to the terminal is not considered feasible due to the high cost and programme of necessary works to counter the high groundwater table to prevent the ingress of water. Such works would be significant to accommodate the scale of passenger drop-off/pick-up underground and would make the project financially unfeasible.

### ***Operational suitability***

Operationally, this would offer space for passenger drop off/pick-up in an underground space, assuming sufficient space could be made available for it. The ongoing maintenance works for the underground areas (such as ensuring no groundwater ingress) would result in a more expensive asset to manage than variants with above-ground vehicle access.

Air quality issues from vehicular pollution underground would be a substantial issue and would need extensive management to minimise the impact on the health and wellbeing of airport users.

### ***Socio-economic benefits***

This option would provide significant socio-economic benefits as a direct result of a new international terminal and the increased passenger provision this would provide. The new international terminal would create employment opportunities and new sources of revenue for the local community.

### ***Conclusion***

From a heritage perspective, the VIP terminal building is retained in situ, albeit with additional construction modifications required to meet the necessary standards. This would retain some of its cultural significance but the extent to which the VIP terminal building's setting contributes to its cultural significance would be diminished. This option is not feasible from a construction feasibility perspective due to the challenges and costs of underground engineering. Therefore, this option will not be carried forward to further consideration or stakeholder engagement.

## **3.1.4 Option 1.4: New international terminal built to envelop the VIP terminal building**

### ***Description***

A final option within this Scenario was considered where the VIP terminal building is retained in its present location, and the new passenger terminal built around it to envelop the VIP terminal inside it as a feature piece. The VIP terminal building would therefore be located entirely within the new terminal building.



### ***Impacts to cultural significance***

Retaining the VIP terminal building in its present location would mean its demolition is not required thus reducing the direct physical impact to its cultural significance. This option would retain the VIP terminal building in its current situation, enveloping the new terminal around it. This radically alters the setting of the VIP terminal building. This would impact its cultural significance and is not desirable.

The structural works needed for seismic compliance would also result in a physical and visual intrusion into building, resulting in the potential loss of historic fabric of cultural significance, and distracting from the ability to appreciate its character and appearance.

The VIP terminal building's setting already has elements that are detrimental and unsympathetic to its cultural significance. Enveloping the VIP terminal building would reduce the ability to understand the simple architectural form of the building and diminish the ability to understand the intended landmark character of the building. It would sever the relationship with the airport runway. Views from the airport towards the VIP terminal building would be entirely lost. It would prevent the VIP terminal building's eastern façade being a visual focal point to passengers arriving to the airport. It would at least partially obscure views of the western façade. This would reduce the ability to appreciate the character and appearance of the building and important architectural features such as the pishtaq and fenestration.

The ability to appreciate the relationship between the VIP terminal building, the airport runway and some of the surrounding historic context of Mailin Street would be lost. Overall, it would result in a setting that had been substantially altered from its historic context in open land on the edge of the airport runway. The extent to which the VIP terminal building's setting contributes to its cultural significance would be diminished.

### ***Constructability***

As with Option 1.1, at present the VIP terminal building does not meet current Kazakhstan regulations relating to seismic risk. As such, any works to the VIP terminal building would require additional structural reinforcement so as to not undermine the seismic compliance of the new terminal building.

### ***Operational suitability***

Operationally, this design is desirable to separate arrival and departure passenger throughflow, providing enough space for vehicle pick-up and drop-off, and meeting desired passenger comfort levels as it can allow for a split-level pick-up and drop-off at the front of the new terminal. However, internal configuration and layout of the new passenger terminal to accommodate the VIP terminal building presents further challenges to meet the desired passenger throughflow and it will require changes to the VIP terminal building to allow this. It may also require the new terminal to have an increase in footprint to be able to accommodate its functions as the including of the VIP terminal building will take up floorspace that would otherwise be used for other building functions (such as check-in).

### ***Socio-economic benefits***

This option would provide significant socio-economic benefits as a direct result of a new international terminal and the increased passenger provision this would provide. The new international terminal would create employment opportunities and new sources of revenue for the local community.

### ***Conclusion***

From a heritage perspective, the VIP terminal building is retained in situ, albeit with additional construction modifications required to meet the necessary standards. This would retain most of

its cultural significance but the extent to which the VIP terminal building's setting contributes to its cultural significance would be diminished. This option has limited functionality and presents a number of constructability challenges. Whilst it is capable of retaining the VIP terminal building in situ, it inhibits key views of the terminal and prevents its appreciation as a focal point within the wider airport. Furthermore, works to the VIP terminal building would be required to allow seismic compliance and passenger throughflow which would affect its heritage. For these reasons this option will not be carried forward to further consideration or stakeholder engagement.

### 3.2 Scenario 2: Demolition and construction of a replacement VIP terminal building within the airport

This scenario would see construction of a new international terminal with elevated viaduct structure to connect to the existing drop-off and pick-up roads. The VIP terminal building would be demolished with replacement building of similar style constructed elsewhere at the airport.

Any option within this scenario will have heritage impacts, due to a need to demolish the existing VIP terminal building. However, in doing so an opportunity would be taken to reproduce some original building features which have since been lost in the existing building such as the first-floor balcony. Existing heritage features would be moved across where appropriate.

Three potential options have been identified, shown in Figure 3.4 below, and outlined as follows:

- Option 2.1 (shown in blue)
- Option 2.2 (shown in green)
- Option 2.3 (shown in red)

**Figure 3.4: VIP Terminal Building Alternative Locations**



Source: TAV, 2020

### 3.2.1 Option 2.1: VIP terminal building reconstructed, perpendicular to Zakarpatskaya St. in southern apron

#### **Description**

This option would see the replacement VIP terminal building reconstructed in a new location in the southern apron area, south of the existing terminal, in a vertical alignment.

#### **Impacts to cultural significance**

This option would result in the demolition of the VIP terminal building and loss of original fabric. This would include fabric of low or no cultural significance. However, some elements including the pishtaq, belvedere, decoration and architectural form of greatest cultural significance could be retained in the new building. Its association with the historic spatial context of the airport runway and orientation on Mailin Street would be removed.

The new building would only partially retain elements of the setting which contributed to the original VIP Terminal building's cultural significance. This would only include its continued association with the airport runway. The design of the northern façade (which used to be the eastern Stalinist style façade) would be largely hidden from public view. Although the southern façade (the former western façade, with south Kazakh style features) would be visible. However, it could not be fully appreciated except when viewed from private space within the airport terminal.

The former association with Mailin Street and axial alignment of its orientation would be entirely lost. The change in orientation would detract from the important symmetry and form of the original VIP terminal building. The appreciation of the principal eastern and western façades would be reduced. The ability to understand that these façades represented the separation between the airport runway to the east and the public space to the west would be lost.

There remains the opportunity to enhance the elements of the spatial context of the airport that form part of the historic landscape to beneficially impact its cultural significance. In particular this includes improving how the relationship between the axial orientation along Mailin Street and the new airport terminal can be appreciated.

#### **Constructability**

This option presents limited constructability challenges, however noting that it would require construction of the replacement VIP terminal building. This option allows for further seismic structural reinforcement of the reconstructed building, extending the life of this structure. This area of land is, however, partially owned by Air Astana which would need its office buildings relocated.

A variation to this option was also discussed whereby the VIP terminal building was moved closer to the existing terminal public vehicle access ramp (to increase public visibility), however this variation would require relocating the airport transformer station which is not desirable, due to the extended programme and cost required to deliver this and complexity of building a new transformer station on site.

Construction of a new building will increase material demand above any option which does not require replacement of the VIP terminal building. However, this material increase and associated embodied carbon is not considered to be significant given the size and scale of the new building.

#### **Operational suitability**

Operationally, this option has limited challenges and can meet the desired function as a "General Aviation and Presidential" terminal. However, it would intersect the airport service road which would need to be relocated.

### **Socio-economic benefits**

This option would provide significant socio-economic benefits as a direct result of a new international terminal and the increased passenger provision this would provide. The new international terminal would create employment opportunities and new sources of revenue for the local community.

### **Conclusion**

This option presents limited operational and constructability challenges; however, the reconstructed building would not fulfil the VIP terminal building's original role as a key focal point within the local landscape, separating the airport runway from the public sphere, which is a contributing factor towards its cultural significance. It also results in the northern (formerly the eastern) elevation being hidden from view. For this reason, this option will not be taken forward for further consideration or stakeholder consultation.

### **3.2.2 Option 2.2: VIP terminal building reconstructed, aligned to Zakarpatskaya St. in southern apron**

#### **Description**

This option would see a replacement VIP terminal building constructed at the southern apron area, in a horizontal alignment to match the current aspect. This is the option that was assessed in the ESIA previously.

#### **Impacts to cultural significance**

This option would result in the demolition of the VIP terminal building and loss of some of its cultural significance. However, some elements including the pishtaq, belvedere, decoration and architectural form of greatest cultural significance could be retained in the new building. Its association with the historic spatial context of the airport runway and orientation on Mailin Street would be removed.

However, the potential loss of the belvedere's needle as a permanent feature due to the proximity of the runways is less desirable than Option 2.1 and Option 2.3.

The new building would partially retain elements of the setting which contributed to the original VIP Terminal building's cultural significance. The orientation, important symmetry and form of the original VIP terminal building would be retained. The appreciation of the principal eastern and western façades, that separate the airport runway to the east and the public space to the west, would continue to be legible. Its aligned orientation to the airport apron would continue to act as a point of transition between the private space of the apron to the east and the public space outside the airport to the west. This was an important design element in the VIP terminal building expressed in the architectural Stalinist style on the east and south Kazakh style on the west.

A key contributor factor to the cultural significance of the original VIP terminal building relates to its orientation and visibility of the western façade on the approach to the airport from Mailin Street. The would be entirely lost. Instead, the new building would have a relationship and visibility from Zakarpatskaya Street. This option retains some public visibility of the new VIP terminal building and its historic relationship with the wider airport. This provides greater visibility than Option 2.1 or Option 2.3 and is more desirable than these similar options.

Its location close to the operational airport increases the building's likely viability and continued use as a terminal. This would extend its useful life into the future and means its cultural significance is likely to be retained.

There remains the opportunity to enhance the elements of the spatial context of the airport that form part of the historic landscape to beneficially impact its cultural significance. In particular this includes improving how the relationship between the axial orientation along Mailin Street and the new airport terminal can be appreciated.

### ***Constructability***

This option presents few constructability challenges, however noting that it would require reconstruction of the VIP terminal building. This option allows for further seismic structural reinforcement of the reconstructed building, extending the life of this structure.

Reconstruction of a new building will increase material demand above any option which does not require replacement of the VIP terminal building. However, this material increase and associated embodied carbon is not considered to be significant given the size and scale of the new building.

### ***Operational suitability***

Operationally, this option has limited challenges as it enables suitable passenger flow for the new terminal and is located adjacent to the existing southern apron, meaning a new apron would not be needed to be built.

The needle aspect of the belvedere tower may not be a permanent fixture as its height could potentially interfere with the safety zones of the nearby runways. Therefore, in this location, a needle which is extendable for special events only would potentially be installed.

### ***Socio-economic benefits***

This option would provide significant socio-economic benefits as a direct result of a new international terminal and the increased passenger provision this would provide. The new international terminal would create employment opportunities and new sources of revenue for the local community.

### ***Conclusion***

This option presents limited operational and constructability challenges and is capable of restoring in part, some of the historic relationship between the VIP terminal building and the wider airport. This includes its aligned orientation to the airport apron, separating the airside area from the public sphere. In this location views of the replacement VIP terminal building would be maximised compared with Options 2.1 and 2.3. For this reason, this option will be taken forward for further consideration and stakeholder consultation.

## **3.2.3 Option 2.3: VIP terminal building reconstructed, south of the runways**

### ***Description***

This option seeks to replace the VIP terminal building and reconstruct a new building on land south of the runway.

### ***Impacts to cultural significance***

This option would result in the demolition of the VIP terminal building and loss of some of its cultural significance. However, some elements including the pishtaq, belvedere, decoration and architectural form of greatest cultural significance could be retained in the new building. Its association with the historic spatial context of the airport runway and orientation on Mailin Street would be removed.

It would result in a change in its orientation which reduces how the building and interpretation of how the building was originally used could be understood. In particular this orientation removes the relationship between the building and the mountains of Tien Shan which would have formed

the backdrop on the approach along Mailin Street. Similarly, in this location the public visibility of the new VIP terminal building is significantly reduced.

This option entirely removes the new VIP terminal building from the western side of the airport. It becomes disassociated with the public space around the main terminal and it is harder to understand the original use as the principal terminal building. Its isolation could result in a change in use or the building becoming abandoned. Both of these would result in a reduction in its cultural significance and effect the long-term viability of the building.

There remains the opportunity to enhance the elements of the spatial context of the airport that form part of the historic landscape to beneficially impact its cultural significance. In particular this includes improving how the relationship between the axial orientation along Mailin Street and the new airport terminal can be appreciated.

### ***Constructability***

Locating the VIP terminal building on the edge of the apron would likely require a new apron area to be constructed which would extend the construction programme. Land acquisition may also be required as much land in this area is not owned by the airport and this would make this more complicated than other options within Scenario 2 which don't require land acquisition.

It is noted that construction of a replacement VIP terminal building will increase material demand above any option which does not require replacement of the VIP terminal building. However, this material increase and associated embodied carbon is not considered to be significant given the size and scale of the new building.

### ***Operational suitability***

The proposed location separates the VIP terminal building from the wider airport infrastructure, creating operational challenges as aircraft would need to cross the active runway to access the terminal and users would need to access the terminal far away from the existing airport terminal infrastructure.

### ***Socio-economic benefits***

This option would provide significant socio-economic benefits as a direct result of a new international terminal and the increased passenger provision this would provide. The new international terminal would create employment opportunities and new sources of revenue for the local community.

### ***Conclusion***

Whilst this option does present a number of operational challenges, it would provide a replacement VIP terminal building within a prominent place in the wider airport footprint. It would enable the building to be viewed by passengers when landing or taking off, retaining in part the VIP terminal building's role as a focal point within the wider airport landscape. However, its location and orientation are not in keeping with the historic landscape as it would entirely remove the VIP terminal building from the western side of the airport, reducing its public visibility.

The alternative options which do not require potential land acquisition and are located closer to the existing airport infrastructure.

Originally, it was proposed that this option would be taken forward for stakeholder consultation. However, initial discussions with both TAV Construction and key stakeholder groups (7<sup>th</sup> April 2022) identified that this option is not favourable for either party and presents significant challenges due to land acquisition uncertainties. Following a discussion with Lenders it was agreed this option will not be taken forward for further consideration and stakeholder

consultation. There are other options which are preferable for all parties concerned. However, if during stakeholder consultation, this option will be mentioned as originally proposed for consultation, but was ultimately not taken forward; if the stakeholder consultation determined that there is interest in this option, then it can be retained for further consideration.

### 3.3 Summary

Following an evaluation of each of the options identified above, the resulting options have been selected to be carried forward for stakeholder engagement:

- Option 1.1: New international terminal located behind the VIP terminal building with a split-level entrance
- Option 2.2: VIP terminal building reconstructed, aligned to Zakarpatskaya St. in southern apron

Table 3.1 provides a summary of the adverse and beneficial impacts identified against the evaluation criteria for each of the options (socio-economic benefits have not been added as these are largely the same). Table 3.2, meanwhile, provides more detail on the heritage issues of the two preferred options.

**Table 3.1: Evaluation table (Adverse impacts in red, beneficial in green)**

Option	Operational Suitability	Constructability	Heritage
<p><b>Option 1.1: New international terminal located behind the VIP terminal, with a split-level entrance</b></p>	<ul style="list-style-type: none"> <li>● Split level arrivals and departures.</li> <li>● Passenger comfort standards met.</li> <li>● Integrated approach with the existing apron, taxiway, kerbside and terminal.</li> <li>● No requirement for passengers or planes to cross the apron/runways between the international and domestic terminals.</li> <li>● Does not meet required standard for life and fire safety, without significant modification to the façade of the VIP terminal.</li> </ul>	<ul style="list-style-type: none"> <li>● Potential issues with existing structural stability of the VIP terminal building.</li> <li>● Not seismically compliant – additional structural reinforcement to the VIP terminal building would be needed.</li> <li>● Significant works to the VIP terminal building would be needed to facilitate the passenger pick-up/drop-off and passenger flow.</li> </ul>	<ul style="list-style-type: none"> <li>● Spatial context of the VIP terminal building retained.</li> <li>● Adverse impacts associated with the access ramp in front of the VIP terminal building which detracts from the visual amenity of the building.</li> <li>● Adverse impacts to architectural detail of the VIP terminal building due to structural reinforcement needs.</li> <li>● Adverse impacts to the VIP terminal building through modifications for passenger flow, in particular the removal of windows and creation of open doorways.</li> </ul>
<p><b>Option 2.2: Replacement VIP terminal constructed, aligned to Zakarpatskaya St. in southern apron</b></p>	<ul style="list-style-type: none"> <li>● Split level arrivals and departures for the new terminal.</li> <li>● Passenger comfort standards met.</li> <li>● No requirement for passengers or planes to cross the apron/runways between the international and domestic terminals.</li> </ul>	<ul style="list-style-type: none"> <li>● Once reconstructed, the new VIP building can be built to meet seismic structural regulations which will increase longevity of the building.</li> <li>● Located adjacent to southern apron, meaning a new apron for the terminal would not be needed to be build.</li> <li>● Greater material use (with associated embodied carbon) due to building the new building.</li> </ul>	<ul style="list-style-type: none"> <li>● Adverse heritage impacts associated with removal of the current VIP terminal building.</li> <li>● Needle above the belvedere would potentially be retractable, rather than a permanent fixture, in order to meet safety requirements due to this location's proximity to the runways.</li> <li>● Retains the architectural features of the VIP building once reconstructed.</li> <li>● Orientation of the VIP terminal building remains as was, with key views from the airport.</li> <li>● Retains the architectural features of the VIP terminal building once reconstructed, and will incorporate historic features that have since been lost in the existing VIP terminal building (such as the first-floor balcony).</li> </ul>



**Table 3.2: VIP terminal building heritage summary**

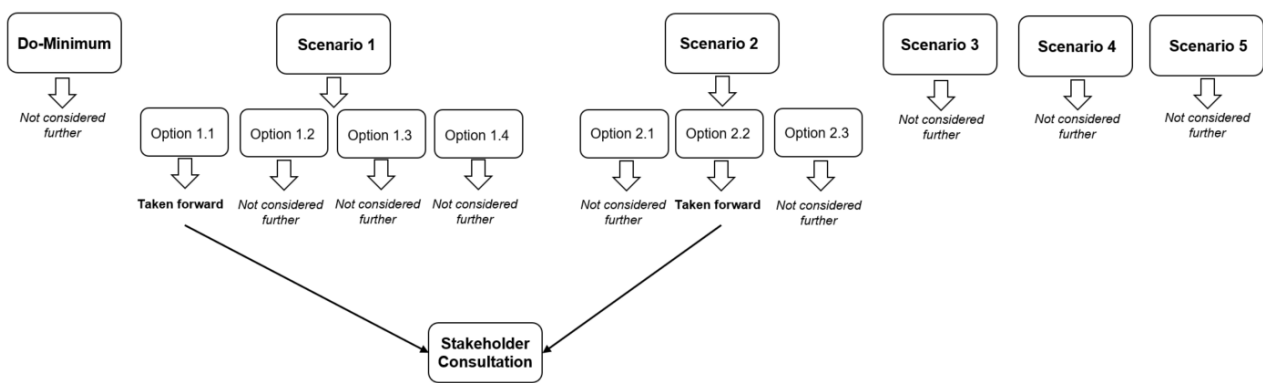
Scenario	Positive	Negative
Scenario 1, Option 1.1	<ul style="list-style-type: none"> <li>– Retains the VIP terminal building including aspects of its setting which form part of its historic spatial context, most importantly the alignment along Mailin Street.</li> <li>– Most architectural elements would be retained.</li> <li>– Retains fabric of the building.</li> </ul>	<ul style="list-style-type: none"> <li>– Adverse physical impacts to the fabric of the building due to structural work required for seismic compliance.</li> <li>– Loss of some architectural features due to alterations to doorways and windows to allow for effective throughflow of passengers.</li> <li>– Changes to the setting of the VIP terminal building due to the new terminal building that would obscure one or both of the west and east elevation and further detract from the building's historic context in an area of open land.</li> </ul>
Scenario 2, Option 2.2	<ul style="list-style-type: none"> <li>– Architectural proportions and features (including the pishtaq, belvedere, and architectural decoration) would be retained or reproduced.</li> <li>– Elements of the historic context which contribute to its cultural significance recreated including clear views of the western and eastern elevation.</li> <li>– Clear associations with the airport runway retained.</li> <li>– Internal space of the building (a central atrium, with two separate wings) reproduced.</li> <li>– Allows reproduction of lost elements of cultural significance (including the former loggia on the eastern elevation).</li> </ul>	<ul style="list-style-type: none"> <li>– Does not retain the building in its current location. This results in the loss of elements of its setting which form part of its historic spatial context, most importantly the alignment along Mailin Street.</li> <li>– Results in the demolition of the building. This results in the total loss of its actual fabric. The majority of the fabric of the building contributes little or nothing to the cultural significance of the VIP terminal building.</li> </ul>

## 4 Conclusion

### 4.1 Options for Stakeholder Consultation

This report has identified and evaluated spatial options available to locate a new international terminal at ALA, and where applicable, options relating to the VIP terminal. Potential scenarios have been identified and a high-level evaluation undertaken (Chapter 2) before concluding on a short list of scenarios to be considered further. Of the short-listed scenarios, potential options have been identified and further evaluated (Chapter 3), in consideration of the key criteria as detailed in Section 1.2. See Figure 4.1 below for a summary of this process.

**Figure 4.1: Optioneering process summary**



The evaluation of options in Table 3.1 and Table 3.2 indicates that all preferred options demonstrate a range of adverse and beneficial impacts across the operational suitability, constructability and heritage criteria. Option 1.1 and Option 2.2 will be taken forward to stakeholder consultation where they will be considered in more detail.

### 4.2 Next Steps

Options 1.1 and 2.2 will be presented to stakeholders at the next phase of stakeholder engagement whereby a preferred option will be selected, based on the criteria in this report and stakeholder responses. A final phase of design modification will then take place, focussed on the construction methodology and working measures specific to the preferred option. This final option will then be presented to stakeholders, with a record of all stakeholder consultation and the option selection process captured in an option selection report.

