Stáisiún Uí Chonghaile, Baile Átha Cliath 1, D01 V6V6
Connolly Station, Dublin 1, D01 V6V6
T 01 703 4293 **E** foi@irishrail.ie **W** www.irishrail.ie

Iarnród Éireann
Irish Rail

13th June 2022

[redacted]

Email: [redacted]

Re: FOI request IE_FOI_582

Dear [redacted],

I refer to your request dated 10th May 2022 made under the Freedom of Information Act 2014, which was received on by my office on that date, for records held by Iarnród Éireann.

Request:

- Copy of:
  - 1. Any and all feasibility studies carried out by, presented to, or available to Irish Rail in relation to Kishogue train station
  - 2. Any and all feasibility studies carried out by, presented to, or available to Irish Rail in relation to the DartWest project
  - 3. Any and all feasibility studies carried out by, presented to, or available to Irish Rail in relation to the closure of level crossings as part of the DartWest project.

Response:

I, Mr. Mike Finan, Decision Maker have now made a final decision to part grant your request on 13th June 2022.

Please find response document and schedule of records attached.

Rights of appeal

In the event that you are not happy with this decision you can make an appeal in relation to this matter, you can do so by writing to the FOI Unit, Corporate Communications, Iarnród Éireann Irish Rail, Connolly Station, Amiens St, Dublin 1 or by e-mail to foi@irishrail.ie. You should make your appeal within 4 weeks (20 working days) from the date of this notification, where a day is defined as a working day excluding, the weekend and public holidays, however, the making of a late appeal may be permitted in appropriate circumstances.
The appeal will involve a complete reconsideration of the matter by a more senior member of the staff of this body.

Should you have any questions or concerns regarding the above, please contact the FOI Officer on [redacted] or by email at foi@irishrail.ie

Yours sincerely,

PP

Mr. Mike Finan, FOI Decision Maker, Iarnród Éireann

Freedom of Information Request:
Schedule of Records for IE_FOI_582 : Summary for Decision Making

Record No.	Date of Record	Brief Description	No. of Pages	Decision: Grant/Part Grant/Refuse	Section of Act if applicable	Record Edited/Identify Deletions
		Kishogue Documents				
1		2101_Phase 02 Report_Vol 1_Issue 2	83	Part Grant	S 36 (1) (c)	information whose disclosure could prejudice the conduct or outcome of contractual or other negotiations.
2		2101_Phase 02 Report_Vol 2_Issue 2	45	Grant	~	~
3		BU-TTA-01169-v01-S3-APP-3-KISHOGUE	33	Grant	~	~
4		IE.22.0022 - Kishogue Station Opening	9	Part Grant	S 36 (1) (c)	information whose disclosure could prejudice the conduct or outcome of contractual or other negotiations.
5		Kishogue - Scoping Discussion Presentation	38	Part Grant	S 36 (1) (c)	information whose disclosure could prejudice the conduct or outcome of contractual or other negotiations.
		DART West Documents				
6		Docklands Station Option Study Report	72	Part Grant	S 36 (1) (c)	information whose disclosure could prejudice the conduct or outcome of contractual or other negotiations.
7		DART+ DART+ West Public Consultation No. 2 - Useful Materials and Downloads (dartplus.ie)	Link	Grant	~	~

Signed:
Sue Stanley
Freedom of Information / Data Protection Office

Appendix 3. Kishogue

Contents

1. Purpose and scope of assessment

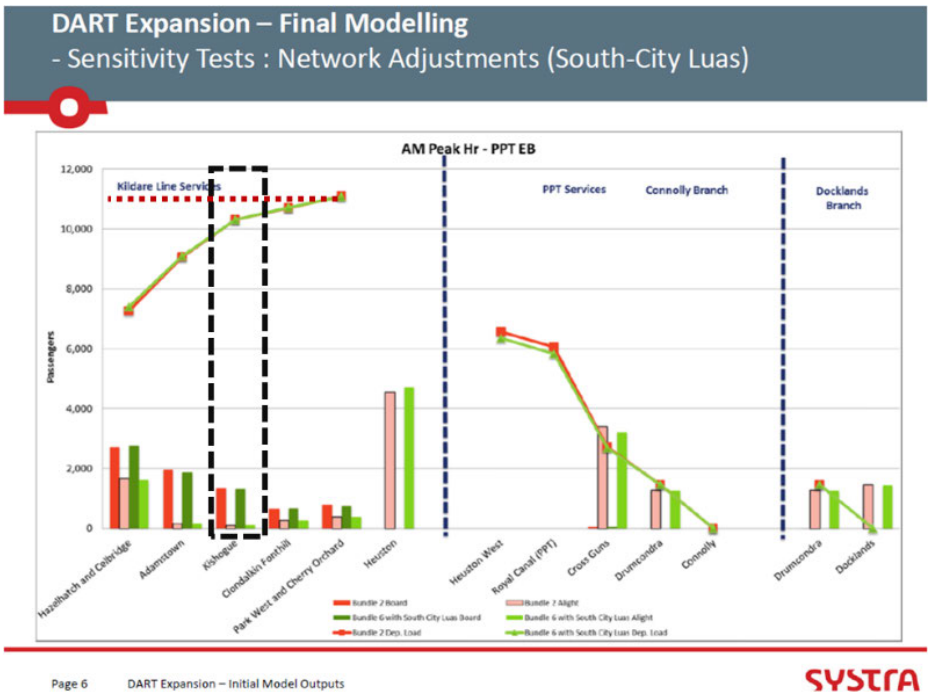
The following analysis comprises the station of Kishogue.

Following sections summarize the analysis, which is developed as shown in the attached tables and drawings.

2. Capacity review summary

2.1. Passengers data

Further explained in report main body.



AM Scenario

	Boarding	Alighting	Total	Boarding	Alighting	Total
Hazelhatch	2 800	1 800	4 600	1 150	1 150	2 300
Adamstown	2 000	200	2 200	550	550	1 100
Kishogue	1 300	180	1 480	370	370	740
Fonthill	750	250	1 000	250	250	500
Park West	850	400	1 250	313	313	625
Kylemore	850	400	1 250	313	313	625
Heuston West	500	1 300	1 800	450	450	900
Cabra	425	625	1 050	263	263	525

PM Scenario

	Boarding	Alighting	Total	Boarding	Alighting	Total
Hazelhatch	1 150	1 150	2 300	1 800	2 800	4 600
Adamstown	550	550	1 100	200	2 000	2 200
Kishogue	370	370	740	180	1 300	1 480
Fonthill	250	250	500	250	750	1 000
Park West	313	313	625	400	850	1 250
Kylemore	313	313	625	400	850	1 250
Heuston West	450	450	900	1 300	500	1 800
Cabra	263	263	525	625	425	1 050

2.2. Capacity report

- **Platform width:** No issue detected.
- **Stairs width:** No issue detected.
- **Gateline capacity:** No issue detected.

  Considered 4min. to allow exit, instead of two.
- **Concourse unpaid side:** No issue detected.

2.3. Fire safety report

2.3.1. General considerations and vehicle access

1. Fire vehicles might approach the station and stand, both on the upper bridge level, or on the existing car part at the south side on ground level. The station project considered a car park are at the south like the one in Adamstown, which is partly available.
2. .. UP DART platform has a single exit point, through the ramp. Down Fast platform (south side) may have additional exits to the car park area.
3. The central island platform has two stairs exist that converge in the concourse space. Sizing calculations consider one of them is blocked.

Above points 2 and 3 are identified as subject of Fire Risk analysis to be identified in the Emergency Plans of the station, in case the exits are blocked, and passengers should stay in the platform area, and require guidance to get away of hazards and be ultimately evacuated.

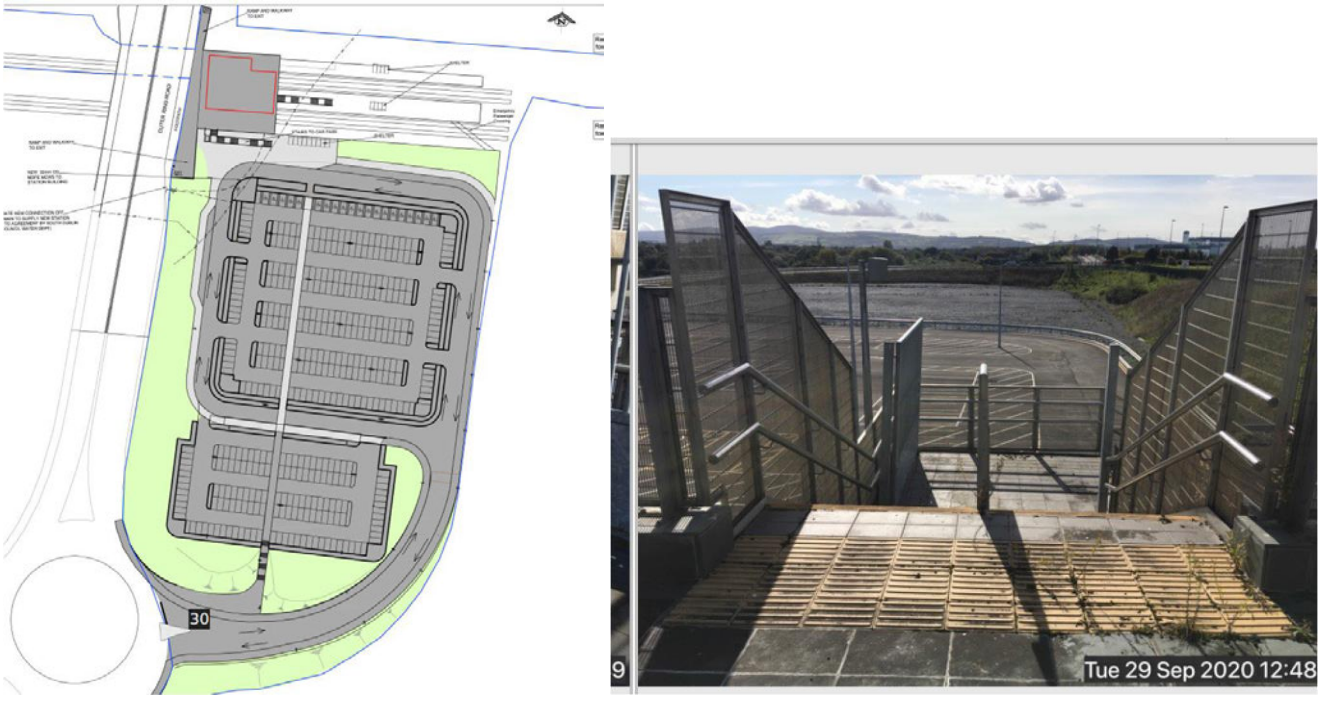


Figure – Original car park plan and existing condition

2.3.2. Fire on a train scenario. AM Peak

- **UP Platform:** Complies when considering additional exit.
  - To exit platform:

From Up DART platform	Travel time + Waiting times		**8.00**	**5.57**	**min.**
	Egress capacity from platform (Ep)			**194.00**	**persons per min.**

  - To exit station:

From Up DART platform	Travel time + Waiting times (M)		**12.00**	**11.70**	**min.**
	Waiting time at fare gates (Wfg)	flow from concourse/fare gate restriction		**3.95**	**min.**

Comment:

Up platform has a single exit point to the ramp, this would delay the exit times above acceptable limits (11 min for platform, total 17.15 min)

For that reason, the calculations already show the option of having that new exit. It is feasible to add that new exit to the adjoining ground.

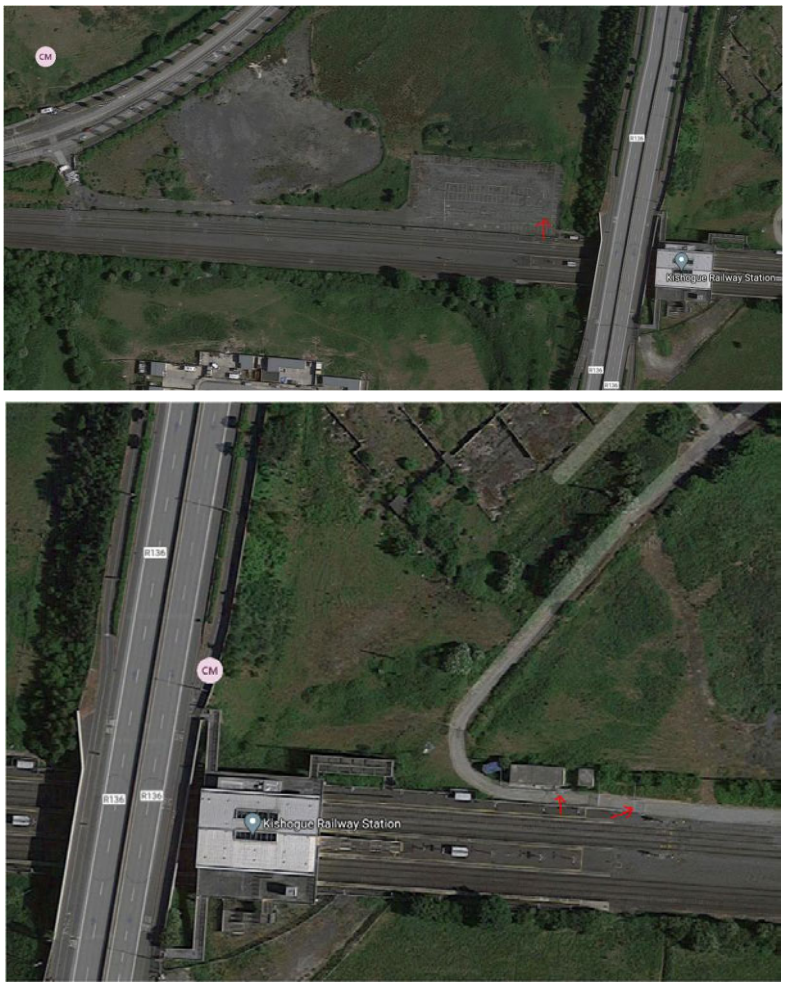


Figure – Views of the station and possible additional exits

To further improve the total time of evacuation to the final exit, apart from the above comment, there is also option to use the external corridor north of concourse level which is currently closed (alternative route marked below). But note the new exit from platform is needed, however.

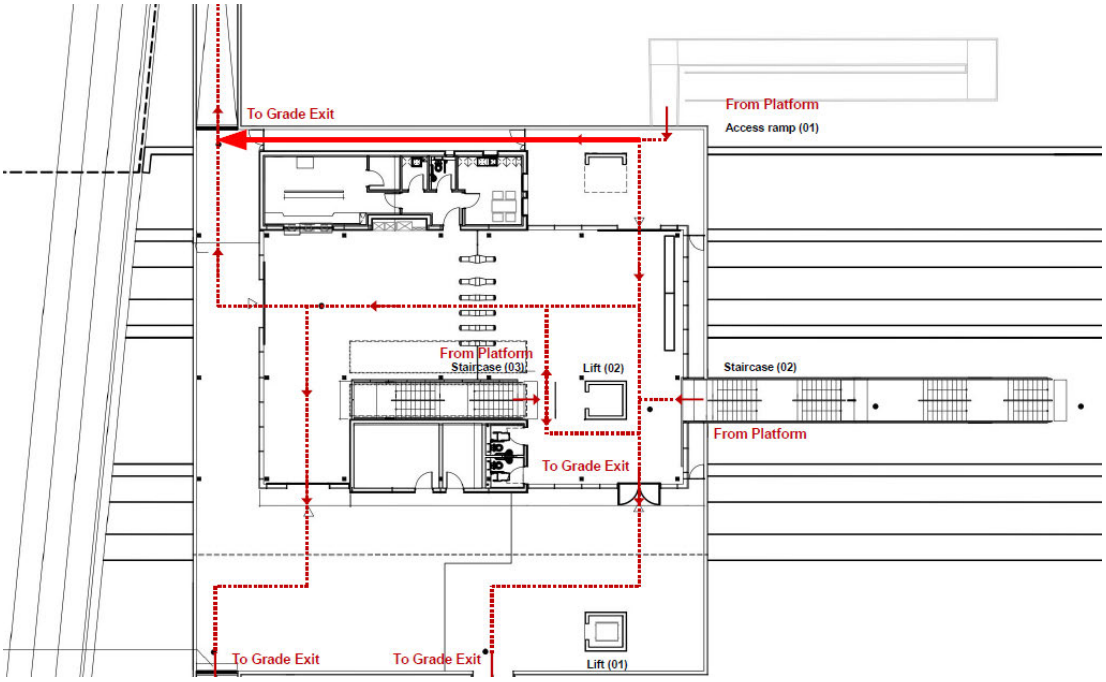


Figure – Concourse level plan

- **Down Platform:** No issue detected.
  - To exit platform:

From Down DART island platform	Travel time + Waiting times		**8.00**	**1.54**	**min.**

  - To exit station:

From Down DART island platform (1)	Travel time + Waiting times (M)		**12.00**	**7.48**	**min.**

50% of passengers from DOWN platform are considered to go through the south concourse exit, not needing to use fare gates.

2.3.3. Fire on a train scenario. PM Peak

- **UP Platform:** No issue detected.
  - To exit platform:

From Up DART platform	Travel time + Waiting times		**8.00**	**2.32**	**min.**

  - To exit station:

From Up DART platform	Travel time + Waiting times (M)		**12.00**	**4.51**	**min.**

- **Down Platform:** No issue detected.

- To exit platform:

From Down DART island platform (1)	Travel time + Waiting times		**8.00**	**3.60**	**min.**

- To exit station:

From Down DART island platform	Travel time + Waiting times (M)		**12.00**	**7.39**	**min.**

Recommendation: this case is worse for DOWN platform.

2.3.4. Fire within station structure. PM Peak

In this case, due to station layout, worst scenario could be AM, so both have been analysed. The PM scenario will check DOWN platform while AM will check UP, worse case for each.

- **Down Platform:** No issue detected.
  - To exit platform:

From Down DART island platform	Travel time + Waiting times (M)		**8.00**	**2.43**	**min.**

  - To exit station:

From Down DART island platform (1)	Travel time + Waiting times (M)		**12.00**	**4.42**	**min.**

2.3.5. Fire within station structure. AM Peak

In this case, due to station layout, worst scenario could be AM, so both have been analysed. The PM scenario will check DOWN platform while AM will check UP.

- **UP Platform:** No issue detected.
  - To exit platform:

From UP DART island platform	Travel time + Waiting times (M)		**8.00**	**2.38**	**min.**

  - To exit station:

From UP DART island platform	Travel time + Waiting times (M)		**12.00**	**5.55**	**min.**

2.4. Accessibility report

Due to the existence of a temporary fence, it was not possible to check the measures of the platform widths.

There is no barrier at the end of platforms before maintenance ramps. It is recommended to install them in accordance with CCE-TMS-345.

At ramp exit, a barrier should be installed as well because it is perpendicular to platform.

Temporary fence

No barrier at platform end

The width of stairs (01, 02 and 03) does not comply conditions for new buildings and PRM TSI regulation, but they do with existing condition requirements (>1000mm). A renewal of station could mean that these aspects should be achieved.

In relation with Platform 4 (up DART) which is connected to concourse by ramp, it may be considered that an additional stair route is needed, unless boundary limits of other constraints, makes it not feasible. As referred by Technical Guidance Document B:

> Section 2 - Access and Use of existing buildings other than dwellings:
>
> 2.3.4.4 Internal ramps
>
> The guidance in 1.3.4.4 should be followed except:
>
> (g) where it is not practicable to provide a stepped access route in addition to a ramp where the rise of the ramp is greater than 300 mm (refer to1.1.3.4 (h)) then a ramp alone will be sufficient.

2.5. Conclusions

According to the scope of this study, the Kishogue station sizing is considered adequate for its future function, with some issues as referred in the above comments, particularly to the Fire Risk issues identified in above section 2.3.1. and 2.3.2.

Also note Accessibility requirements in section 2.4.

Refer to other general matters as explained in the main body of this report.

3.A. Capacity report and plans

Station **Kishogue**

		Peak 1 hour passengers load	Peak 15 min passengers load	Peak 5 min passengers load	Average platform load per minute	Train service Headway (min)	Platform load per headway (P)	Platform length (m)	Platform load proportion	Passenger level of service	Required Platform width (m)	Existing (m)	
Platform assess	Conversion coefficient		0.27	0.4	0.2		Pas. /min xheadway			m2/pass			
Down DART island platform [3] AM Peak	**Boarding**	370	99.9	39.96	**7.992**	**3.75**	**59.94**	**174**	**35%**	**0.93**			
	Alighting	370	99.9	39.96	**7.992**								
	Total Load	**740**	**199.8**	**79.92**	**15.984**						1.45	**3.75**	(1)
UP DART platform [4] AM Peak	**Boarding**	1300	351	140.4	**28.08**	**3.75**	**119.88**	**174**					
	Alighting	180	48.6	19.44	**3.888**								
	Total Load	**1480**	**399.6**	**159.84**	**31.968**						1.90	**3**	(2)
Down DART island platform [3] PM Peak	**Boarding**	180	48.6	19.44	**3.888**	**3.75**	**119.88**	**174**					
	Alighting	1300	351	140.4	**28.08**								
	Total Load	**1480**	**399.6**	**159.84**	**31.968**						1.90	**3.75**	(1)
UP DART platform [4] PM Peak	**Boarding**	370	99.9	39.96	**7.992**	**3.75**	**59.94**	**174**					
	Alighting	370	99.9	39.96	**7.992**								
	Total Load	**740**	**199.8**	**79.92**	**15.984**						1.45	**3**	(2)

	Passenger level of service	Required width (m)	Existing (m)	
Ramp UP DART platform (AM Peak)	**40**	**pas/min/m width**		
		1.40	**1.97**	
Stairs Down DART platform (PM Peak)	**28**	**pas/min/m width**	**pas/min/m width**	
		1.14	**2.24**	(3)

	Number of exiting passengers	Passenger level of service	Required number of gateways	Existing gateways	
Gateline capacity (AM Peak)	**37.13**	**25**	**n[a]**	**n[a]**	
			4.00	**5**	(4)
Gateline capacity (PM Peak)	**112.73**	**25**	**n[a]**	**n[a]**	
			4.00	**5**	(4)

	Passenger level of service	Required concourse unpaid area	Existing concourse unpaid area
Concourse (unpaid side)	N/A	**m2**	**m2**
		39.96	**150.3**

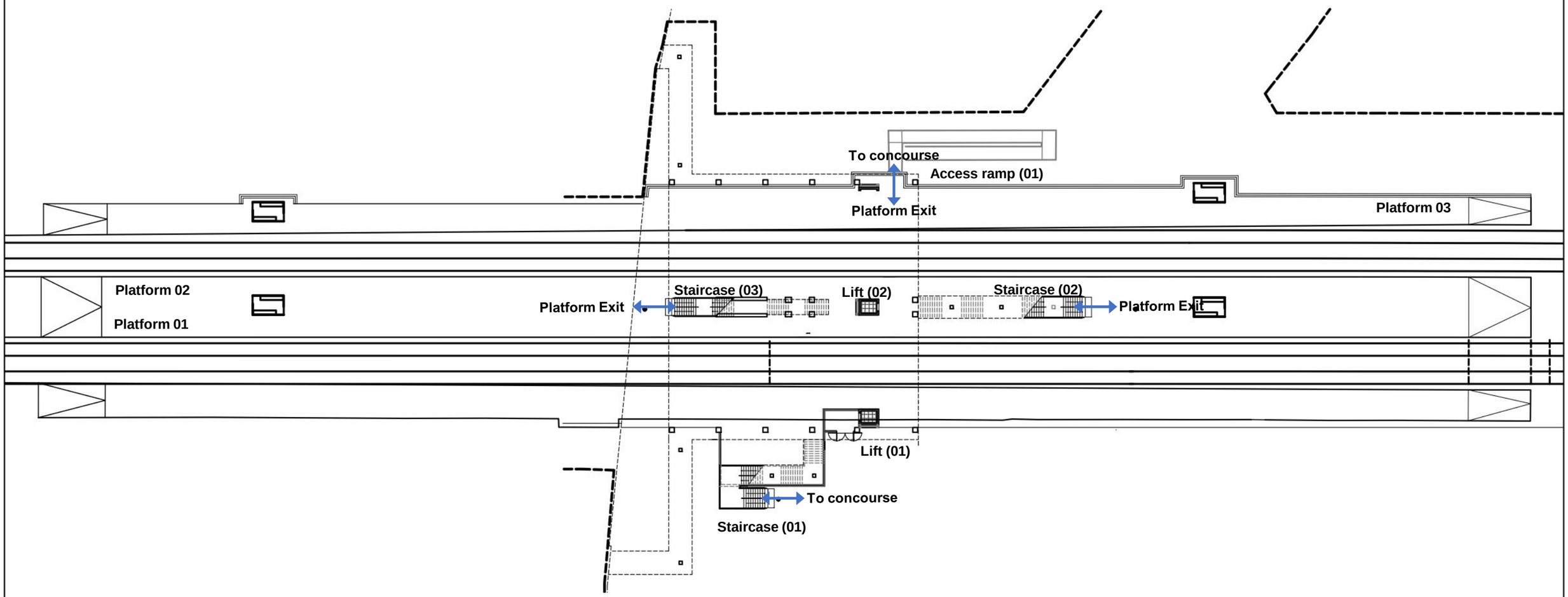
(1) Total width of central platform is 7.5m. Divided by two, 3.75m. The shelters are considered as a limited obstacle.

(2) Total width of side platform is 3.05m. Shelters are considered as a limited obstacle.

(3) Only one considered. The other was shut, as seen in site visit.

(4) Exit time considered is 4min. In London Underground defined as 2min.

- Meets the requirements
- Partially meets the requirements
- Does not meet requirements, but modifications are feasible
- Does not meet requirements



KISHIOGUE

PLATFORM PLAN

scale 1:500

Access ramp (01)

Platform Exit
To concourse

Platform 03

Platform 02

Staircase (03)

Platform Exit
To concourse

Lift (02)

Staircase (02)

Platform Exit
To concourse

Platform 01

Lift (01)

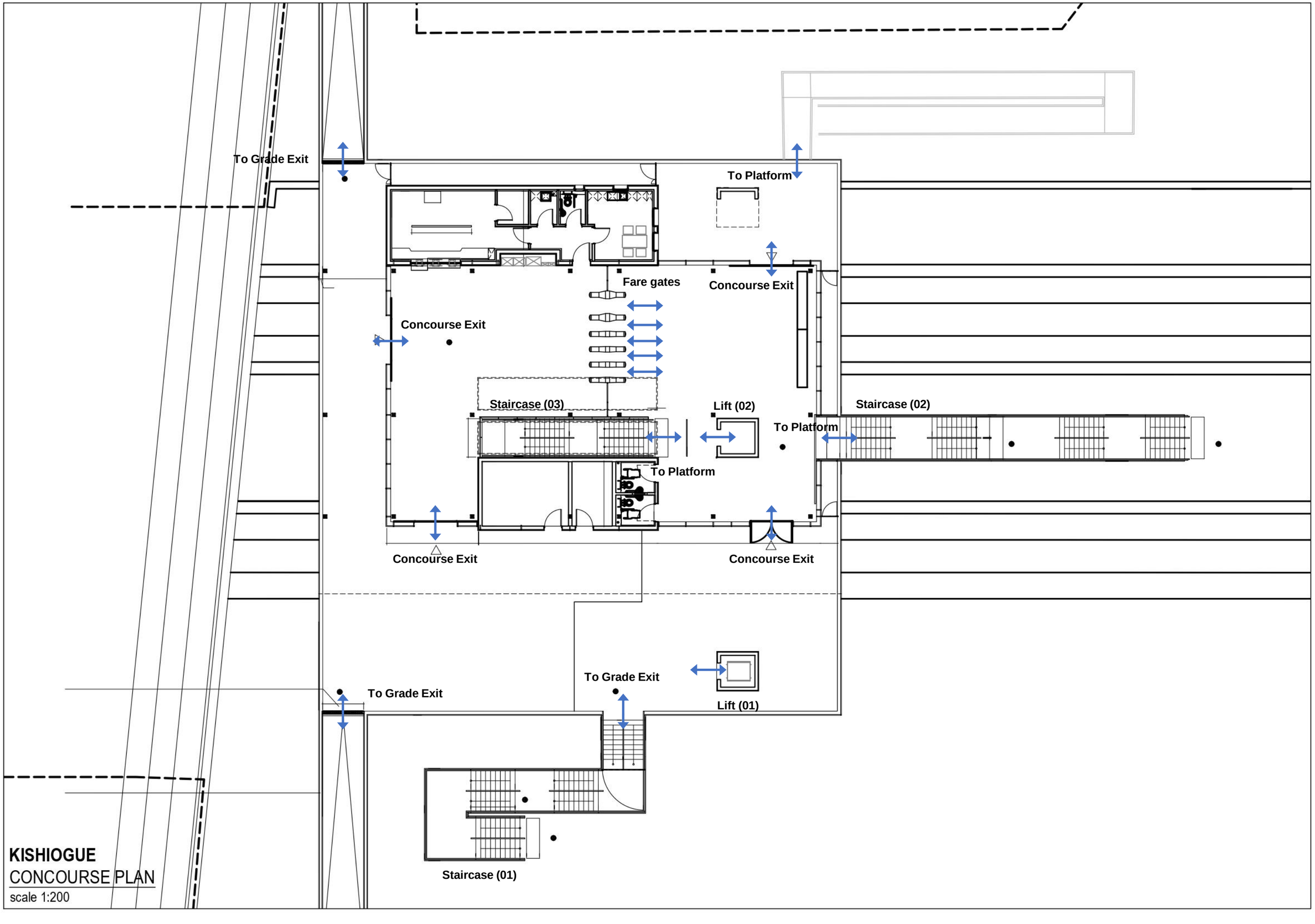
To concourse

Staircase (01)

KISHIOGUE

PLATFORM PLAN

scale 1:200


To Grade Exit
To Platform
Fare gates
Concourse Exit
Concourse Exit
Staircase (03)
Lift (02)
Staircase (02)
To Platform
To Platform
Concourse Exit
Concourse Exit
To Grade Exit
To Grade Exit
Lift (01)
Staircase (01)
KISHIOGUE
CONCOURSE PLAN
scale 1:200

3.B. Fire Safety report and plans

Station	Kishogue							
Station assess				**Formula**	**Necessary**	**Current**	**Unit**	**Comment**
General considerations	**Further distance to exit**	**Down DART island platform**	Maximum 250m (GFP-EBRSS)		250.00	**73.6**	**m.**	
		Up DART platform	Maximum 250m (GFP-EBRSS)		250.00	**103.1**	**m.**	
Vehicle access		Building data	Volume of building			3018.44	**m3**	
			Ground floor area			511.6	**m2**	
			Height of top storey			6	**m**	Considered from adjacent road
			Perimeter available			0	**m**	
			Total perimeter			96.8	**m**	
	Vehicle access to concourse (if concourse)	**High reach access**	If top storey over 10m	Table 5.1 Vehicle access to buildings TGD-B	N/A	**N/A**	**%**	
		Pump access	If top storey under 10m	Table 5.1 Vehicle access to buildings TGD-B	14.09%	**0.00%**	**%**	
	Vehicle access route	**High reach access**	If top storey over 10m	Table 5.2 Vehicle access to buildings TGD-B	N/A	**NO**	**YES/NO**	
		Pump access	If top storey under 10m	Table 5.2 Vehicle access to buildings TGD-B	YES	**N/A**	**YES/NO**	
Travel times and egress capacities (valid for all scenarios)	**Travel times to exit station from platform**	**Down DART island platform**	Longest travel distance to platform exit	x 38 m./min.		58.6	**m.**	
			Longest travel distance to platform exit if main staircase blocked	x 38 m./min.		92.3	**m.**	Considering Stair 02 blocked
			Vertical distance from platform exit to concourse	x 12 m./min.		6	**m.**	
			Longest travel distance from platform exit to concourse exit	x 38 m./min.		56.8	**m.**	
			Vertical distance from concourse to grade	x 12 m./min.		0	**m.**	Not needed. Exit at concourse level
			Longest travel distance from grade level to exit platorm	x 38 m./min.		0	**m.**	Not needed

	Travel time to exit platform (Tp)	**Distance to platform exit**		**1.54**	**min.**	
	Travel time to exit platform (Tp) Main exit blocked	**Distance to platform exit**		**2.43**	**min.**	Considering Stair 02 blocked
	Total travel time (Tpc)			**3.54**	**min.**	
	Total travel time (Tpc) Main exit blocked			**4.42**	**min.**	Considering Stair 02 blocked
Up DART platform	Longest travel distance to platform exit	x 38 m./min.		88.1	**m.**	
	Longest travel distance to platform exit if main staircase blocked	x 38 m./min.		88.1	**m.**	Only one stair in this platform
	Vertical distance from platform exit to concourse	x 12 m./min.		6	**m.**	
	Longest travel distance from platform exit to concourse exit	x 38 m./min.		64.3	**m.**	
	Vertical distance from concourse to grade	x 12 m./min.		0	**m.**	Not needed. Exit at concourse level
	Longest travel distance from grade level to exit platorm	x 38 m./min.		0	**m.**	Not needed
	Travel time to exit platform (Tp)	**Distance to platform exit**		**2.32**	**min.**	
	Travel time to exit platform (Tp) Main exit blocked	**Distance to platform exit**		**2.32**	**min.**	
	Total travel time (Tp)			**4.51**	**min.**	
	Total travel time (Tpc) Main exit blocked			**4.51**	**min.**	

Egress capacity	**Down DART island platform**	Stairs to concourse	total width x 56		4.48	**m.**	Stair 02 coudl not be measured. Same width as stair 01 considered
		Emergency exit from platform	total width x 80		0	**m.**	
		Exit gate (if different from stairs to concourse)	total width x 80		0	**m.**	
		Egress capacity from platform (Ep)			**250.88**	**persons per min.**	
	Up DART platform	Stairs to concourse	total width x 56		1.75	**m.**	
		Emergency exit from platform	total width x 80		1.2	**m.**	**Considering a new exit at platform level**
		Exit gate (if different from stairs to concourse)	total width x 80		0	**m.**	
		Egress capacity from platform (Ep)			**194.00**	**persons per min.**	
	Concourse	Standard fare gates (<900mm)	nº gates x 50		4	**nº**	
		Wide fare gates (>900mm)	nº gates x 80		1	**nº**	
		Stairs from concourse to grade	total width x 56		0	**m.**	Not needed
		Exit gate	total width x 80		3.8	**m.**	

FIRE ON A TRAIN SCENARIO (AM Peak)	**Clearance time**	**Down DART island platform**	Egress flow time (Fp)	Occupancy load (Op)/ Plat. total egress capacity(Ep)		**0.20**	**min.**	
			Platform clearance time (P)	**Max. between Fp and travel Tp**		**1.54**	**min.**	
			Waiting time (Wp)	**Egress flow time (Fp) - Travel time (Tp)**		**NO QUEUING**	**min.**	If negative, no queuing to evacuate
		From Down DART island platform	Travel time + Waiting times		**8.00**	**1.54**	**min.**	
		Up DART platform	Egress flow time (Fp)	Occupancy load (Op)/ Plat. total egress capacity(Ep)		**5.57**	**min.**	
			Platform clearance time (P)	**Max. between Fp and travel Tp**		**5.57**	**min.**	
			Waiting time (Wp)	**Egress flow time (Fp) - Travel time (Tp)**		**3.25**	**min.**	If negative, no queuing to evacuate
		From Up DART platform	Travel time + Waiting times		**8.00**	**5.57**	**min.**	
		Concourse	Fare gate restriction (Efg)			**280.00**	**persons per min.**	
			Waiting time at fare gates (Wfg)	flow from concourse/fare gate restriction		**3.95**	**min.**	Taking 50% of passengers from DOWN Platform
			Concourse flow through stairs to grade (Fc)			**0.00**	**min.**	Not needed
			Waiting time stairs to grade (Wc)			**NO QUEUING**	**min.**	
			Concourse egress flow time grade exit (Fe)			**3.72**	**min.**	
			Waiting time grade exit (We)			**NO QUEUING**	**min.**	
	TOTAL TIME TO AN ULTIMATE PLACE OF SAFETY	**From Down DART island platform**	Travel time + Waiting times (M)		**12.00**	**7.48**	**min.**	
		From Up DART platform	Travel time + Waiting times (M)		**12.00**	**11.70**	**min.**	

FIRE ON A TRAIN SCENARIO (PM Peak)	**Clearance time**	**Down DART island platform**	Egress flow time (Fp)	Occupancy load (Op)/ Plat. total egress capacity(Ep)		**3.60**	**min.**	
			Platform clearance time (P)	**Max. between Fp and travel Tp**		**3.60**	**min.**	
			Waiting time (Wp)	**Egress flow time (Fp) - Travel time (Tp)**		**2.06**	**min.**	If negative, no queuing to evacuate
		From Down DART island platform	Travel time + Waiting times		**8.00**	**3.60**	**min.**	
		Up DART platform	Egress flow time (Fp)	Occupancy load (Op)/ Plat. total egress capacity(Ep)		**0.26**	**min.**	
			Platform clearance time (P)	**Max. between Fp and travel Tp**		**2.32**	**min.**	
			Waiting time (Wp)	**Egress flow time (Fp) - Travel time (Tp)**		**NO QUEUING**	**min.**	If negative, no queuing to evacuate
		From Up DART platform	Travel time + Waiting times		**8.00**	**2.32**	**min.**	
		Concourse	Fare gate restriction (Efg)			**280.00**	**persons per min.**	
			Waiting time at fare gates (Wfg)	flow from concourse/fare gate restriction		**1.79**	**min.**	Taking 50% of passengers from DOWN Platform
			Concourse flow through stairs to grade (Fc)			**0.00**	**min.**	Not needed
			Waiting time stairs to grade (Wc)			**NO QUEUING**	**min.**	
			Concourse egress flow time grade exit (Fe)			**3.14**	**min.**	Taking passengers from both platforms
			Waiting time grade exit (We)			**NO QUEUING**	**min.**	
	TOTAL TIME TO AN ULTIMATE PLACE OF SAFETY	**From Down DART island platform**	Travel time + Waiting times (M)		**12.00**	**7.39**	**min.**	
		From Up DART platform	Travel time + Waiting times (M)		**12.00**	**4.51**	**min.**	

FIRE WITHIN STATION STRUCTURE SCENARIO (PM Peak) **Main staircase (02) blocked scenario Clearance time**		**Down DART island platform**	Stairs to concourse	total width x 56		2.24	**m.**	Considering Stair 02 blocked
			Emergency exit from platform	total width x 80		0	**m.**	
			Exit gate (if different from stairs to concourse)	total width x 80		0	**m.**	
			Egress capacity from platform (Ep)			**125.44**	**persons per min.**	
			Egress flow time (Fp)	Occupancy load (Op)/ Plat. total egress capacity(Ep)		**1.86**	**min.**	
			Platform clearance time (P)	**Max. between Fp and travel Tp**		**2.43**	**min.**	
			Waiting time (Wp)	**Egress flow time (Fp) - Travel time (Tp)**		**NO QUEUING**	**min.**	If negative, no queuing to evacuate
	TOTAL TIME TO EVACUATE PLATFORM	**From Down DART island platform**	Travel time + Waiting times (M)		**8.00**	**2.43**	**min.**	
		Concourse	Fare gate restriction (Efg)			**280.00**	**persons per min.**	
			Waiting time at fare gates (Wfg)	flow from concourse/fare gate restriction		**NO QUEUING**	**min.**	Taking 50% of passengers from DOWN Platform
			Concourse flow through stairs to grade (Fc)			**0.00**	**min.**	Not needed
			Waiting time stairs to grade (Wc)			**NO QUEUING**	**min.**	
			Concourse egress flow time grade exit (Fe)			**1.15**	**min.**	
			Waiting time grade exit (We)			**NO QUEUING**	**min.**	
	TOTAL TIME TO AN ULTIMATE PLACE OF SAFETY	**From Down DART island platform**	Travel time + Waiting times (M)		**12.00**	**4.42**	**min.**	

FIRE WITHIN STATION STRUCTURE SCENARIO (AM Peak) **Main staircase blocked scenario Clearance time**		**UP DART island platform**	Stairs to concourse	total width x 56		1.75	**m.**	With main staircase blocked. No other staircase in Kishogue
			Emergency exit from platform	total width x 80		0	**m.**	
			Exit gate (if different from stairs to concourse)	total width x 80		0	**m.**	
			Egress capacity from platform (Ep)			**98.00**	**persons per min.**	
			Egress flow time (Fp)	Occupancy load (Op)/ Plat. total egress capacity(Ep)		**2.38**	**min.**	
			Platform clearance time (P)	**Max. between Fp and travel Tp**		**2.38**	**min.**	
			Waiting time (Wp)	**Egress flow time (Fp) - Travel time (Tp)**		**0.06**	**min.**	If negative, no queuing to evacuate
	TOTAL TIME TO EVACUATE PLATFORM	**From UP DART island platform**	Travel time + Waiting times (M)		**8.00**	**2.38**	**min.**	
		Concourse	Fare gate restriction (Efg)			**280.00**	**persons per min.**	
			Waiting time at fare gates (Wfg)	flow from concourse/fare gate restriction		**1.04**	**min.**	Taking 50% of passengers from DOWN Platform
			Concourse flow through stairs to grade (Fc)			**0.00**	**min.**	
			Waiting time stairs to grade (Wc)			**NO QUEUING**	**min.**	
			Concourse egress flow time grade exit (Fe)			**1.15**	**min.**	
			Waiting time grade exit (We)			**NO QUEUING**	**min.**	
	TOTAL TIME TO AN ULTIMATE PLACE OF SAFETY	**From UP DART island platform**	Travel time + Waiting times (M)		**12.00**	**5.55**	**min.**	

	Meets the requirements
	Partially meets the requirements
	Does not meet requirements, but modifications are feasible
	Does not meet requirements

Passengers data and stantards

Pedestrian travel speed (BS 9992, GFP – EBRSS)		
Platform	38	m/min.
Staircases	12	m/min.

Capacity (GFP – EBRSS)		
Platforms	60	persons/min./0.55 unit width
Staircases	40	persons/min./0.55 unit width

Evacuation times (GFP – EBRSS)		
Rafted platform	5	min.
Non Rafted platform	8	min.
Concourse-Rafted one direction	2	min.
Concourse-Rafted > one dir.	3	min.
Concourse-Non rafted one direction	3	min.
Concourse-Non rafted > one dir.	4	min.

Escape capacity (BS 9992, RSC-G-003-B)		
Horizontal passageways	80	persons/min.
Stairs	56	persons/min.
Ticket gates (supossed opened)	50	persons/gate
Ticket gates >900mm	80	persons/gate

AM Peak

Peak 1 hour passengers load		
UP DART TRACK Boarding	1300	persons
UP DART TRACK Alighting	180	persons
DOWN DART TRACK Boarding	370	persons
DOWN DART TRACK Alighting	370	persons
Peak 15 min. passengers load		
Conversion coefficient	0.27	
UP DART TRACK Boarding	351	persons
UP DART TRACK Alighting	48.6	persons
DOWN DART TRACK Boarding	99.9	persons
DOWN DART TRACK Alighting	99.9	persons
Peak 5 min. passengers load		
Conversion coefficient	0.4	
UP DART TRACK Boarding	140.4	persons
UP DART TRACK Alighting	19.44	persons
DOWN DART TRACK Boarding	39.96	persons
DOWN DART TRACK Alighting	39.96	persons
Peak 1 min. passengers load		
Conversion coefficient	0.2	
UP DART TRACK Boarding	28.08	persons
UP DART TRACK Alighting	3.888	persons
DOWN DART TRACK Boarding	7.992	persons
DOWN DART TRACK Alighting	7.992	persons

PM Peak

Peak 1 hour passengers load		
UP DART TRACK Boarding	370.00	persons
UP DART TRACK Alighting	370.00	persons
DOWN DART TRACK Boarding	180.00	persons
DOWN DART TRACK Alighting	1300.00	persons
Peak 15 min. passengers load		
Conversion coefficient	0.27	
UP DART TRACK Boarding	99.90	persons
UP DART TRACK Alighting	99.90	persons
DOWN DART TRACK Boarding	48.60	persons
DOWN DART TRACK Alighting	351.00	persons
Peak 5 min. passengers load		
Conversion coefficient	0.40	
UP DART TRACK Boarding	39.96	persons
UP DART TRACK Alighting	39.96	persons
DOWN DART TRACK Boarding	19.44	persons
DOWN DART TRACK Alighting	140.40	persons
Peak 1 min. passengers load		
Conversion coefficient	0.20	
UP DART TRACK Boarding	7.99	persons
UP DART TRACK Alighting	7.99	persons
DOWN DART TRACK Boarding	3.89	persons
DOWN DART TRACK Alighting	28.08	persons

Train load AM Peak Hr towards Heuston		
Total train load 1 hour	11200	persons
Nº trains per hour	16	trains
With a 25% increase	875	persons
Round up	**875**	persons

Train service headway	3.75	min.

Fire on train scenario AM Peak

Platform Load after gap in service		
UP DART TRACK	175.5	persons
DOWN DART TRACK	49.95	persons

Platform Load after 5min delay		
UP DART TRACK	204.75	persons
DOWN DART TRACK	58.275	persons

Total evacuation load for AM Scenario		
UP DART TRACK	1079.75	persons
DOWN DART TRACK	49.95	persons

Fire on train scenario PM Peak

Platform Load after gap in service		
UP DART TRACK	49.95	persons
DOWN DART TRACK	24.30	persons

Platform Load after 5min delay		
UP DART TRACK	58.28	persons
DOWN DART TRACK	28.35	persons

Total evacuation load for PM Scenario		
UP DART TRACK	49.95	persons
DOWN DART TRACK	903.35	persons

Fire within station structure PM Peak

Platform Load after gap in service		
UP DART TRACK	99.9	persons
DOWN DART TRACK	199.8	persons

Platform Load after 5min delay		
UP DART TRACK	116.55	persons
DOWN DART TRACK	233.1	persons

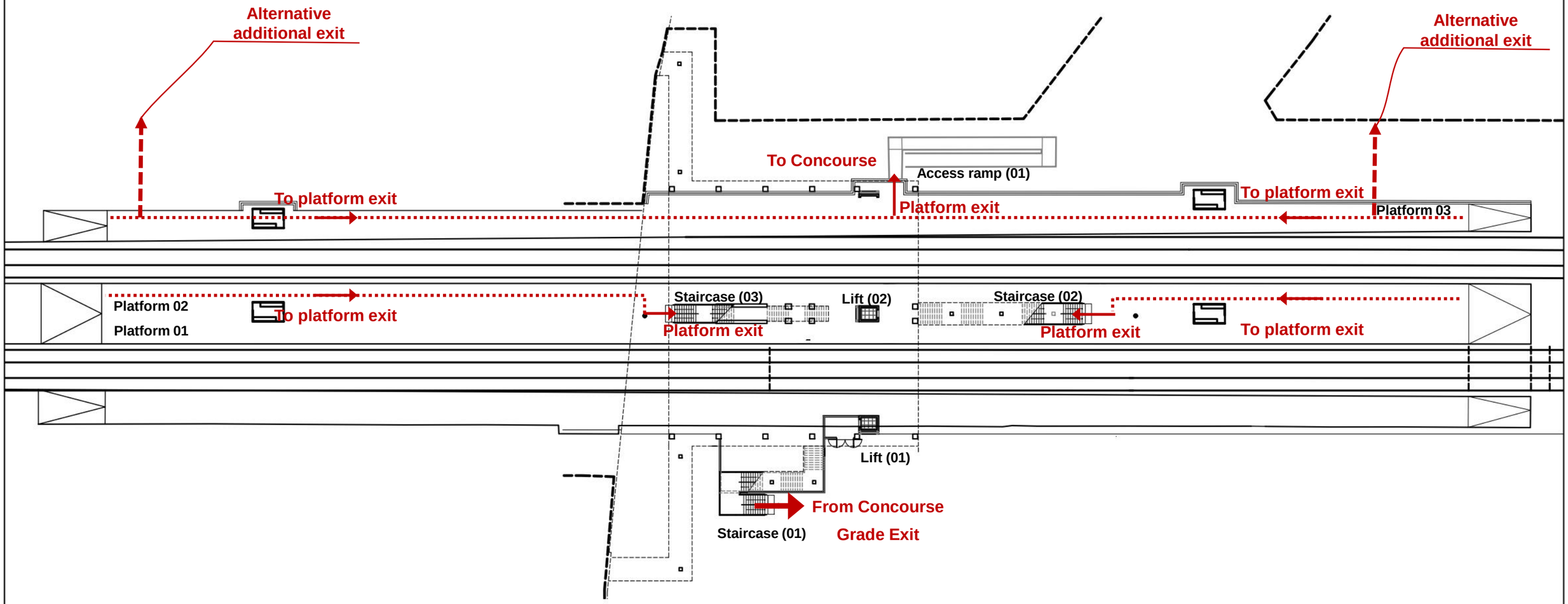
Total evacuation load		
UP DART TRACK	116.55	persons
DOWN DART TRACK	233.1	persons

Fire within station structure AM Peak

Platform Load after gap in service		
UP DART TRACK	199.8	persons
DOWN DART TRACK	99.9	persons

Platform Load after 5min delay		
UP DART TRACK	233.1	persons
DOWN DART TRACK	116.55	persons

Total evacuation load		
UP DART TRACK	233.1	persons
DOWN DART TRACK	116.55	persons



KISHIOGUE

PLATFORM PLAN

scale 1:500

Access ramp (01)

To Concourse

To platform exit

Platform exit

To platform exit

Platform 03

Platform 02

To platform exit

Staircase (03)

Lift (02)

Staircase (02)

To platform exit

Platform exit To Concourse

Platform exit To Concourse

Platform 01

Lift (01)

From Concourse

Grade Exit

Staircase (01)

KISHIOGUE

PLATFORM PLAN

scale 1:200

To Grade Exit

From Platform

Access ramp (01)

From Platform

Staircase (03)

Lift (02)

Staircase (02)

From Platform

To Grade Exit

To Grade Exit

To Grade Exit

Lift (01)

Staircase (01)

KISHIOGUE

CONCOURSE PLAN

scale 1:200

3.C. Accessibility report and plans

Station	Kishogue

Accesibility Assesment		Standard	New buildings	Existing buildings	Current
Car parking	Designated spaces	TGD M: 1.1.5	5.00%	At least 1 or set-down area	Feasible
Set-down and pick-up points	Setting down area when a road leads to building	TGD M: 1.1.6	Yes		Complies (9)
Locating and approaching station	Access route: Minimum headroom (mm)	TGD M: 1.1.3.1	2100		N/A
	Level access route: Minimum clear width (mm)	TGD M: 1.1.3.2	1500	1000	N/A
	Gently slope: Gradient between 1:50 and 1:20	TGD M: 1.1.3.3	Yes		Complies
	Gently sloped: Minimum clear width (mm)	TGD M: 1.1.3.3	1500	1000	Complies
	Gently sloped: Level landing 1800x1800mm	TGD M: 1.1.3.3	Yes	1500x1500	Complies
	Ramp access: Gradient max. 1:20	TGD M: 1.1.3.4	Yes	Max. 1:12 (4500mm max.)	N/A
	Ramp access: Minimum clear width (mm)	TGD M: 1.1.3.4	1500	1000	N/A
	Ramp access: Level landing 1800x1800mm	TGD M: 1.1.3.4	Yes	1500x1500	N/A
	Ramp access: Minimum clear width between handrails (mm)	TGD M: 1.1.3.4	1200		N/A
Doors	Minimum clear width	PRM TSI: 4.2.1.3; TGD M: 2.2.4	900	750	Complies
	Level landing in front of entrance (mm)	TGD M: 1.2.3 (b)	1800x1800	1500x1500	Complies (7)
	Unobstructed space between single leaf and wall	TGD M: 1.2.4.2	300		Complies
Floors	Avoid single steps		Yes		Complies
Ticket Sales Points - Booking Offices, Information and Custom Reference	Min. passage to ticket machine 900mm wide and 1250mm long	PRM TSI: 4.2.1.8	Yes	800mm width	Complies
Ticket Sales Points - Ticket Barriers	Turnstiles permit wheelchair users	PRM TSI: 4.4.1	Yes		Complies
	Min. One passage ticket control mach. 900mm wide and up to 1250mm long	PRM TSI: 4.2.1.8	Yes	800mm width	Complies
Lifts	Lift provided where no ramps	PRM TSI: 4.2.1.2.2	Yes		Complies
	Lift of type 2: 1100mm width and 1400mm length	PRM TSI: 4.2.1.2.2	Yes		Complies (2)
	Unobstructed space in front of entrance of 1800x1800mm	TGD M: 1.3.4.2; TGD M: 2.3.4.2	Yes	1500x1500mm	Complies (8)
	Lift clear opening of 900mm		Yes		Complies (2)

Ramps	Minimum clear width (mm)	TGD M: 1.1.3.4	1500		Complies
	Level landing top and bottom 1800x1800mm	TGD M: 1.1.3.4	Yes	1500x1500mm	Complies
	Level landing intermediate 1800x1800mm	TGD M: 1.1.3.4	Yes	1000mm long	Complies
	Minimum clear width between handrails (mm)	TGD M: 1.1.3.4	1200	1000	Complies
	Maximum width of channels (mm)	TGD M: 1.1.3.4	2500		Complies
	Stepped access where ramp rise is greater than 300mm	TGD M: 1.1.3.4	Yes	No	Complies (1)
	Gradient max. 1:20	TGD M: 1.1.3.4	Yes		Complies (1)
	Max. lenght for gradient 1:12 (mm)	Code of practice guidance		2000	Complies (1)
	Alternative access for wheelchairs when total rise > 2000mm (3)	TGD M: 1.1.3.4	Yes		Complies (1)
	Max. going of 10m with 1:20 gradient	TGD M: 2.1.3.4		Yes	Complies (1)
	Max. going of 4.5m with 1:12 gradient	TGD M: 2.1.3.4		Yes	Complies (1)
	Min. clearance where door opens onto a landing (mm)	TGD M: 2.1.3.4		1300	Complies (1)
	300mm extension of handrails in top and bottom	Code of practice guidance	Yes		Feasible
Steps and stairs	Minimum width (mm) between handrails	PRM TSI: 4.2.1.2.2	1600		Does not comply
	Minimum clear width (mm) handrails	TGD M: 1.1.3.5	1200		Does not comply (8)
	Alternative internal stairs for ambulant disable people	TGD M: 1.3.4.1.2; TGD M: 2.3.4.3	Yes	No	Complies
	Unobstructed landing length (mm)	TGD M: 1.1.3.5; TGD M: 2.1.3.5	1200	1000	Complies
	Max. flight between landings 1500mm (exception below)	TGD M: 1.1.3.5	Yes		Complies
	Single flight less than 18 steps and going greater than 350mm	TGD M: 1.1.3.5	Yes		Complies
	Rise between 150 and 180mm	TGD M: 1.1.3.5	Yes		Complies (1)
	Going between 300 and 450mm	TGD M: 1.1.3.5	Yes	More than 280mm	Complies (8)
	Continuous handrail	TGD M: 1.1.3.5	Yes		Complies (1)
	Minimum width between handrails (mm)	TGD M: 1.1.3.5	1000	1000	Complies
	Maximum width between handrails (mm)	TGD M: 1.1.3.5	2000		Complies
	Unobstructed length of landings (mm)	TGD M: 1.1.3.5; TGD M: 2.1.3.5 (b)	1200	1000	Complies
	Handrails on both sides	PRM TSI: 4.2.1.2.2	Yes		Complies
	300mm extension of handrails in top and bottom	TGD M: 1.1.3.6	Yes		Feasible

Platforms	Minimum danger area (mm) (4)	CCE-TMS-345	1100		Complies (11)
	Minimum freeway to danger area (mm)	PRM TSI: 4.2.1.12	1600		Complies (11)
	If obstacle <1m, minimum distance to danger area (mm)	PRM TSI: 4.2.1.12	800		Complies
	If obstacle >1m <10m, minimum distance to danger area (mm)	PRM TSI: 4.2.1.12	1200		Complies (11)
	Barrier when exit of lifts, stairs,… perpendicullar to platform	CCE-TMS-345	Yes		Feasible
	Barrier at the end pf platform where maintenance ramp	CCE-TMS-345	Yes		Feasible
Seating, Waiting Rooms and Shelters	Min. one area with seating facilities	PRM TSI: 4.2.1.7	Yes		Complies
	One area for wheelchairs	PRM TSI: 4.2.1.7	Yes		Complies
	Spaces for wheelchair users protected	Code of practice guidance	Yes		Complies
	Enough wheelchair spaces	Code of practice guidance	Yes		Complies
	Min. clearance before seating facilities	Code of practice guidance	1200		Complies
	Min. clear space for wheelchairs of 900x1350mm alongside fixed seats	Code of practice guidance	Yes		Complies
	Min. clearance of 2250x1050mm before spaces for wheelchairs	Code of practice guidance	Yes		Complies
	Shelter located along the rear of the platform or in center if island	Code of practice guidance	Yes		Complies
Toilets	If possible toilets provided	Code of practice guidance	Yes		Complies
	Accesible WC requirements (5)	TGD M: 1.4.3.1	Yes		Feasible
	At least one accesible unisex WC on each floor with WC facility	TGD M: 2.4.3 (a)		Yes	Feasible

(1) To be checked with further information

(2) Available data suggest that lifts fulfill this point

(3) 1.1.3.4 (i): "an alternative means of access for wheelchair users should be provided e.g. a platform lift, where the ramp is 1:20 or greater and the total rise of the ramp is greater than 2000 mm. A platform lift should conform to BS 6440:19993. Rationale: Ramps simply become too tiring for wheelchair users beyond this height."

(4) Considered a typical 1m for slow or DART trains. Danger area for fast speed trains might be up to 1.1m

(5) WC requirements calculation:

Gross floor area:	511.6 m^2
Nett/gross coeffitient	0.8
Net floor area:	**409.28** m^2

If net floor area > 200m^2 , wheelchair accesible WC is necessary with 1800x1800mm turning space
This is an existing building. As such toilets may have a 1500mm diameter, if the constraints do not allow to reconfigure them in other way.

(6) In this station, one of the staircasases, the central one below the concourse, does not meet the requirements of 300mm going. There is however one staircase to the same platform that fullfills this aspect. That will meet Section 1.3.4.3 (At least one set of stairs suitable for ambulant disabled people should be provided to access all floors...). Besides this is an existing building.

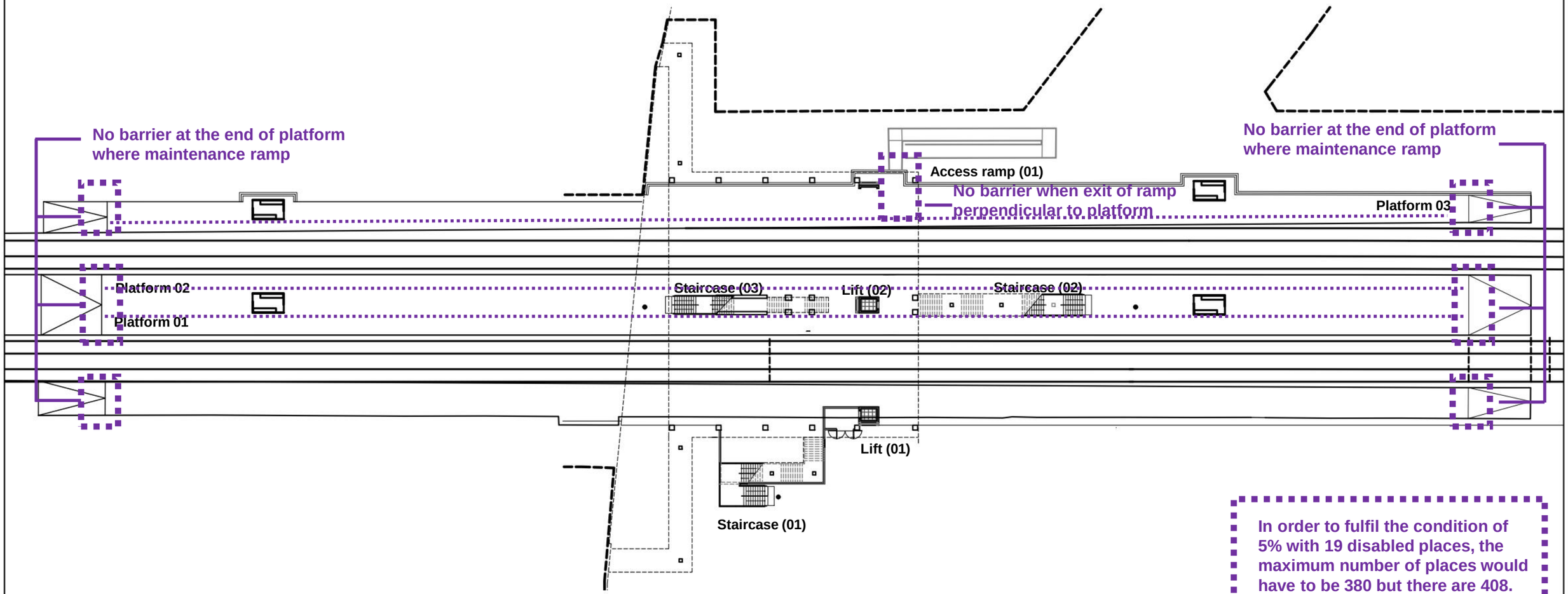
(7) All cases comply except one, located in the private area

(8) Existing building complies

(9) The side area under construction is assumed as a future set-down area

(10) In all platforms

(11) Existing temporary fence in platform 4. It was not possible to measure the total platform width



KISHIOGUE

PLATFORM PLAN

scale 1:500

In order to fulfil the condition of 5% with 19 disabled places, the maximum number of places would have to be 380 but there are 408. However, there seems to be a set down area. This is to be checked with further information.

Stairs width less than 1600mm
between handrails

Staircase (03)

Lift (02)

Staircase (02)

Stairs width less than 1200mm
between handrails

Less tan 1800x1800 turning
space

Lift (01)

Stairs width less than 1200mm
between handrails

Staircase (01)

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CONCOURSE PLAN

scale 1:200

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DART+ PROGRAMME

Maynooth Line & City Centre Enhancements

IDOM ROD C3 Projects

DART+ PROGRAMME

Maynooth Line and City Centre Enhancements

Iarnród Éireann

Docklands Station Options Study Report

MAY-MDC-ARC-RS01-RP-A-0001

30 November 2020

DART+: Maynooth Line and City Centre Enhancements

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Revision	Date	Description	Author	Checker	Reviewer	Approver
1.0	25/09/2020	S4 – Suitable for Stage Approval	Borja Aróstegui	Gonzalo Tello	Cristina Chalé	Tom McKay
2.0	30/11/2020	S3 – Draft Issue for Consultation	Borja Aróstegui	Mark Kilcullen	Cristina Chalé	Tom McKay
3.0	11/12/2020	S4 – For approval	Borja Aróstegui	Mark Kilcullen	Cristina Chalé	Tom McKay

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Appendix 5 – Multi-Criteria Assessment MCA2 - Matrix

Executive Summary

This report describes the process of options assessment of capacity enhancement proposals in respect of passenger services in the Docklands Area as part of the DART+ West project.

The study is carried out in a number of steps as follows:

- Characterisation of the Study Area;
- Consideration of Previous Studies;
- Options Identification and Multi-criteria Assessment Stage 1 (MCA1): High level pruning of options;
- Further development of likely options and Multi-criteria Assessment Stage 2 (MCA2):
- Selection of preferred option;

The existing Docklands Station was originally designed to be a temporary facility in anticipation of Dart Underground. It provided sort term relief to Connolly Station and facilitated the reopening of the Phoenix Park Tunnel line.

To provide capacity enhancement, the study examined alternative permanent locations and configurations for a station in the Docklands. It examined the scope for introducing connection between to the Maynooth Line (ML) the Phoenix Park Tunnel Line (PPL), and Northern Line (NL) and the Port Access (PA) as part of the newly electrified railway.

A multi-criteria analysis (MCA) mechanism was developed on the basis of "*Department of Transport Tourism and Sport (DTTAS), Common Appraisal Framework (CAF) for Transport Project and Programmes March 2016* (updated October 2020) for options assessment. It includes the following six appraisal criteria as follows: Economy, Integration, Environment, Accessibility and Social Inclusion, Safety and Physical Activity. The same assessment process was applied for the Docklands study as was undertaken for other elements of the project.

The study area includes the existing Docklands Station Plot, The Sheriff Street Area and the Area of the North Lotts which extend east from the Royal Canal and South to the Liffey. It is skirted by East Wall to the Northeast, Seville Place to the west and the Customs House Docks / IFSC area to the southeast.

Up to 12No. different sites have been identified as part of previous studies in the Docklands Area. An initial examination of these was carried out and less viable options were set aside. From this process a number of sites emerged with increased likelihood and alternative options were considered for each. The initial sifting process identified 5No. Station configurations for consideration as part of the MCA1 pruning process. Three of the options are in the Existing Docklands Station Site. Two of the options extend into the heart of the Dublin Docklands Development Area. Each of the options was developed to the point where a station configuration was identified and the trackwork on the approaches to the stations was resolved. The objective of connecting to the ML, the PPT, the NL and the DA was achieved for all station options although some required the implementation of fixed diamond crossings and one included a derogation to the track alignment standard. The options for selection for MCA1 are as follows:

Option	Location	Description
A1	Current Station Location	Retains existing platforms and canopy with additional platforms to east.
A2	At the end of Park Lane	New Station accessed off Sheriff Street.
A3	At the end of Park Lane	New Station accessed off Sheriff Street with Pedestrian and Cycle link to East Wall.
B1	Mayor Street Lower -	Platforms and tracks angled relative to Park Lane
B2	Mayor Street Lower	Platforms and tracks parallel to Park Lane

Options A3 and B2 were advanced to MCA2 stage.

Option A1, an extension of the existing station with 4No. additional platforms performed poorly at MCA1 in comparison to other options as follows: It exhibits poorer integration with other transport services than other options do; It is isolated from services and commercial development in the Docklands Area; it does not perform as well as other options as a terminal station; it exhibits limited hold capacity between the station and the Newcomen Link; it has poorer land use integration characteristics than other options.

Option A2, a new station comprising 5No, platforms located east of the existing Docklands Station performed poorly at MCA1 in comparison to others as follows: It exhibits poorer integration with other transport services than other options do; it is isolated from services and commercial development in the Docklands Area; it does not perform as well as other options as a terminal station; it exhibits limited hold capacity between the station and the Newcomen Link; It has poorer land use integration characteristics than other options.

Option B1, a new station extending south into lands owned by CIE between two blocks of the North Lotts performed well in comparison to other options but was undermined due to the skewed alignment of the station relative to the city block layout. The block of interest is subject to a previous planning permission for the development of multistorey commercial construction over a train station. Any proposed station on this site would need to accommodate such a commercial development should it progress in the future. The proposed configuration for Option B1 was less suitable for the implement of subsequent overhead construction than was Option B2.

The architectural design of Options A3 and B2 was advanced in sufficient detail to allow the selection of a preferred option. Both the trackwork on the approaches to the stations, the associated infrastructure and the stations themselves were developed in sufficient detail to permit an effective appraisal as part of MCA2. Detailed development reports are included in appendix to this document with extracted detail included for characterisation purposes as part of this report.

Option B2 has emerged as the preferred at the close of the MCA2 process. It is proposed to progress this option to reference design and to full environmental assessment. The table below presents distinguishing aspects Options A3 and B2 which lead to choice of the preferred.

Criteria	Option A3	Option B2
Economy: Capital Cost, Land Cost	€52.4 m ex VAT	€108.2 m ex VAT
Economy: Operating Cost		Below Ground
Economy: Operation / Functionality	Reduced Hold capacity cor terminal station	Better hole capacity for terminal station
Economy: Transport User Benefits	Remote	Central
Integration: Public Transport Integration	Remote	Better Transport Integration
Integration: Land Use Policy / Plan Integration	Poorer alignment with planning policy	Better Planning Integration
Environment: Landscape and Visual	Significant Visual Impact	Largely Below Ground
Environment: Soils and Geology	At Grade	Works below ground
Accessibility: Impact on Vulnerable Groups	More remote for vulnerable users	Central
Safety: Peds, Cyclists & Vulnerable Road users	More Peripheral to Ped/Cycle network	Better embedded within ped/cycle network

Abbreviations and Acronyms

The following definition of acronyms and abbreviations shall apply within this document:

TERM	DEFINITION
CAF	Common Appraisal Framework
CIÉ	Córas Iompair Éireann (Ireland's National Public Transport provider)
DART	Dublin Area Rapid Transit
DCDP	The Dublin City Development Plan
DU	Dart Underground
ERM	Eastern Regional Model
FSC	Fire Safety Certificate
GDA	Greater Dublin Area
GSWR	Great Southern & Western Railway
IÉ	Iarnród Éireann / Irish Rail
IFSC	Irish Financial Service Centre
IRCC	Irish Rail Control Centre
MCA	Multi-Criteria Analysis
MGWR	Midlands Great Western Railway
NTA	National Transport Authority
OSD	Over Station Development
ppmm	Passengers per minute per metre width
SDZ	Strategic Development Zone
TBM	Tunnel Boring Machine
TSS	Train Service Specification
TPHPD	Trains per hour per direction

1. Introduction

This report was prepared for DART+ West, by IDOM CONSULTING ENGINEERING & ARCHITECTURE, to document the second stage of the options selection process in respect of capacity enhancement in the Docklands area of the heavy rail railway network. The work was carried out on behalf of Iarnród Éireann.

The associated study was carried out as part of the DART + Programme and specifically the DART+ West Project. Iarnród Éireann propose to carry out Works to enhance the capacity of heavy rail services in the Docklands Area as part of DART + West. To this end a number of alternative options have been developed which meet the needs of the project to varying degrees. The project objectives are listed below.

1.1 Objectives

DART+ Programme's primary objective is to support urban compact growth and contribute to reducing transport congestion and emissions in the Dublin region by enhancing the heavy rail network between Dublin City Centre and the areas of Drogheda, Maynooth, Dunboyne, Celbridge and Greystones, providing a sustainable, safe, efficient, integrated and accessible public transport service along these corridors.

Sub-objectives of the DART+ Programme include:

- Cater for existing heavy rail travel demand and support long-term patronage growth along established rail corridors in the Greater Dublin Area through the provision of a higher frequency, higher capacity, electrified heavy rail service which supports sustainable economic development and population growth;
- Improve accessibility to jobs, education and other social and economic opportunities through the provision of improved inter-rail and inter-modal connectivity and integration with other public transport services;
- Enable further urban compact growth along existing rail corridors, unlock regeneration opportunities and more effective use of land in the Greater Dublin Area, for present and future generations, through the provision of a higher capacity heavy rail network;
- Deliver an efficient, sustainable, low carbon and climate resilient heavy rail network, which contributes to a reduction in congestion on the road network in the Greater Dublin Area and which supports the advancement of Ireland's transition to a low emissions transport system and delivery of Ireland's emission reduction targets;
- Provide a higher standard of customer experience including provision of clean, safe, modern vehicles and a reliable and punctual service with regulated and integrated fares.

Other project objectives include:

- Enhancement of connectivity in the Docklands area between the Maynooth line, the Phoenix Park Tunnel Line and the Northern Line while maintaining freight connection to Dublin Port.
- To provide capacity at Docklands to fulfil the requirements of the train service specification proposed for the DART+ Programme. This includes for the following TPHPD for each line: Maynooth Line - 0, Phoenix Park Tunnel Line - 10, Northern Line – 0.

1.2 Docklands Capacity Enhancement Study Area

The study area for the assessment is the Docklands located to the east of Dublin city centre, north of the river Liffey and specifically the lands of the operational railway and those in the ownership of Corus Iompar Éireann and adjacent lands which may be the subject of compulsory purchase as part of the project. The image in **Figure 1** provides an aerial view of the area concerned. It includes the following principal features:

- The terminal point for the existing MGWR line at the existing Docklands Station.

- A link between the GNWR and Dublin Port;
- A Link between the Northern Line and Dublin Port;
- Sidings off the link to Dublin Port;
- Temporary Parking facilities for HGVs;
- Undeveloped plots to the south of Sheriff Street which are part of the Dublin Docklands Development Area and have pre-existing permission for the development of multistorey development.

The study area is shown outlined in red in Figure 1. It is bounded to the west by the Royal Canal and to the Northwest by the Northern line. Sheriff Street defines a southern boundary to the site. Sheriff Street is elevated over much of its length but CIE property extends south into the Docklands Development Area and connection is currently available between the plots under the multiple span viaduct.

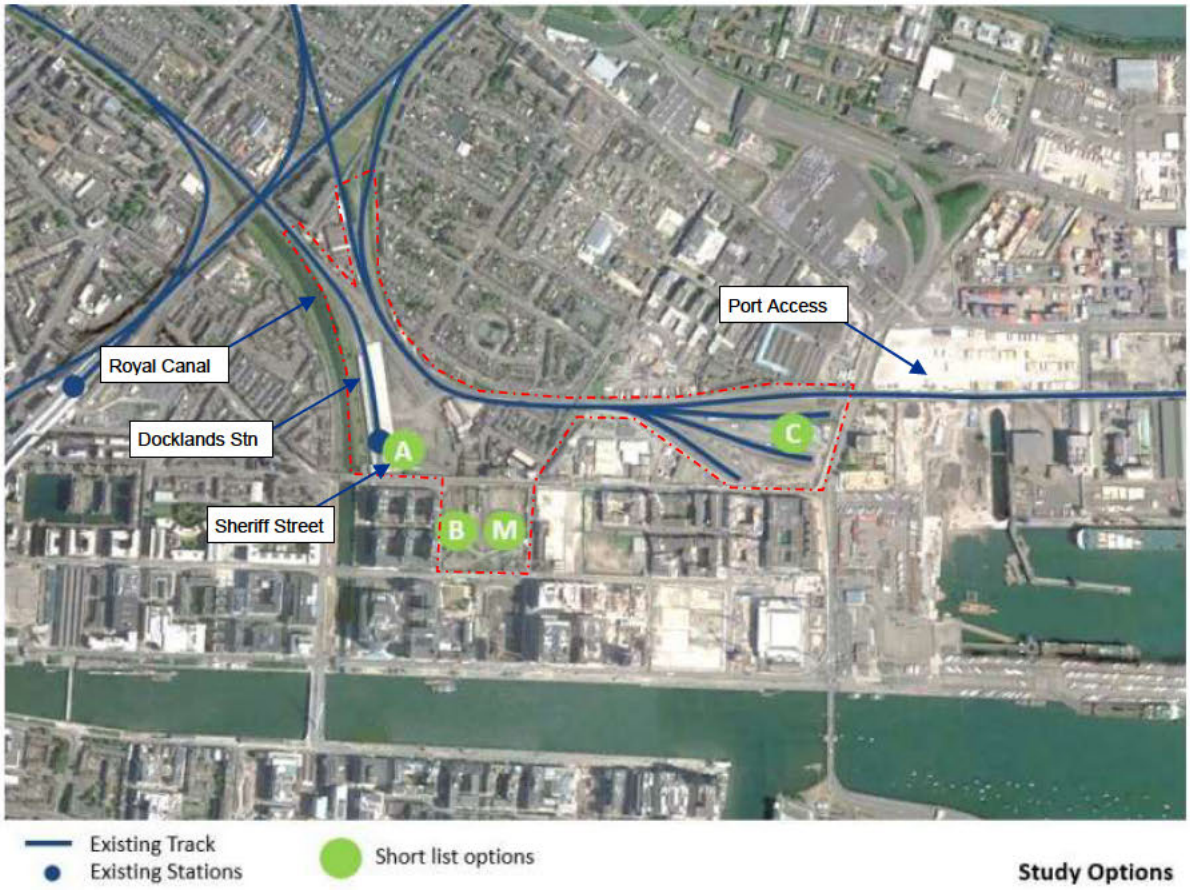


Figure 1.1 Docklands Study Area

There are a number of constraints associated with the study area including the following:

- The existing Docklands Station is connected to the Maynooth Line only. It is not practicable to connect the existing platforms to either the Phoenix Park Tunnel Line or the Northern Line;
- Clearances under the existing Sheriff Street viaduct are low. To accommodate electrification under the heritage structure the existing ground level would need to be lowered by at least 1.0m resulting in the need for any proposed development to be sealed against the ingress of ground water;
- The study area is located within and to the north of the Dublin Docklands Development Area. As a consequence, the location of a proposed station within the study area may be in varying proximity to the target customer base. This would need to be considered in the assessment of design options;
- Similarly, the potential for interchange with other modes of public transport needs to be considered in selection of the preferred station configuration and location;

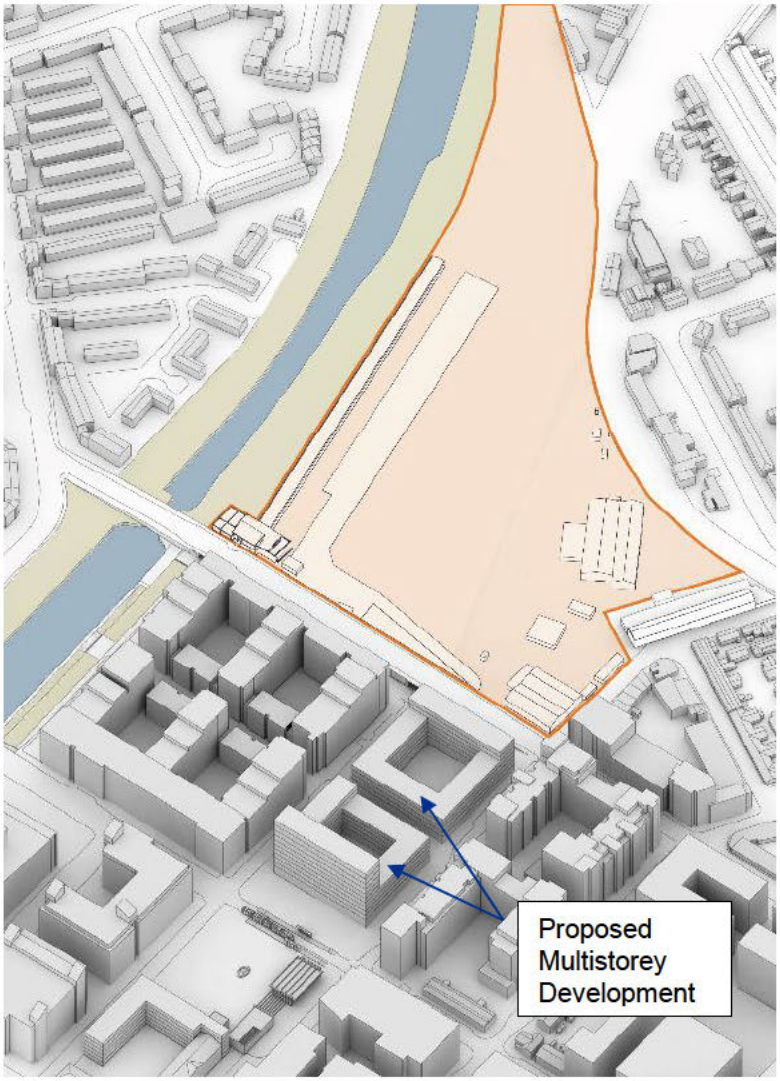
- Planning permission has been granted for multistorey development of sites B and M in **Figure 1.1** above. Any proposed station development at these locations will need to take account of the pre-existing permission and will need to be developed in such a way as to permit the subsequent development of the sites above the proposed train station consistent with that permission.

Docklands station plot is currently in the ownership of Córus Iompar Éireann. For many years the plot has served partly as the current Docklands Station with ancillary buildings and rail infrastructure including depots, workshops, etc. More recently part of the plot has been made available to the National Transport Authority (NTA) as a temporary coach park for the off-street layover of coaches. The current Docklands station building was developed in 2006 as the terminus of Western Commuter Train line. Sample photographs and a graphical representation of the layout of the site is provided below.

Plan Layout

Aerial View

Docklands Station Building



Docklands Plot Site Layout

1.2.1 Dublin City Development Plan 2016 to 2022

Proposals for capacity enhancement in the Docklands Area are aligned with the strategic approach of the Dublin City Development Plan (DCDP) 2016-2022.

One of the principles of the plan is to achieve a more sustainable and resilient city by creating a connected and legible city based on active streets and quality public spaces with a distinctive sense of place. Placemaking is particularly important in Strategic Development and Regeneration Areas (SDRAs).

The Docklands Area includes the North Lotts & Grand Canal Dock strategic development zone (SDZ) in SDRA-6 established in the Dublin City Development Plan 2016-2022.

The Docklands capacity enhancements at Sheriff Street, associated with DART+ West, will play a key role in improving citizens wellbeing and enhancing life, thus meeting the DCDP 2016-2022 vision goals. The project will reduce car use and traffic congestion, and it will also improve the quality of the city environment. These improvements should encourage the use of the public transport network. The connection of DART+ West with the Luas system at Spencer Dock will provide a more equitable city.

Figure 1.2 below provides illustration of the planning zones in the vicinity of the proposed study area.

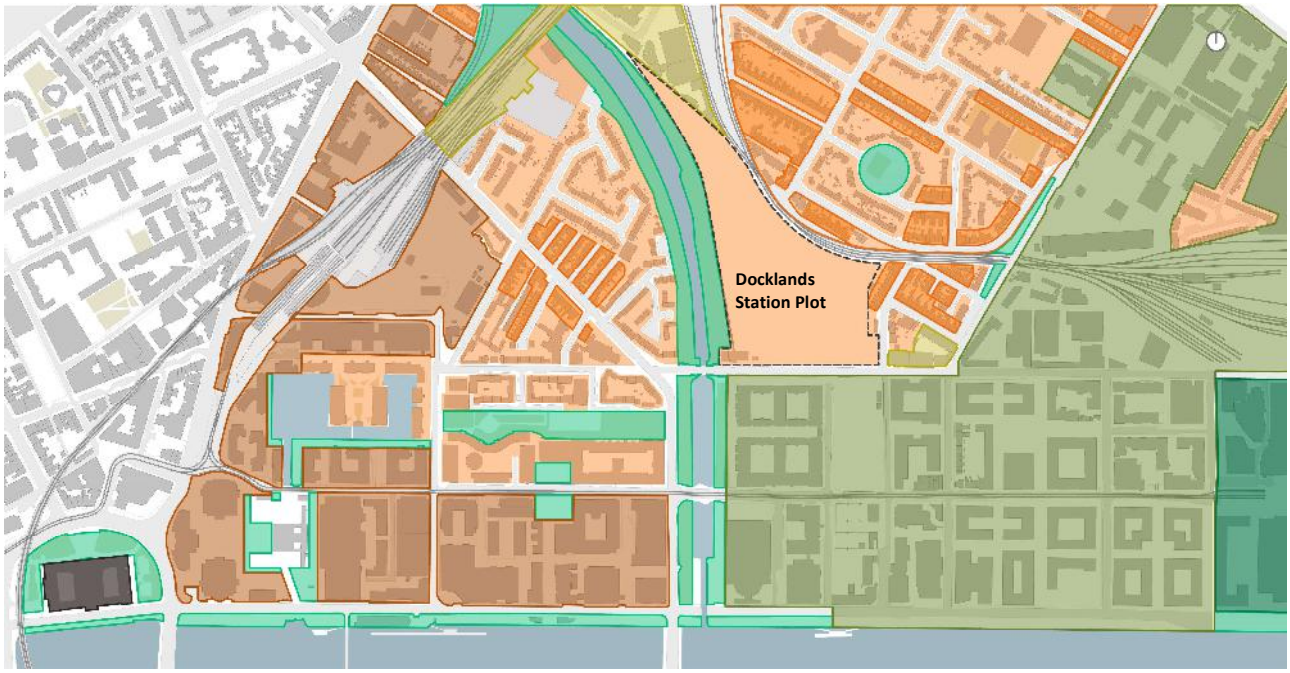


Figure 1.2 Dublin City Development Plan 2016-2022. Zoning Map.

Z1: To protect, provide and improve residential amenities.
Z2: To protect and or improve the amenities of residential conservation areas.
Z4: To provide for and improve mixed – services facilities.
Z5: To consolidate and facilitate the development of the control area, and to identify, reinforce, strengthen and protect its civic design character and dignity.
Z6: To provide for the creation and protection of enterprise and facilitate opportunities for employment creation.
Z9: To preserve, provide and improve recreational amenity and open space and green networks
Z14: To seek the social economic and physical development and for rejuvenation of an area with mixed use which residential an "Z6" would be the predominant uses.

Much of the Existing Docklands Station area is **Zoned Z1 – Sustainable Residential Neighbourhoods**. DCDP provisions in respect of Z1 include the following:

To protect, provide and improve residential amenities: The vision for residential development in the city is one where a wide range of accommodation is available. Set within sustainable communities where residents are within easy reach of services, open space and facilities such as shops, education, leisure, community facilities and amenities. Available on foot and by public transport and where adequate public transport provides good access to employment for the city centre and the key district centres.

In both new and established residential areas there will be a range of uses that have the potential to foster the development of new residential communities. These are uses that benefit from a close relationship with the immediate community and have high standards of amenity, such as convenience shopping, crèches, schools, nursing homes, open space, recreation and amenity uses.

Permissible Uses: Buildings for the health, safety and welfare of the public, Childcare facility, Community facility, Cultural/recreational building and uses, Education, Embassy residential, Enterprise centre, Halting site,

Homebased economic activity, Medical and related consultants, Open space, Park and ride facility, Place of public worship, Public service installation, Residential, Shop (local), Training centre.

Open for Consideration Uses include Bed and breakfast, Betting office, Car park, Civic and amenity/recycling centre, Garden centre, Golf course and clubhouse, Embassy office, Hostel, Hotel, Industry (light), Live-work units, Media recording and general media associated uses, Petrol station, Pigeon lofts, Public house, Restaurant, Veterinary surgery.

Local Area Plans Associated with the existing Docklands station area include the following;

- -Draft Park West-Cherry Orchard Local Area Plan
- -Proposed Variation No.7 of the Dublin City Development Plan 2016-2022
- -Proposed Variation Nos. 8-27 of the Dublin City Development Plan 2016-2022
- -Proposed Variation Nos. 28, 29 & 30 of the Dublin City Development Plan 2016-2022

The **Figure 1.3** below provides a graphic of the surrounding neighbourhoods affected by the proposed enhancement.

Figure 1.3 Local Neighbourhoods Map.

1.2.2 North Lotts & Grand Canal Dock SDZ

The Dublin City Development Plan (DCDP) 2016-2022 sets the framework for all future developments in the city in order to meet the needs and aspirations of citizens. The approach is based on the principles of sustainability and resilience on social, economic and environmental fronts. The implementation of the measures in the city development plan is pursued by active land management.

The DCDP 2016-2022 defines a series of Strategic Development, and Regeneration Areas (SDRA). The Docklands area has been designated as one of these SDRAs, providing for the continued physical and social regeneration of that part of the city. The Docklands SDRA includes the North Lotts & Grand Canal Special Development Zone (SDZ) Planning Scheme.

Part IX of the Planning and Development Act 2000-2011 provides for the designation of a Strategic Development Zone (SDZ) to facilitate development which in the opinion of the Government is of economic or social importance to the State. Lands located at North Lotts and Grand Canal Dock in the Dublin Docklands

were designated by the Government as a site for an SDZ on 18 December 2012 and a Planning Scheme was prepared.

Each block is subdivided by smaller local streets and spaces which bring permeability to the large City Blocks and divide each block into four or more robust urban blocks.

The study area for the Docklands Capacity Enhancement includes City Block Nº 2 of the planning scheme.

The documentation describes City Block Nº 2 as mostly undeveloped with a small terrace of 2 storey houses on Mayor Street frontage. Figure 1.4 illustrates the SDZ Block Nº2.

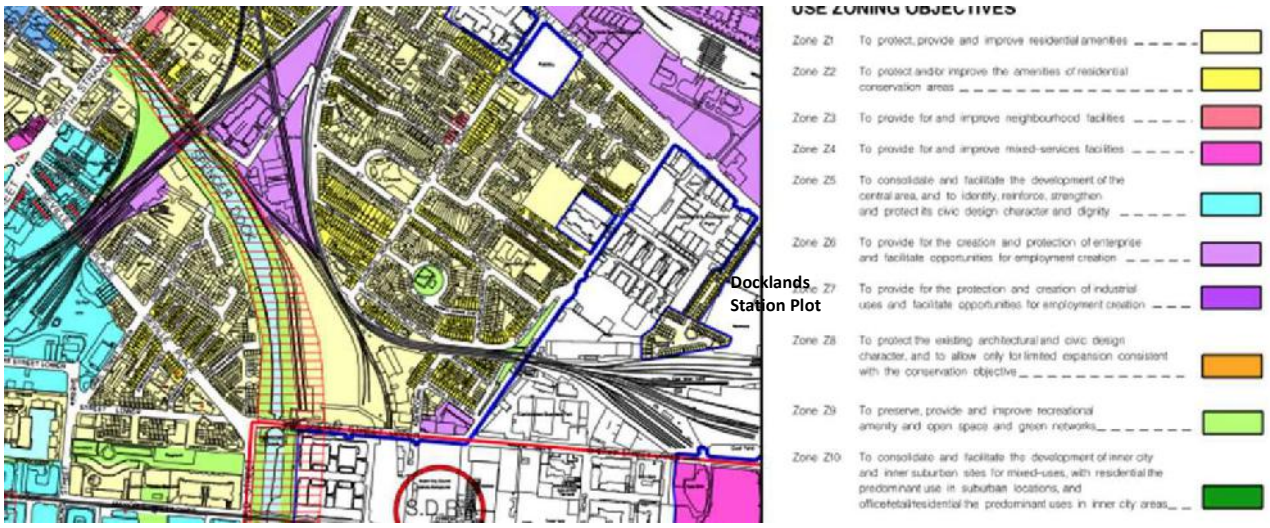


Figure 1.4 Dublin City Development Plan 2016-2022. Volume 3. Map E.

Planned Developments

Docklands Strategic Development Zone (SDZ) as “a model of sustainable inner-city regeneration incorporating socially inclusive urban neighbourhoods, a diverse, green innovation economy contributing to the prosperity of the locality, the city and country, all supported by exemplary social and physical infrastructure. The North Lotts & Grand Canal Dock Planning Scheme establishes five main hubs in the SDZ-6. Two of these are Spencer Dock and Point Village.

Docklands Station plot is identified as a planned additional city hub. Advancement of such plans will require the development of a Master Plan. This has not yet been put in place.

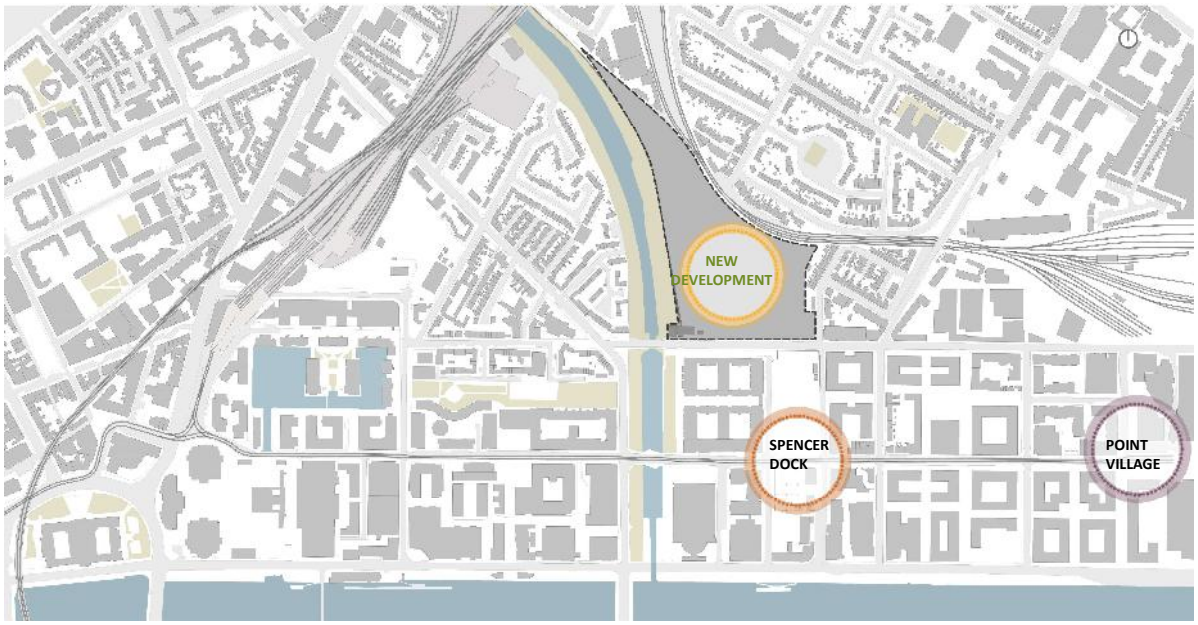


Figure 1.5 Lotts & Grand Canal Dock Planning Scheme.

Royal Canal Linear Park

In 2005 DCDP proposed the development of a Linear Park on the Royal Canal which will create a significant new public space for people and nature in the Dublin Docklands. The six-hectare garden – a green continuum where the banks and the canal become a single space stretching from North Strand Road to the River Liffey is intended to include spaces for relaxation, walks and sports, while making new connections to the surrounding neighbourhoods.

The design seeks to eliminate the actual separation between the banks and the canal itself and to make a singular park across the full width of the space. To achieve this; the distinction of land and water has been blurred by the introduction of some water basins on land and some planted land contained on floating pontoons into the water basin. These pontoons allow a dramatic seasonal relocation of sections of the park. With the intention of activating the entire park, active and contemplative programme elements are distributed throughout as opposed to being concentrated in a single area. Active functions include children's play areas, multi-sport platforms, a kayak club and a skate park. Contemplative functions include gardens, water basins and café pavilions. *Source: Linear Park. Henchion Reuter Architects 2005—2009*

The park is illustrated in plan in **Figure 1.6** below:

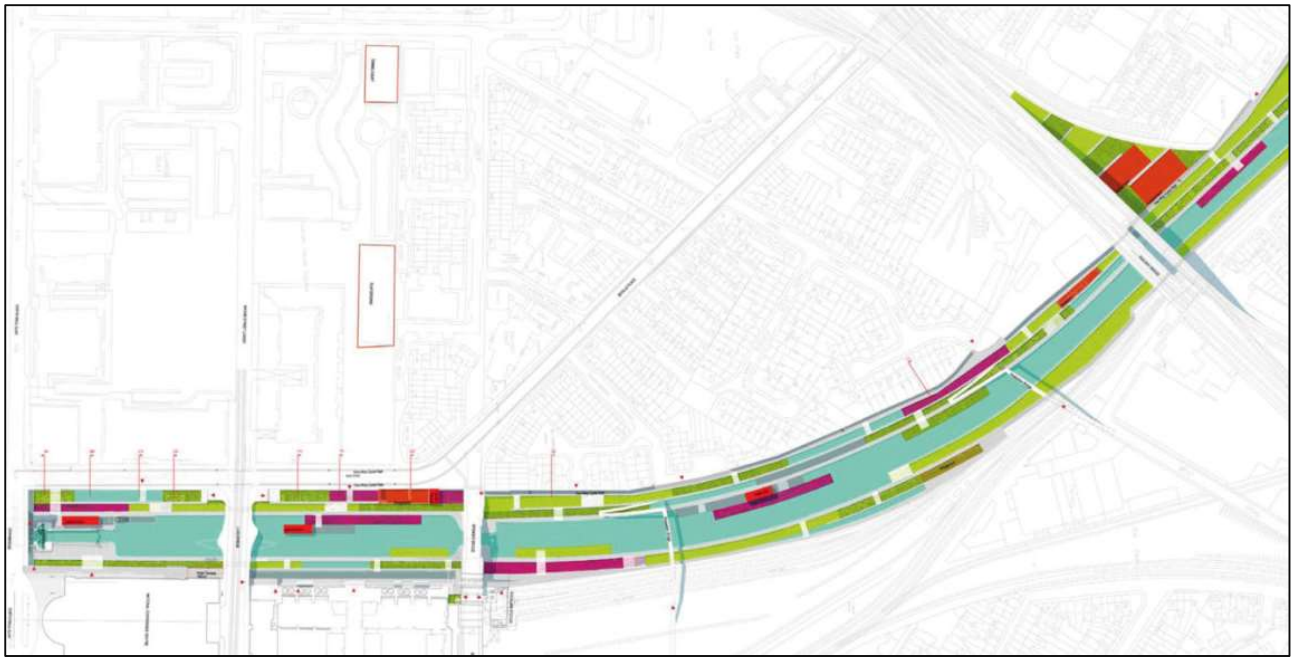


Figure 1.6 Royal Canal Linear Park.

Public Transport Integration

Figure 1.7 below illustrates the potential for Dart+ commuter and Luas tramway integration. The illustration serves to highlight the significance and potential value of maximising the potential for interchange between railway lines and modes of transport in the Docklands Development Area.

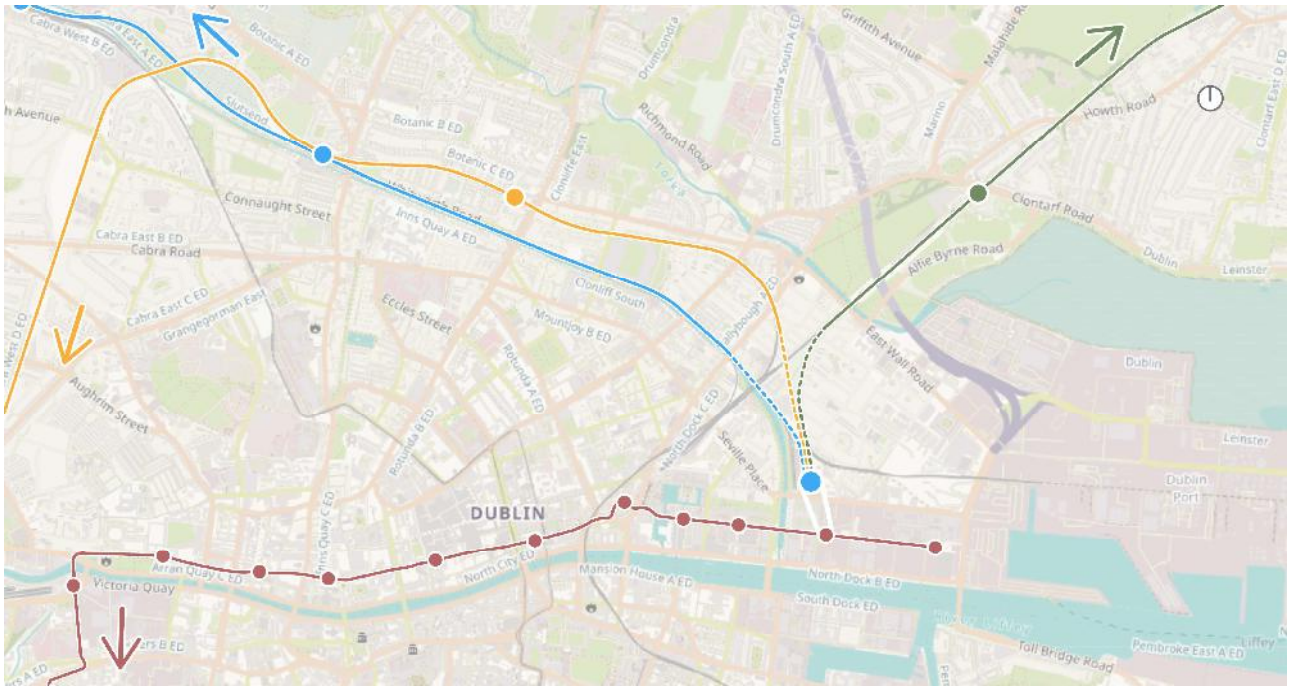


Figure 1.7 DART+ and Luas Integration in the Docklands.

Figure 1.8 below illustrates the existing train, Luas and Bus services in the Docklands Area. Given the scale of planed development of the area, the graphic confirms the potential for integration of services as part of DART+ West.

Figure 1.8 DART+, Luas and Bus Integration in the Docklands.

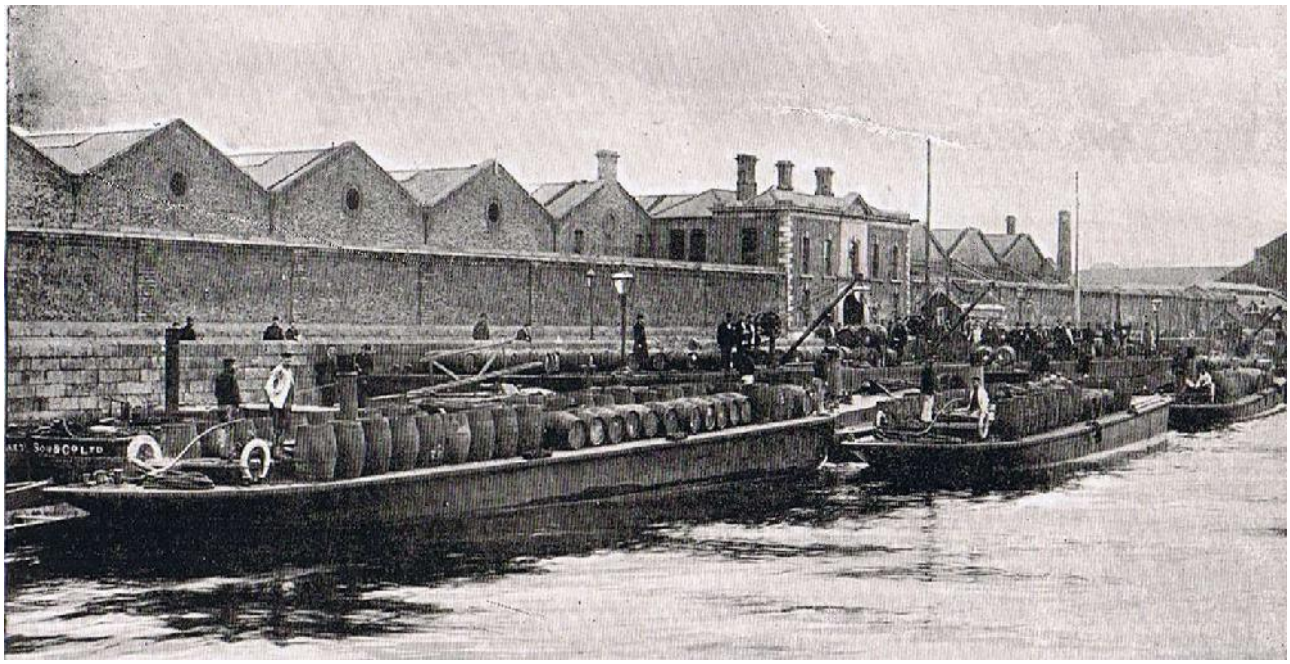
Figure 1.9 below illustrates a journey time assessment in respect of the existing Docklands Station site in respect of selected public and commercial buildings in the area.

Figure 1.9 Local Journey Assessment Graphic– Docklands Site

1. Failte Ireland
2. St Laurence O'Toole's CBS, Senior Boys' Primary School
3. St. Laurence O`Toole Catholic Church
4. Sheriff Youth Club
5. Busáras Central Station
6. The Custom House
7. EPIC The Irish Emigration Museum
8. National College of Ireland
9. The Convention Centre Dublin
10. Central Bank of Ireland
11. Sean O'Casey Community Centre

Heritage Context

The history of the Docklands Station site cannot be explained without its direct relationship to the North Lotts and South Lotts, as together they formed a major seaport where trains arrived to move goods across the country.



The North Lotts and South Lotts where the Grand Canal Docks are situated were largely developed during the eighteenth century. New land was reclaimed in stages from the Liffey estuary as the city's expansion moved eastward beyond the Royal and Grand canals.

Dublin's modernising economy demanded a new port for the import and export of goods as well as space for industrial development. Gasometers, chemical and cotton factories sprung up to respond to the needs of a quickly expanding population, as well as for trade with Britain and worldwide. The wide streets of the North Lotts were used to shuttle cargo back and forth from the factories to the docks.

The Campshires were wide undesignated open spaces along the quays, populated with cranes and the bustle of dock workers moving goods to and from the ships. During this time the East Wall formed the boundary of the city and the sea; Ringsend remained a fishing village at the mouth of the estuary until the tidal flats were in filled to form the South Lotts.

The geographical trend in port cities has been progressive, in Dublin's case, easterly development of the docks over time, which results in the creation of a zone of transport and industry between the city and the sea. A 1693 map shows a broad sweep of the Liffey and Dublin Bay beginning just east of what is now O'Connell Bridge, with mud-flats and sand-banks making the maritime approach to the city difficult.

The absence of a natural harbour in Dublin by the late seventeenth century had become a preoccupation of both merchants and the city fathers, and artificial quays such as 'Wood Quay', 'Blind Key' and 'Customs House Key' were constructed during this period.

The idea of re-engineering and straightening the Liffey's braided banks so that it would scour a deep but narrow navigation channel took hold at the beginning of the eighteenth century. (Source: PUBLIC REALM MASTERPLAN for the NORTH LOTTS & GRAND CANAL DOCK SDZ PLANNING SCHEME 2014).

Image taken from The Port of Dublin, Official Handbook(Dublin, Wilson Hartnell, 1926).

The vibrant transport hub, the most important on the island, was formed when the canal and road system was later extended to include rail and road networks to create a fully operational docklands for the city.

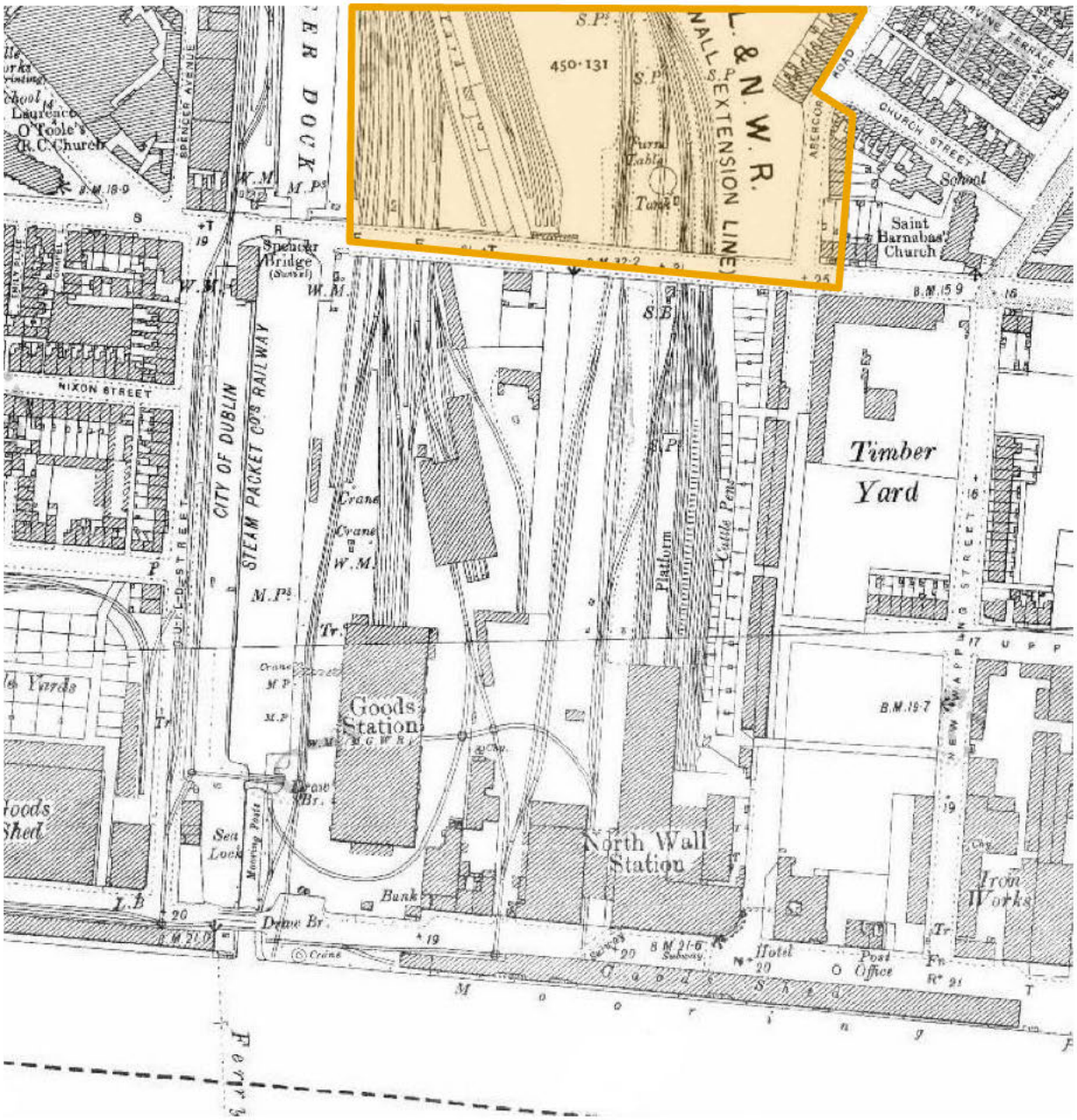


Figure 1.10 Site Historic map (1888-1913). Image taken from *map.geohive.ie*

Sheriff Street Lifting Bridge

A wrought and cast-iron single-span bascule draw bridge, erected c.1900, carrying Sheriff Street on east-west axis over the Royal Canal as it enters Spencer Dock with two commemorative stones to its east side. Now inoperable. Made up of riveted iron frame supported on two iron pylons with box weight to west and iron arms to east attached to tarmac carriageway with riveted panelled iron panels. It has replacement steel parapet railings on timber boarded pedestrian decks to either side. There is a pair of riveted iron gates to east side only. Also present is a pair of limestone carved commemorative stones to the east behind the railings, north stating 'Spenser Dock 15th of April 1873', the south with the coat of arms of 'Midland & Great Western Railway of Ireland 1845'. There are low squared calp limestone canal walls to east and west with curved embankment to east and slipway enclosed by rubble calp limestone walls.

Sheriff Street Bridge

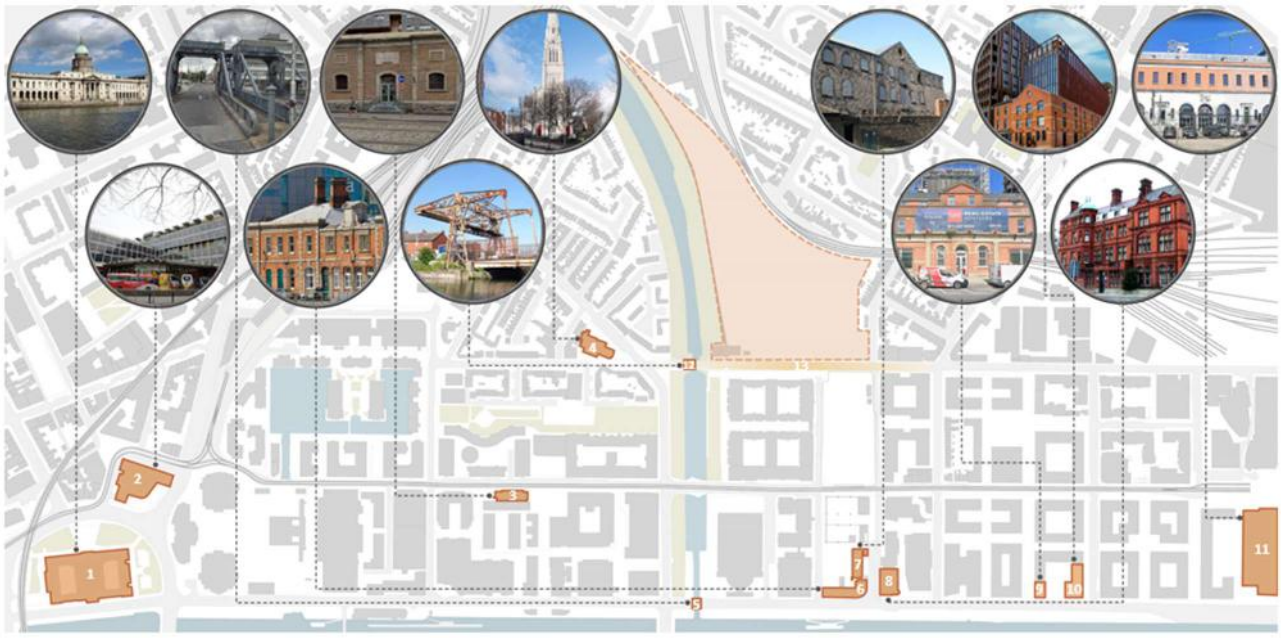


Figure 1.11 Graphic of Historic Buildings in the Vicinity of the Study Area.

2. Previous Studies

Prior to the appointment of IDOM to develop DART+ West, a number of studies were carried out in respect of the Docklands area, which examined capacity enhancement and station optioneering to varying degrees. They include the following:

- DART Expansion Programme Options Assessment Ref 30033212; Systra Jacobs on behalf of the NTA; 05 October 2018;
- Docklands Station Options Study: Options Sift 1 Report; AECOM on behalf of the NTA: 20th Dec 2018;
- Docklands Station Options Study: Options Sift 2 Report; AECOM on behalf of the NTA: 14th February 2019;
- NTA DART Expansion Programme Future Patronage Modelling; by Jacobs Systra; 10 June 2020.
- DART+ Programme Docklands Station Options Study – Summary Report; Rev 1.0; 05 Aug 2020;

Each of the reports is presented in summary below together with the conclusions drawn therein.

2.1 DART Expansion Programme Options Assessment

This report presented an options selection study carried out by Jacobs Systra on behalf of the NTA in respect of the proposed DART Expansion Programme consistent with the extent of proposed electrified railway network as set out in the Greater Dublin Area Transport Strategy. It examined alternative network design options with a view to optimising train service specification and demand. The assessment considered six No. distinct scheme bundles as follows:

- Scheme Bundle 1 – Do Minimum Network assuming limited changes which was used as the reference case against which all other scheme bundles are assessed;
- Scheme Bundle 2 – Full DART Expansion including DART Underground (as per the 2015 Business Case);
- Scheme Bundle 3 – DART Expansion including DART Underground with Heuston Station Turnback;
- Scheme Bundle 4 – DART Expansion including DART Underground with Pearse Station Turnback;
- Scheme Bundle 5 – DART Expansion including Underground tunnel from East Wall to Pearse Station Turnback; and
- Scheme Bundle 6 – DART Expansion with Existing Network Enhancement (No Tunnel).

The study took account of other infrastructure schemes identified in the GDA Transport Strategy including the following:

- Proposed MetroLink;
- Extension of Luas Cross City to Finglas,
- Extension of the Luas Red Line further East to Docklands and a new Lucan Luas line;
- A BRT Network with two cross city lines from Clongriffin to Tallaght and Blanchardstown to UCD and a further line connecting Swords to the City Centre via Dublin Airport;
- Extension and improvement in cycling infrastructure; and
- Development of strategic rail-based park and ride facilities.

The study carried out a comparative assessment of the options in accordance with the Common Appraisal Framework and used the following Key Performance Indicators to assess the options:

- Mode Share;
- Passenger Distance Travelled;

- Passenger Time Travelled;
- Average Journey Speed per PT Passenger;
- Total Boarding by PT Sub-mode;
- Lines Summary (for key bus, rail, Luas routes etc.);
- Rail Line Profiles;
- Road network assignment statistics;
- User benefits (TUBA); and
- Transfer Analysis.

The report identified Bundles 2 and 6 performed best with Bundle 6 providing the best value for money. Bundle 6 was characterised as follows:

- New station at Kylemore on the Kildare line;
- Closing Glasnevin Junction to the crossover of services from The PPT and Maynooth lines;
- Upgrading of Newcomen Junction to a permanently open Junction through the installation of a Canal Drop Lock;
- Re-opening of East Wall Junction to commuter and DART services;
- Re-opening of North Strand Junction to commuter and DART services;
- Re-configured Connolly Station;
- New Docklands Station further to the south;
- Upgrading of Tara Street Station; and
- A new turnback facility at Dun Laoghaire Station.

Figure 2.1 below illustrated Bundle 6 as conceived in the final stages of the study:

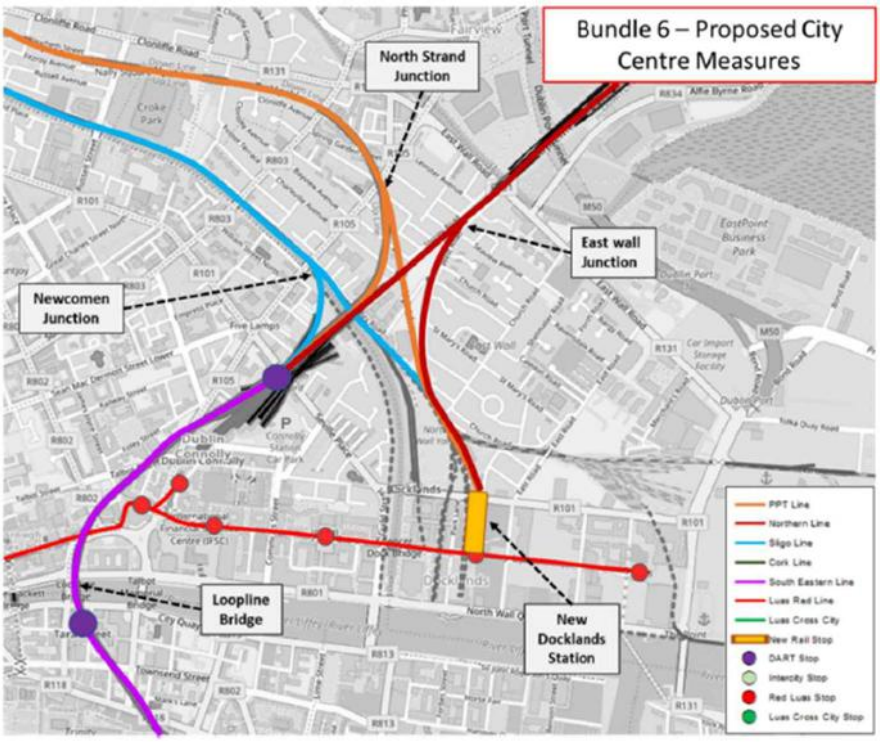


Figure 2.1 Bundle 6 Details: City Centre

In respect of the Docklands the report proposed that 'the new Docklands Station is located further south than the existing station which provides better integration with the Luas Red Line station at Spencer Dock. The new station will also provide more platforms and increased train capacity.' It proposed that the new Docklands Station will use an existing disused rail line to bring PPT services further south and it recommends closing the existing Docklands Station. No further basis is provided for the recommendation.

It also made the following recommendations in respect of the Docklands Station:

- New re-configured Docklands Station to handle 18 TPDPH;
- The Station is to be moved further south to provide better interchange opportunities with the Luas Red line at Spencer Dock;
- Upgraded to a 4-no. platform station compared to the 2 platforms currently at the existing Docklands Station, with passive provision for a 5th if required.

The report noted 'In the optimised Scheme Bundle 6, there is now the ability for services from the PPT, Maynooth and Northern Line corridors to terminate at either Docklands or Connolly or continue south over the Loop-line Bridge. This represents a considerable enhancement to the previous version of Scheme Bundle 6. Hence it was important to determine how services should be distributed between Connolly and Docklands and which services should utilise the Loop-line Bridge to ensure the optimal performance of Scheme Bundle 6.

It recommended a service plan incorporating TPHPD arriving in Docklands as follows: Maynooth Line - 3, Phoenix Park Tunnel Line - 12, Northern Line – 3.

2.2 NTA DART Expansion Programme Future Patronage Modelling

This report represents a further development of the study present in **Section 2.1** above. Again, prepared by Jacobs Systra it presents considerations of future demand on the expanded DART network by undertaking strategic transport modelling using the preferred option: Scheme Bundle 6 and Train Service Specification Option 2 presented in **Figure 2.2** below:

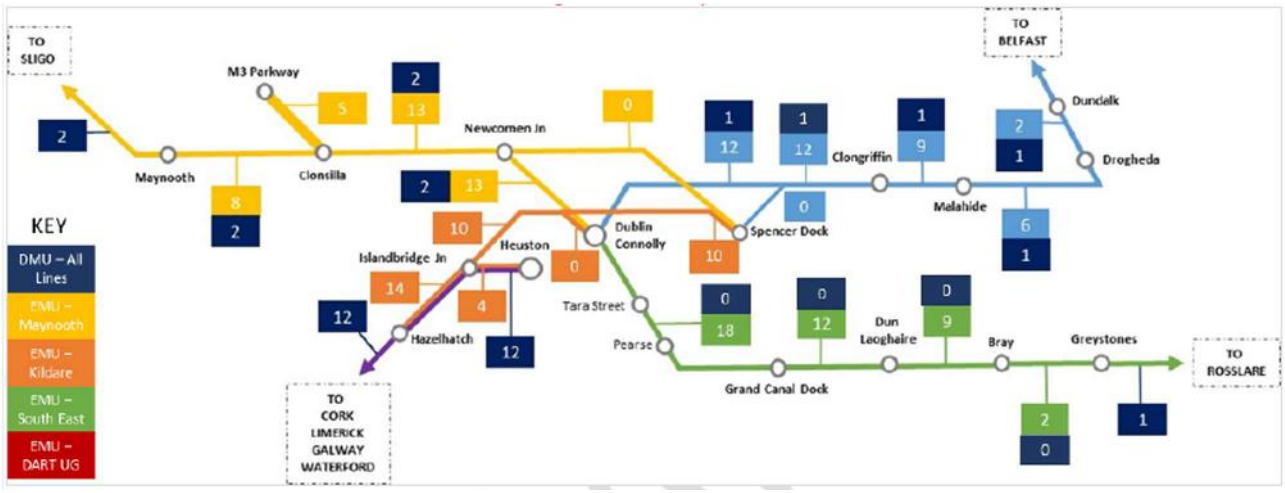


Figure 2.2 Train Service Specification Option 2

The service specification incorporates TPHPD arriving in Docklands as follows: Maynooth Line - 0, Phoenix Park Tunnel Line - 10, Northern Line – 0.

The study implements 2028 and 2043 unlimited rail scenarios to explore the latent demand which may be present along each of the principal lines associated with the project with TPHPD arriving in Docklands as follows: Maynooth Line - 0, Phoenix Park Tunnel Line - 10, Northern Line – 0.

The modelling study made the following conclusions:

- Latent demand exists on the Maynooth, Northern and Southern Lines…
- For the Maynooth line, there is peak latent demand of 4,006 (34% of total NDP boarders) on the line in 2028 and peak latent demand of 5,496 (39% of total GDA Strategy boarders) in 2043.
- Whilst the proposed TSS for the Kildare Line provides sufficient capacity to service future demand requirements, there is still a small level of latent demand of 518 (8% of the total NDP boarders) on the line in 2028 and 890 (11% of the total GDA Strategy boarders) in 2043.

2.3 Docklands Station Options Study: Options Sift 1 Report

This report documents an assessment involving the identification of a 'long list' of site options for Docklands Station by AECOM. The study included contributions from National Transport Authority and Iarnród Éireann. Eleven site options were identified for consideration on the long list of options for assessment.

The site options were subject to a 'pre-assessment' using a range of high-level criteria. During the analysis site options were discounted for one or more of the following reasons:

- It was not practicable to develop the site option further due to a significant planning/land use issue; or
- It was not practicable to develop the site option further due to a significant environmental issue, for which there was no clear means of mitigation; or
- A nearby site option was as good in some respects and no worse in any respect. This criterion required some consideration of the technical difficulty in building a station on the site.

All options identified were assessed against the above criteria in a consistent manner. Sites which passed this pre-assessment were then subject to further analysis to determine the technical feasibility of the options.

Based on this approach four of the long list site options have been recommended for further assessment as part of the Sift 2. The long list of site options is presented in **Figure 2.3** below:

Figure 2.3 Long List of Site Options

The report draws the following conclusions in respect of the long list of options:

Site	Verdict	Reason
A: Existing Docklands station site	Take Forward	
B: East of Spencer Dock, north of Mayor Street Upper	Take Forward	
C: East Wall Yard	Take Forward	
F: Ferry Terminal	Discard	No better than C
G: Elevated over Spencer Dock Luas	Discard	Not technically feasible
H: North Wall Quay over Liffey	Discard	Planning and environmental issues
J: Royal Canal south of Sheriff Street Upper	Discard	Planning and environmental issues
K: Samuel Beckett Bridge	Discard	Planning and environmental issues
L: West of Spencer Dock, north of Mayor Street Upper	Discard	Planning issue, no better than M
M: New Wapping Street	Take Forward	
N: Mayor Street Upper and Castleforbes Road	Discard	No better than M
P: Combination of A and J	Discard	Planning and environmental issues

For **Site A, the existing Docklands station** site the report notes the following:

'The existing station would be replaced or augmented by platforms in the area bounded by Sheriff Street Upper to the south, the Royal Canal to the west, and the limit of railway land to the east. The station footprint would be mainly or fully on railway land. To the east of the existing station is a coach park, which is considered to be a temporary facility. The western edge of the site is within a Conservation Area but it is considered feasible to avoid any works on this section.

The track layout for this station is challenging, because of the limited space between the northern end of the platforms and the divergence of the three rail routes at differing gradients, and the need for freight connections across the passenger tracks. Initial development has identified a feasible design with two elevated platform tracks for the Northern Line and up to four more at ground level for the other two lines. This does however require land take to the west of the existing railway at Church Road Junction. Design refinement is proposed during Sift 2 to establish definitively whether an at-grade solution is possible, or whether the initial split-level solution can be refined with less land take and simpler structures. In any event freight to and from the Phoenix Park line would almost certainly have to access it via Drumcondra and the link at Glasnevin.

Like the existing station, the passenger entrance to this site would be on Sheriff Street Upper, at the edge of the Docklands development. It currently feels remote from the centre of activity and the nearest Luas stops are about 5min walk away on Mayor Street Upper. However, the transition from a station with a few peak-time trains to a busier all-day station would naturally increase footfall and activity. Improved access routes might include covered walkways, moving walkways or relocation of the Luas stop slightly nearer, and the development of the surrounding area.'

For **Site B**, the report notes:

'This site is similar to one developed in an earlier study for a terminus parallel to and east of Spencer Dock, with the buffer stops north of Mayor Street Upper. The likely entrance/exit would be located immediately alongside the Spencer Dock Luas stop and close to the centre of the north bank Docklands area. The platforms would extend below Sheriff Street Upper into the railway land beyond.

The previous study developed a broadly viable concept which could link to all three routes and provide the necessary freight connections. It did however identify some engineering constraints and note the high cost of this solution. The bridge where Sheriff Street Upper passes over the platform area would need replacement to lengthen the span and providing electrification clearances here necessitates lowering the track bed below the water table. This creates a need for "tanking" to prevent water ingress, for a split-level station building, and for possible level changes at Church Road Junction. The previous study also considered only three platform faces where the current study seeks to provide four if possible. As designed the outer end of the platforms would have a radius of 350m, below the absolute minimum of 500m.

Furthermore, the Spencer Dock DART Underground station and its cut-and-cover approaches – if built – would occupy the same footprint as Site B. If it was desired to keep a Site B station open during construction of the Underground, then much of the Underground structure might have to be built with the surface station.

Although the previous design is not acceptable as it stands, particularly in respect of the urved platforms, it is considered that some further engineering development at Sift 2 might produce a viable option. Site M also presents the scope for reducing the curvature at the cost of increased land take on a site where development is planned.'

For **Site C, the East Wall Yard**, the report notes:

'Any or all the existing railway activity in East Wall Yard could be relocated, with the exception of a freight route along the northern boundary of the site to access Alexandra Road. This relocation would free up enough railway land for a Docklands station. Rail access would be found along the existing trackbed to Church Road Junction, where there is width for two passenger and two freight tracks if necessary. East Road overbridge might have to be replaced by a structure with no central pier.

At Church Road a new track layout would be needed to link the passenger and freight tracks to the three routes onwards, but this area is considered to be less challenging than other sites where the platforms would be closer to the junction….

…Passenger access would be near the east end of Sheriff Street Upper or on East Wall Road itself. It is however rather remote from the western parts of Docklands. The south bank is accessible via Tom Clarke Bridge and the site is well placed should development extend eastwards into what is currently the port area.

In terms of connectivity, the walk from the Point Luas stop is not currently attractive to potential passengers but there is scope for improvement if this site becomes the access to a major station. A short extension of the Luas tramline into the site is likely to be feasible, though it would conflict with the intention to extend the Luas across the river instead.'

For **Site M: New Wapping Street**, the report notes:

'At Site M, the station would lie diagonally across the block south of Sheriff Street Upper and west of New Wapping Street. Site M differs from Site B, as it extends into the eastern part of this block, which is largely vacant though has planning permission for commercial/residential development. There is a terrace of houses in the south-east corner and a pumping station towards the northern edge….

…In engineering terms this site is similar to Site B, as they share the likely need to go below the water table in order to pass under Sheriff Street Upper. However, the curve on approach to Site M would be less than Site B, making it likely that the platforms would be straight or at least straighter.

The property impact of Site M is significantly greater than for Site B. Local access for Site M would be good, as the likely entrance on Mayor Street Upper is close to the centre of the north bank Docklands and a future bridge over the Liffey. The site is slightly further from the Luas than options B or G but is still easily accessible.'

2.4 Docklands Station Options Study: Options Sift 2 Report and DART+ Programme Docklands Station Options Study – Summary Report

This report documents the Sift 2 of a process of identification of a preferred option for a DART station in the Docklands. It was carried out by AECOM on behalf of the NTA. The report lists the following objectives for the study:

- 'Identify the preferred location and layout of Docklands Station with the aim of achieving the minimum train capacity requirement, which would best serve the needs of the Docklands area and maximise interchange potential with the Luas; and
- Carry out a comprehensive study for the Docklands Station and how it is accessed, including all connecting rail alignments from the DART radial routes bounded by and including Newcomen, North Strand and East Wall Junctions and freight traffic from East Wall Yard. This study will take consideration of the station's interface with a potential DART Underground Station and alignment.

The four options advanced from Sift 1, reported above, underwent engineering development and an initial multi-criteria assessment by a panel of experienced subject experts within AECOM. Feedback on the initial assessment from the NTA and Irish Rail project team has resulted in further engineering development and the operational assessment of each option as detailed within this report.

Options have been assessed against criterion which were agreed in advance with the NTA and which consist of three main criterion, economy, integration and environment and several sub criterions. The performance of each option was then ranked against this criterion. It is acknowledged that there is a degree of subjectivity within the multi-criteria assessment process which involves qualitative and some quantitative elements.'

The report concluded that 'Overall, Options A and B both have some advantages over the other options. While Option A benefits from the lower level of investment required to develop the site, the adjacent dedicated cycle routes and the presence of attractive walking routes along the canal, Option B performs strongly given its closer proximity to higher density employment zones on the south and western side of the study area.

Option C has some disadvantages, primarily driven by its location at the periphery of the higher density development area. Option M also has some disadvantages, primarily driven by the development currently taking place on the third party owned site and the costs associated with the purchase of non CIÉ lands.

In summary, Option A would cost less to develop whereas Option B would serve more people.'

Option A is presented in **Figures 2.4 and 2.5** below:

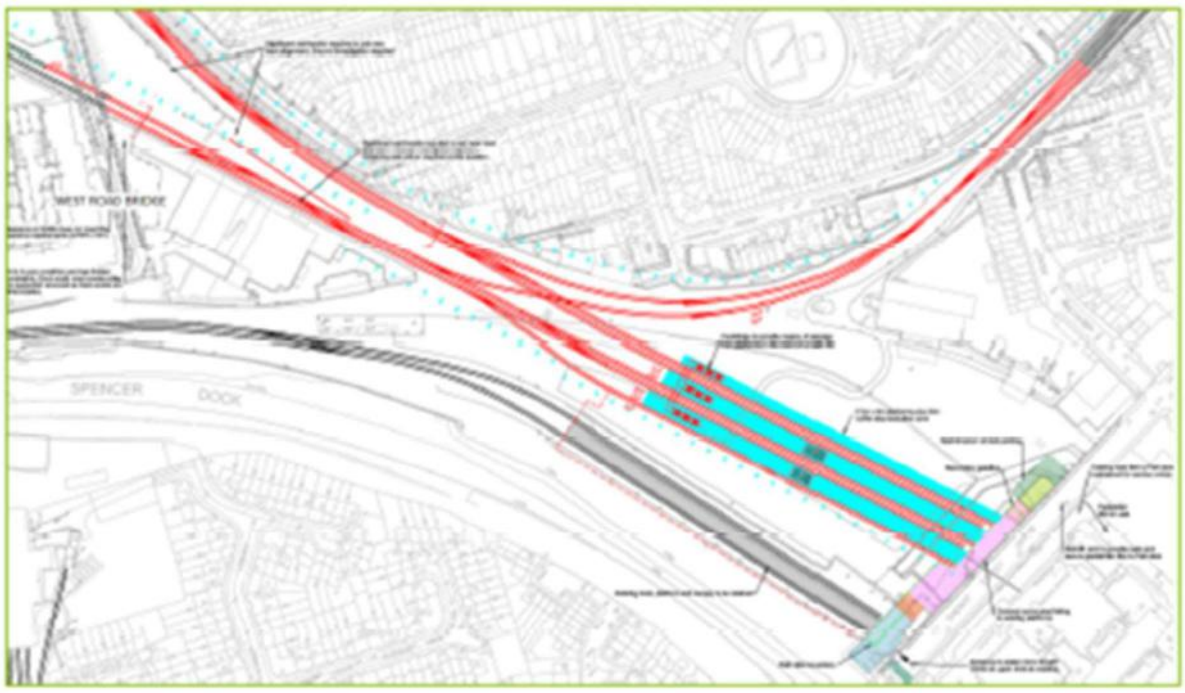


Figure 2.4 Option A Plan Layout

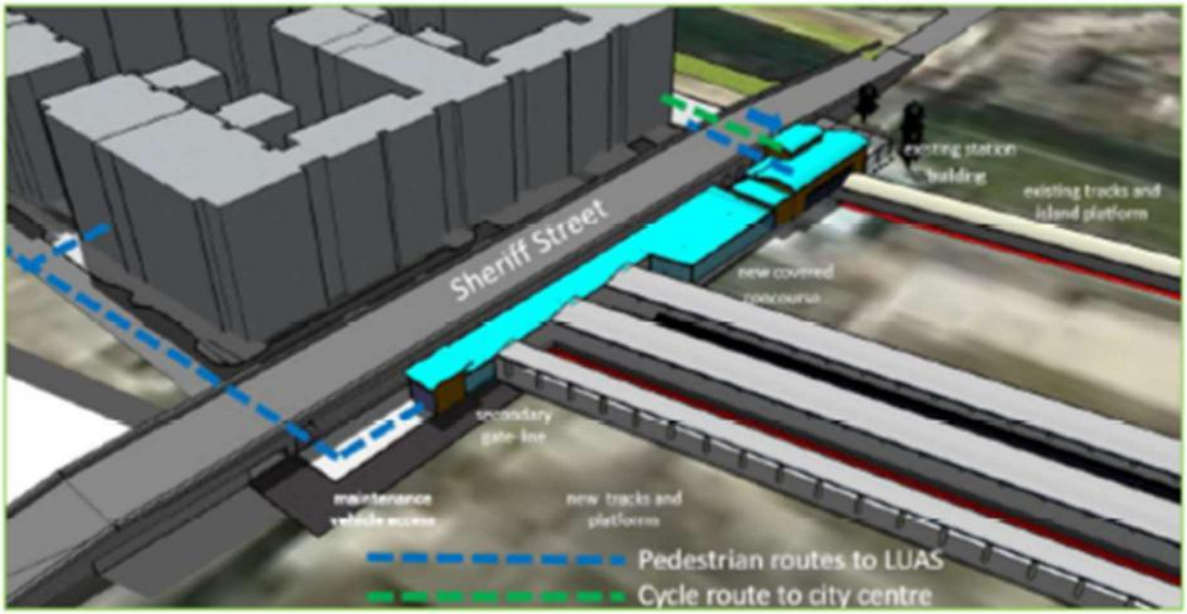


Figure 2.5 Option A Graphic Representation

The summary report notes that 'The track layout for this station is challenging, because of the limited space between the northern ends of the platforms, the divergence of the three rail routes at differing gradients and the need for freight connections across the passenger tracks. To facilitate the design for this option land take to the west of the existing railway at Church Road Junction is required.

The existing platforms and approach tracks are retained without modification and continue to serve the route via Newcomen Junction, with the new platforms and canopies broadly replicating the existing. The existing station building is assumed to be modified with eastward extension to access the new platforms The DART Underground portal would be in the same area, and if constructed may make this site inaccessible to and from the Northern route.

Like the existing station, the passenger entrance to this site would be on Sheriff Street Upper, at the edge of the Docklands development. It currently feels remote from the centre of activity and the nearest Luas stops are about 5min walk away on Mayor Street Upper.'

Option B occupies a site south east of the existing Dockland Station, adjacent to the Spencer Dock Luas station.

Figure 2.6 Option B Plan Layout

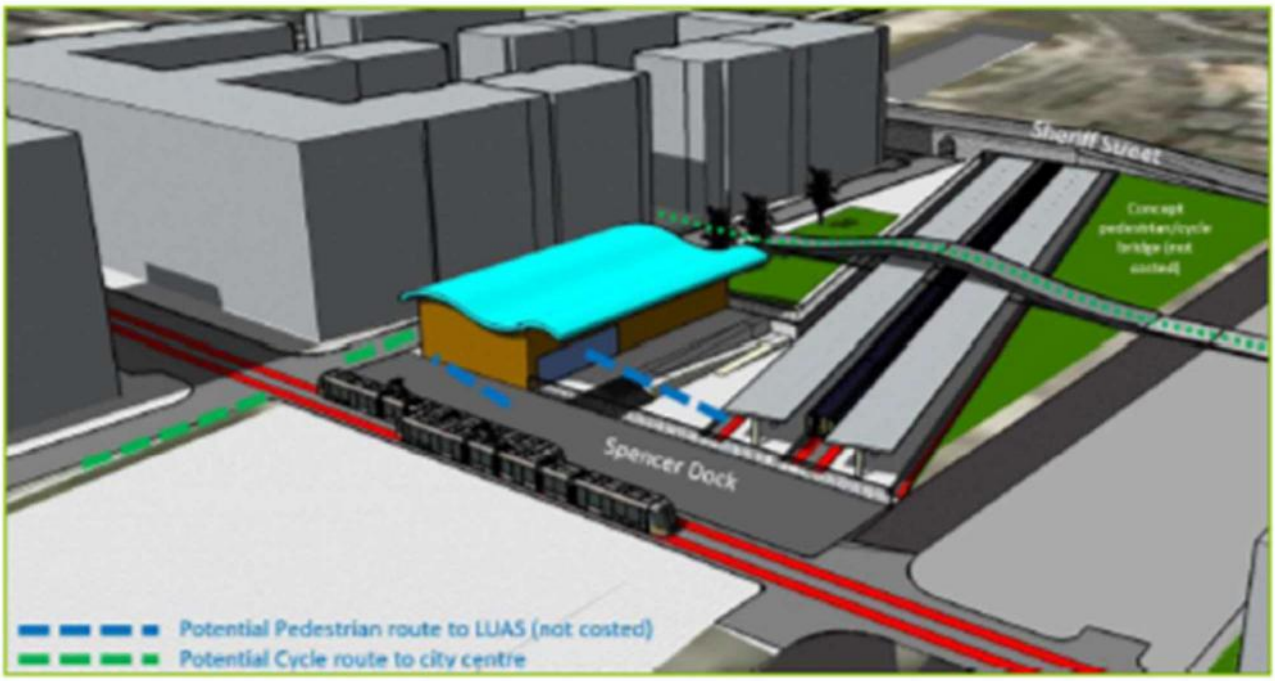


Figure 2.7 Option B Plan Layout

The Summary Report notes that 'The entrance/exit is located adjacent the Spencer Dock Luas stop and close to the centre of the north bank Docklands area. The platforms extend below Sheriff Street Upper into the railway land beyond. The station entrance is on the northern platform of the Luas stop, level with the top of the Luas platform, with a ramp and stairs provided down to railway platform level.

A concept design has been developed which can link to all three routes from the Northern, Maynooth and Phoenix Park Tunnel lines with four parallel approach tracks that gives access between any platform and any of the three rail routes, as well as freight access via North Strand and East Wall junctions. The concept design highlights some engineering constraints and associated additional costs. The bridge where Sheriff Street Upper passes over the platform area would need replacement to lengthen the span. As a worst case, it has been assumed that providing clearance for electrification under the bridge necessitates lowering the track bed approximately 1m below grade and below the water table. This creates a need for "tanking" to prevent water ingress.'

Option C the East Wall Yard is presented in Figure 2.8 below:

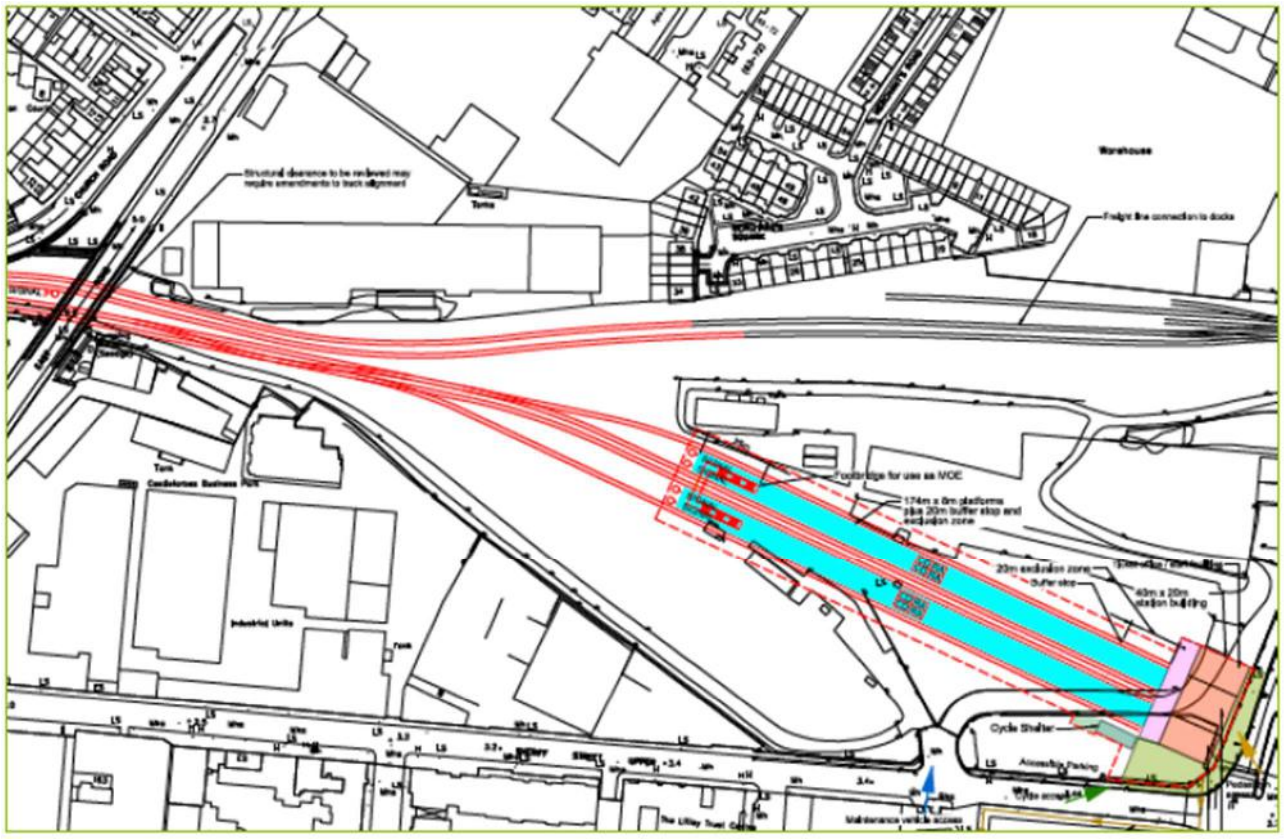


Figure 2.8 Option C Plan Layout

For this option, a configuration with the station towards the south of the site was adopted. This minimises the walking distance to Luas and the destinations in the Docklands area, and also avoids conflict between passenger and freight operations. It was noted that 'Two double junctions at Church Road allow trains on all three routes to access the link to the current East Wall Yard. This link is increased to four tracks, the southern pair serving the passenger station and the northern pair connecting to Alexandra Road. We assume that East Road overbridge could be modified to provide electrification clearance, or the tracks lowered beneath it, but this would require confirmation should this option go forward.

Journey times for Option C are expected to be approximately 90s longer than Option B and 120s longer than Option A in each direction. This will result in one extra train being required to operate the more intensive timetable scenarios.'

Option M, New Wapping Street is presented in **Figure 2.9** below:

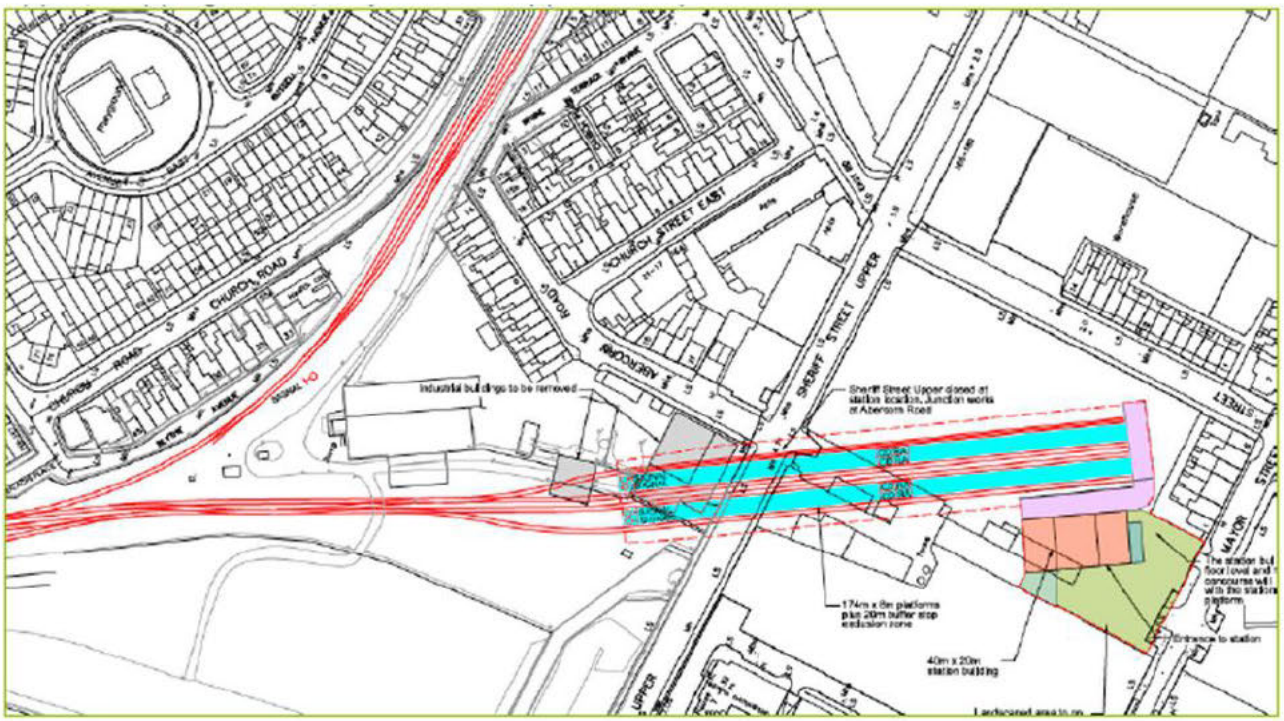


Figure 2.9 Option M Plan Layout

The report notes that 'Re-grading of Sheriff Street Upper to pass over option M would affect Abercorn Street and would be highly disruptive to nearby properties, so is assessed not to be feasible. As the streets are lower where they pass over the option M tracks than the option B tracks, option M has to be at a lower elevation than option B. Although sub-options of option M vary in detail, all would require a concrete trough and pumped drainage. They also take up much of the eastern part of the block, which is not CIÉ land and where planning permission has been granted for development. Thus, they incur a large land purchase cost.

The Sift 2 assessment by AECOM identified Options A and B as competing preferred options for further consideration. The summary report documented a multicriteria assessment of Options A and B. The summary table clarifying the outcome of the assessment is presented below. It concluded that Option B was superior to Option A as a location for a proposed station in the Docklands Area.

Criteria	Option A	Option B
Economy: Capital Cost	Some Advantages	Some Disadvantages
Economy: Operating Cost	Some Disadvantages	Some Advantages
Economy: Demand	Some Disadvantages	Some Advantages
Economy: Transport User Benefits	Some Disadvantages	Some Advantages
Integration: Land Use Policy/ Plan Integration	Some Disadvantages	Some Advantages
Integration: Public Transport Integration	Some Disadvantages	Some Advantages
Integration: Walking/ Cycling Integration	Some Advantages	Some Disadvantages
Environment: Cultural Heritage	Comparable	Comparable
Environment: Noise and Vibration	Comparable	Comparable
Environment: Landscape and Visual	Some Disadvantages	Some Advantages

3. Methodology for Multi-Criteria Assessment

A multi-criteria analysis (MCA) mechanism has been developed on the basis of "*Department of Transport Tourism and Sport (DTTAS), Common Appraisal Framework (CAF) for Transport Project and Programmes March 2016 (updated October 2020)* for options assessment. It includes the following six appraisal criteria as follows:

Economy	Economy relates to impacts of a transport investment on economic growth and competitiveness are assessed under the economic impact and economic efficiency criteria.
Safety	Safety is concerned with the impact of the investment on the number of transport related accidents.
Integration	Integration considers the extent to which the project being evaluated promotes integration of transport networks and is compatible with Government policies, including national spatial and planning policy.
Environment	Environment embraces a range of impacts, such as emissions to air, noise, and ecological and architectural impacts.
Accessibility and Social Inclusion	Accessibility and social inclusion embrace the notion that some priority should be given to benefits that accrue to those suffering from social deprivation, geographic isolation and mobility and sensory deprivation.
Physical Activity	This relates to the health benefits derived from using different transport modes

Multi-Criteria Analysis – MCA can be used to describe any structured approach to determine overall preferences among alternative options, where the options should accomplish multiple objectives. The term covers a wide range of techniques that share the aim of combining a range of positive (benefits) and negative (costs) effects in a single framework to allow for easier comparison of alternative options in decision-making (CAF, 2016).

A multi-criteria analysis (MCA) was undertaken to consolidate the quantifiable and non-quantifiable impacts associated with each option devised under each aspect of the proposed project.

The information needed to carry out the multicriteria analysis is set out below with the proposals in respect of the project:

Information Needed	Project Approach
The options that have to be analysed	Component Options are presented for each
The evaluation criteria that will be used to analyse the options	The above criteria are broken into sub-criteria each of these are used to carry out a comparative assessment of the options
The importance of these criteria (that is, the weights); and	For individual scheme components either a fully qualitative mechanism without weighting has been used or a weighted mechanism has been adopted dependent on the perceived appropriateness for each component.
The evaluation of the options on the different criteria. These evaluations can be given a numerical or ordinal (comparative) scale.	The evaluations are on the basis of colour coding as describes in Table 5.1 below.

In this options assessment process, a two stage multi-criteria analysis is used; MCA1 to prune out infeasible options and options which are obviously inferior to others; MCA2 to facilitate a more detailed assessment of the higher ranked options from MCA1.

3.1 Stage 1 MCA

In the Stage 1 assessment, the MCA is called MCA1 and it is developed to facilitate a ranking of each option against a set of defined criteria. It comprises either a qualitative and/ or quantitative assessment of the options developed. It is a comparative assessment of all options against each other. The MCA1 is undertaken on all options developed. It screens and assesses all options based on high level design or baseline data collection in order to screen and assesses all options. All options are assessed against the defined criteria, and the significance of the impacts, in order to screen out options which are considered either not feasible or for which clear division emerges between them and superior options in respect of the defined criteria, leading to a short-listing of options.

3.2 Stage 2 MCA

In some cases, a more detailed MCA is deemed to be required. This is called a Stage 2 MCA. The Stage 2 MCA examined the shortlisted options from MCA1 in greater detail to determine an Emerging Preferred Option.

The same general selection process is followed for both Stage 1 and Stage 2 MCAs. However, in the Stage 2 a more detailed examination of the options is undertaken. This is informed through additional design development / further studies and subsequently more detailed analysis / assessment under the CAF criteria and sub-criteria under examination.

3.3 Criteria and Sub-Criteria

The criteria and sub-criteria are the measures of performance by which the options will be judged. It is appropriate that the approach should reflect the Project Objectives. A common set of Criteria and Sub-Criteria has been identified for the project. These are presented in **Table 3-1** below. Each of the principal components of the scheme as listed above have had specific comparators identified under each sub criterion, comparators which are appropriate to each specific component type. They are described in Section 6 on an individual basis.

Table 3-1 CAF Criteria for MCA process

CAF Criteria	Sub - Criteria
1. Economy	Construction and Land Cost
	Long Term Maintenance costs
	Traffic Functionality /economic benefit
2. Integration	Transport Integration
	Land Use Integration
	Geographical Integration
	Other Government Policy
3. Environment	Noise and Vibration
	Air Quality and Climate
	Landscape and Visual (including light)
	Biodiversity (flora and fauna)
	Cultural, Archaeological and Architectural Heritage
	Water Resources
	Agriculture and Non-Agricultural
	Geology and Soils (including waste)

CAF Criteria	Sub - Criteria
	Radiation and Stray Current
4. Accessibility & Social inclusion	Impact on Vulnerable Groups
	Stations Accessibility
	Social Inclusion
5. Safety	Rail Safety
	Vehicular Traffic Safety
	Pedestrian, Cyclist and Vulnerable Road user Safety
6. Physical Activity	Connectivity to adjoining cycling facilities
	Permeability and local connectivity opportunity

3.4 Assessment Methodology (MCA)

The assessment undertaken is of a comparative nature (options compared against each other). This is based on the Common Appraisal Framework (CAF) criteria and based on professional judgement in respect of the items to be qualitatively evaluated, and comprehensively assessed against the key relevant criteria in accordance with good industry practice.

The assessment compared the relevant options, identifying and summarising the comparative merits and disadvantages of each alternative under all the applicable criteria and sub-criteria leading to an Emerging Preferred Option.

A comparative assessment was undertaken for each option developed, where in general, for each positively scored option there must be an opposing negatively scored option. **Table 3-2** provides an overview of the comparative colour coded scale for assessing the criteria and sub-criteria. For illustrative purposes, this five-point scale is colour coded with advantageous options graded to 'dark green' and disadvantaged routes graded to 'dark brown'.

Table 3-2 The comparative colour coded scale for assessing the criteria and sub-criteria

Colour	Description
	Significant comparative advantage over all other options
	Some comparative advantage over all other options
	Comparable to all other options
	Some comparative disadvantage over all other options
	Significant comparative disadvantage over all other options

For each individual assessment the parameter and associated criteria and sub criteria were considered and options were compared against each other based on the five-point comparative scale, ranging from having 'significant advantages over other options' to having 'significant comparative disadvantages over other options.' Options that are comparable were assigned 'comparable across all other options'.Options were compared under each criterion, before those criteria are aggregated to give a summary score for each parameter. These scores were then compared to establish the relative ranking of the options.

NOTE: A degree of professional judgement was used by the specialist undertaking the assessment. For example, Environmental criterion assessments take into consideration the comparative likely potential impact and the significance value of the environmental factor to be impacted which is reflected in the aggregated summary ranking of that criteria.

4. Docklands Station Options MCA1

4.1 Introduction

Having reviewed the studies carried out in advance of the IDOM DART+ West commission and having examined the site constraints we carried out an initial screening exercise of all options to set aside those which we consider do not warrant carrying forward to the MCA process. They are summarised in the table below: with reasons for setting aside. We have used the same site numbering and options numbering as that used in the AECOM study

Site	Decision	Primary Reasoning for Decision
A: Existing Docklands station site	Take Forward	This site benefits from a lower level of investment required to develop the site as well as the adjacent dedicated cycle routes and the presence of attractive walking routes along the canal.
B: East of Spencer Dock, north of Mayor Street Upper	Take Forward	This Option performs strongly given its closer proximity to higher density employment zones on the southern and western side of the study area.
C: East Wall Yard	Discard	This option it too removed from the centre of development activity in the Docklands
F: Ferry Terminal	Discard	This option it too removed from the centre of development activity in the Docklands and impacts on East Wall Road, the Proposed Southern Port Access Road and Port Activity.
G: Elevated over Spencer Dock Luas	Discard	Not technically feasible. This option offers no advantages over Options B and M
H: North Wall Quay over Liffey	Discard	Planning and environmental issues. This option offers no advantages over Options B and M
J: Royal Canal south of Sheriff Street Upper	Discard	Planning and environmental issues. This option offers no advantages over Options B and M
K: Samuel Beckett Bridge	Discard	Planning and environmental issues. This option offers no advantages over Options B and M
L: West of Spencer Dock, north of Mayor Street Upper	Discard	Planning issues, this option offers no advantages over Options B and M
M: New Wapping Street	Discard	Impact on Development Sites significantly more severe that Options at Site B which perform better. Development is currently taking place on the third-party-owned site and the costs associated with the purchase of non-CIÉ lands would be considerable.
N: Mayor Street Upper and Castleforbes Road	Discard	This option offers no advantages over Options B and M
P: Combination of A and J	Discard	Planning and environmental issues

A number of designs have been developed for the Sites identified and they are summarised in tabular form below. The designs are described in subsequent sections and each has been progressed for inclusion in the first stage of multicriteria assessment.

Option	Location	Description
A1	Current Station Location	Retains existing platforms and canopy with additional platforms to east.
A2	At the end of Park Lane	New Station accessed off Sheriff Street.
A3	At the end of Park Lane	New Station accessed off Sheriff Street with Pedestrian and Cycle link to East Wall.
B1	Mayor Street Lower -	Platforms and tracks angled relative to Park Lane
B2	Mayor Street Lower	Platforms and tracks parallel to Park Lane

4.2 Design Criteria

All permanent way elements in must be designed to ensure safety, and the most cost-effective capacity enhancement and SET development. Hence, track alignment has been based on the following minimum requirements:

A desirable minimum horizontal radius of 200m is proposed in accordance with “CCE-TMS-340 Horizontal Curvature Design”.

A platform length of 184m is proposed comprising 169m provision for the 8-car DART EMU configuration, a 5m of leeway and a buffer stop run-out distance of 10m as described in “CCE-TMS-345 Engineering Requirements for Passenger Platforms and Barrow Paths”.

The platforms are proposed to be straight, to minimize the gaps between train and platform as per “CCE-TMS-345”.

High-performance buffer stops to safeguard people (both on the ground and in trains, including passengers, staff and the public) against serious injury should a train overrun the end of a line as defined in “CCE-TMS-386 Requirements for Buffer Stops”.

Additional clearance is proposed between curved tracks to take account of the effects of end throw and centre throw of vehicles, as per I-PWY-1101 Requirements for Track and Structures Clearances.

4.3 Operational Requirements of the Docklands Station

The project objectives include the for implementation of trackwork and platform capacity associated with the provision of enough terminating capacity for the Midlands Great Western Railway (MGWR), Great Southern & Western Railway (GSWR) and the Northern Line. The designs have been developed to meet this requirement on the basis of Train Service Specifications identified in MAY-MDC-OPS-DART-RP-Y-0003_TSS_Baseline and MAY-MDC-OPS-DART-RP-Y-0004_TSS_Alternative reports.

Trackwork serving at least three platforms is required to serve the MGWR line (both TSS Baseline and Alternative Scenarios)

Trackwork serving at least a single-track connection is needed to serve the East Wall Yard. Assuming freight traffic is restricted to night and off-peak times such a connection would provide access to the Northern line and alternatively the MGWR line or the GSWR line (both TSS Baseline and Alternative Scenarios);

Trackwork serving at least two platforms are needed to serve the GSWR line (TSS Baseline Scenario);

Trackwork serving at least two platforms are needed to serve the Northern line (TSS Alternative Scenario);

For service reasons, it is recommended that both the MGWR and GSWR lines or platform tracks should be mutually interconnected. Thus, access to Northern Line (towards East Wall Jct.) should be provided from at least one set of platform tracks of MGWR and GSWR lines.

4.4 Site A Location

The proposed location for Options A is at Spencer Dock, North of Sheriff Street Upper. The current Docklands station is located here. Due to this fact, this location requires a lower investment to develop the site, as the station building and platforms already exist. See Figure 4.1 for location of Option A.

Figure 4.1. Option A

This land is owned entirely by CIÉ, and it is classified as Zone Z1 (to protect, provide and improve residential amenities) in the Dublin City Development Plan 2016-2022. However, the current station has obtained permanent planning permission by the Dublin City Council.

4.4.1 Option A1

The first proposed option is to maintain the station at the current location, keeping the existing platforms and canopy. The existing platforms are the ones located closest to the Royal Canal (Westside). The upgraded demand and the connections with the above-described lines require enlarging the station building to allow access to four new platforms located to the East of the existing.

The current station is formed by an island platform covered with a canopy and a station building in the head of the platform. The existing accesses to the station from the Royal Canal, below Sheriff Street Upper overbridge and from the Sheriff Street Upper overbridge are maintained. The first provides levelled access to the platforms, and the second is 4.5m above the platform level, connecting with it through a two-way staircase and a lift. See **Figure 4.2** below for images of station access points.

Figure 4.2 Access from the Royal Canal / Access from Sheriff Street Upper Overbridge

The current station needs to be enlarged eastwards to receive the four new platforms and their respective tracks. It will also need to be extended northwards to provide the required amount of space between the beginning of the platforms and the turnstiles of the station in order to guarantee a fluid passengers flow.

The enlargement of the station is illustrated in **Figure 4.3** below in blue, showing the area that the station should occupy to accommodate the four additional platforms. They will be joined in two island platforms to

optimise the land occupation. A Third access point to the station could be provided from the east side to allow for a better connection towards the LUAS station, to improve the accessibility of the station.

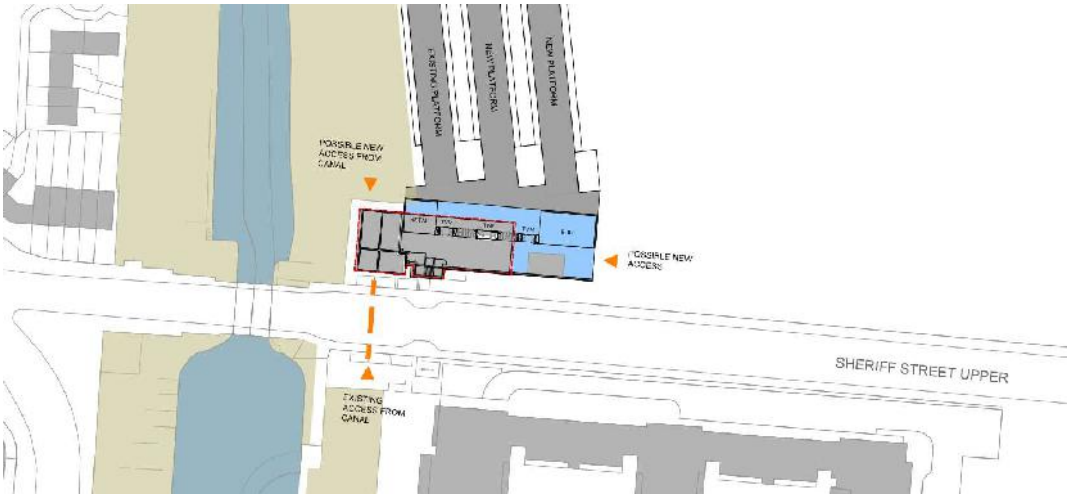


Figure 4.3. Option A1. Accesses to Docklands Station

Docklands Station Option A1 will be provided with six tracks and three island platforms. This layout allows this option to:

- Access four platform tracks from the MGWR line;
- Access three platform tracks from the GSWR line and the Northern line;
- Interconnect the MGWR, GSWR and Northern Lines, fully complying with operational requirements;
- Preservation of the connection to East Wall Yard via Northern Line.

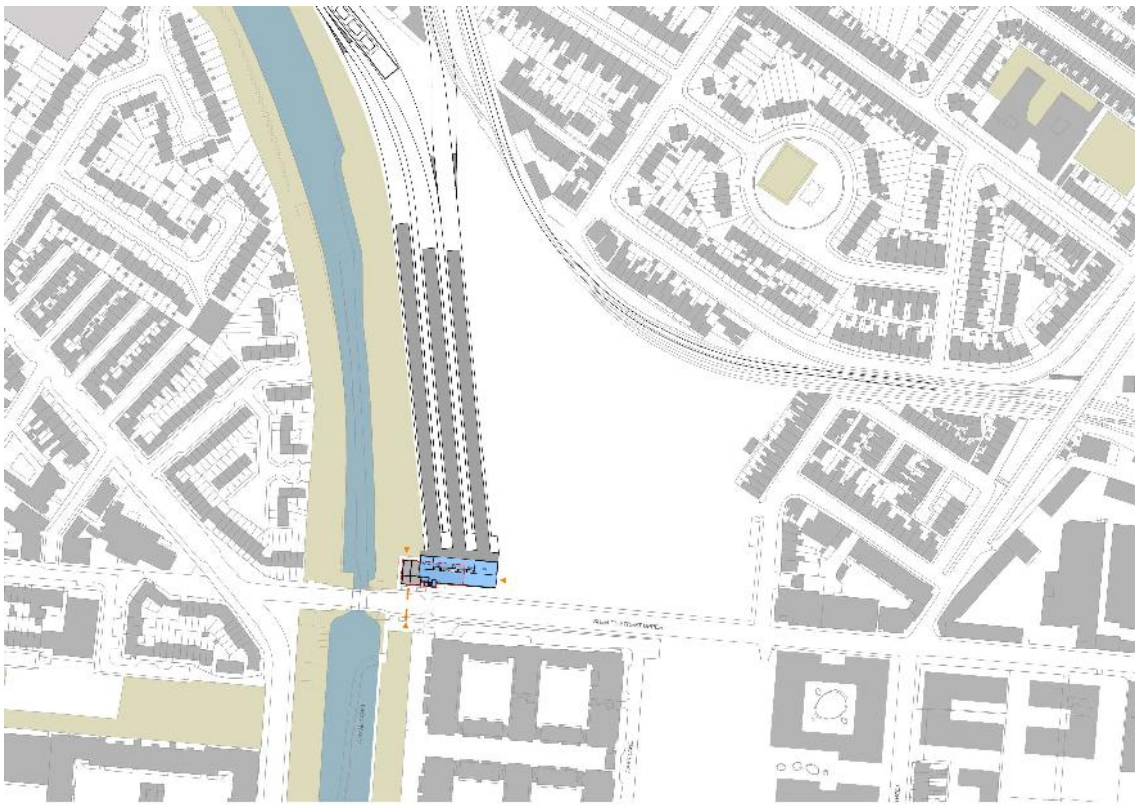


Figure 4.4. Option A1 General Layout

The existing station building operation (entry and exit flow, means of egress location, fare collection systems, etc.) will be maintained as far as possible. However, some modifications will be required as the number of trains and the number of passengers will increase significantly.

4.4.2 Option A2

Option A2 considers moving the station to the East, at the end of Park Lane. This would allow for an improved alignment solution and a better connection towards the Spencer Dock LUAS station. This Option avoids the short distance between the northern end of the platforms and the divergence of the three rail routes the station serves. See **Figure 4.5** for the plan layout of option A2.

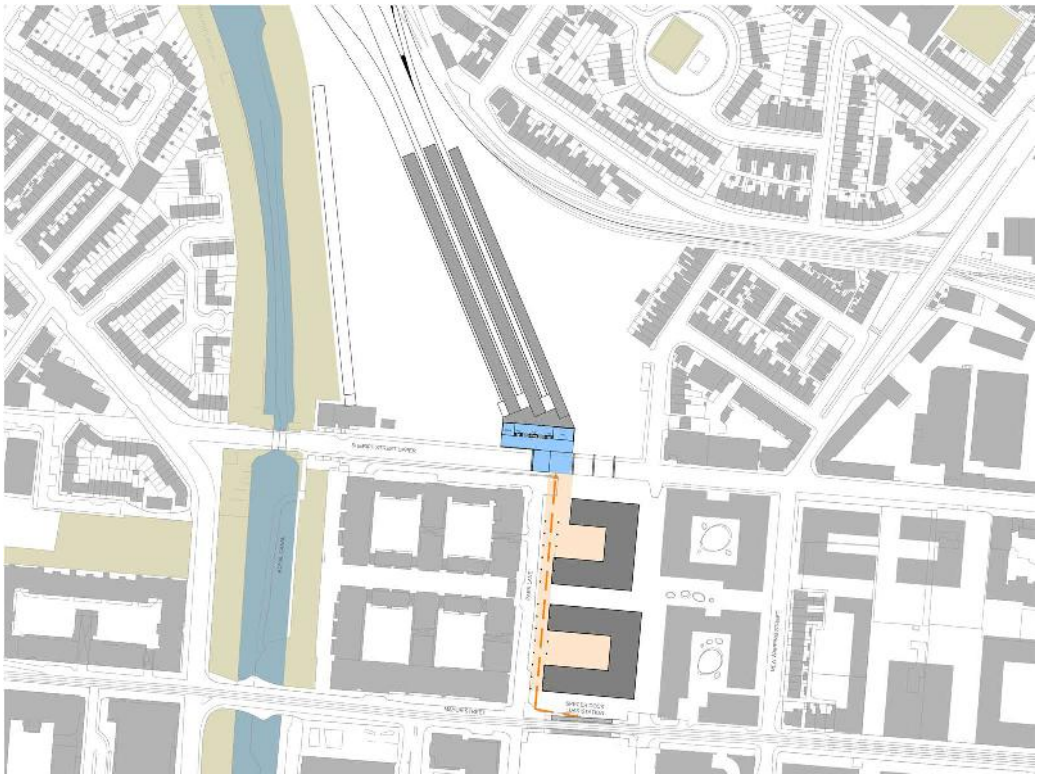


Figure 4.5 Option A2 general layout

Platforms and tracks will be angled relative to the existing platforms of Docklands Station. This will ensure:

- Smoother track alignment tie-ins with the three rail routes the station is to serve;
- Preservation of the connection to East Wall Yard via Northern Line.
- Docklands Station Option A2 will be provided with five tracks, two island platforms, and one side platform. This layout allows this option to:
    - Access four platform tracks from the MGWR line;
    - Access two platform tracks from the GSWR line and the Northern line;
    - Interconnect the MGWR, GSWR and Northern Lines, fully complying with operational requirements;
- Enhancement of the station capacity and operational flexibility.
- East Wall Yard connection with the MGWR and GSWR in not feasible without the use of a diamond crossing.

The station building will be located to the North of Sheriff Street Upper, adjacent to the overbridge. Access to the station will be provided under the bridge to allow a more direct connection to Spencer Dock LUAS station approximately 5No. minutes away. This link between the two stations offers the opportunity for the North Lotts masterplan to create a possible new commercial porched boulevard that would provide a covered link between the stations. Therefore, the Option A2 station location offers the opportunity to create a commercial axis in Park Lane.

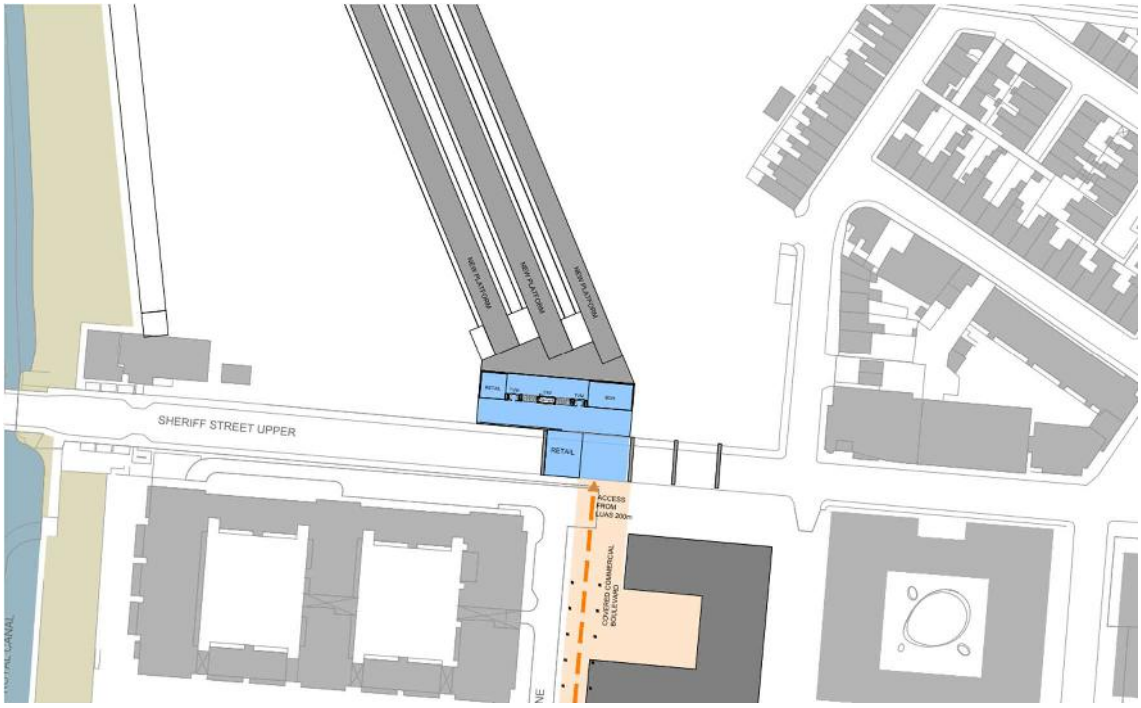


Figure 4.6 Option A2 Station Access

4.4.3 Option A3

Option A3 is also placed at the northern end of Park Lane. This solution enhances Option A2 by providing the possibility of a future link between the station and the East Wall neighbourhood via a pedestrian and cycle route. Although this pedestrian bridge is not included in the station project investment, this improvement would mean the removal of the existing barrier from East Wall to the city centre following the spirit of the Dublin Docklands Area Master Plan 2008.

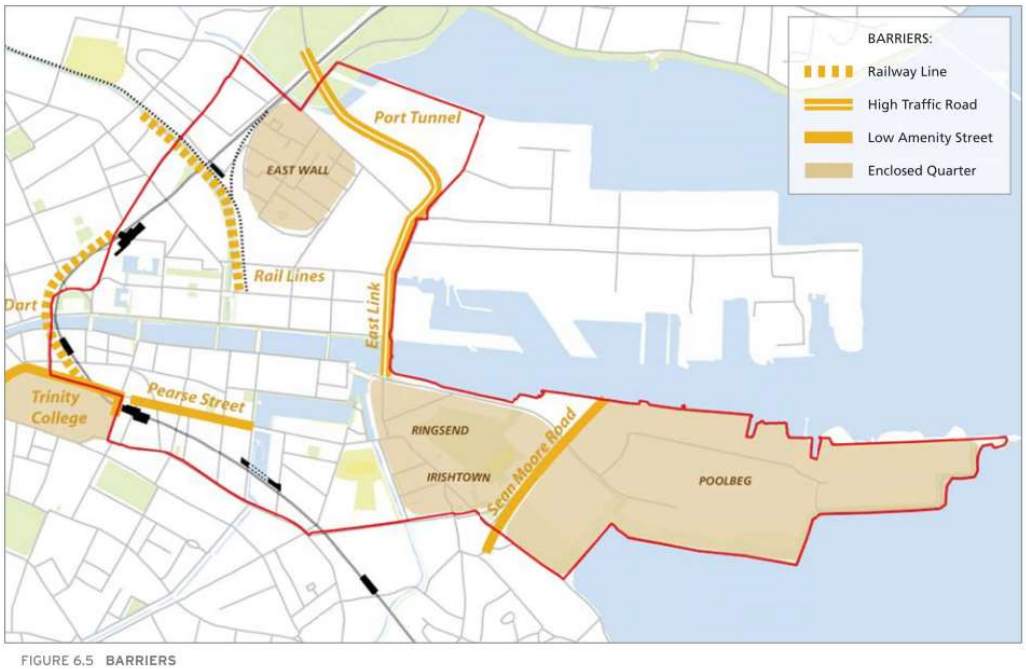


Figure 4.7 Dublin Docklands Area Master Plan 2008. Urban design framework. Urban barriers

Figure 4.8 Dublin Docklands Area Master Plan 2008. Transport and Infrastructural framework

This option, as in Option A2, avoids the short distance between the northern end of the platforms and the divergence of the three rail routes the station serves.

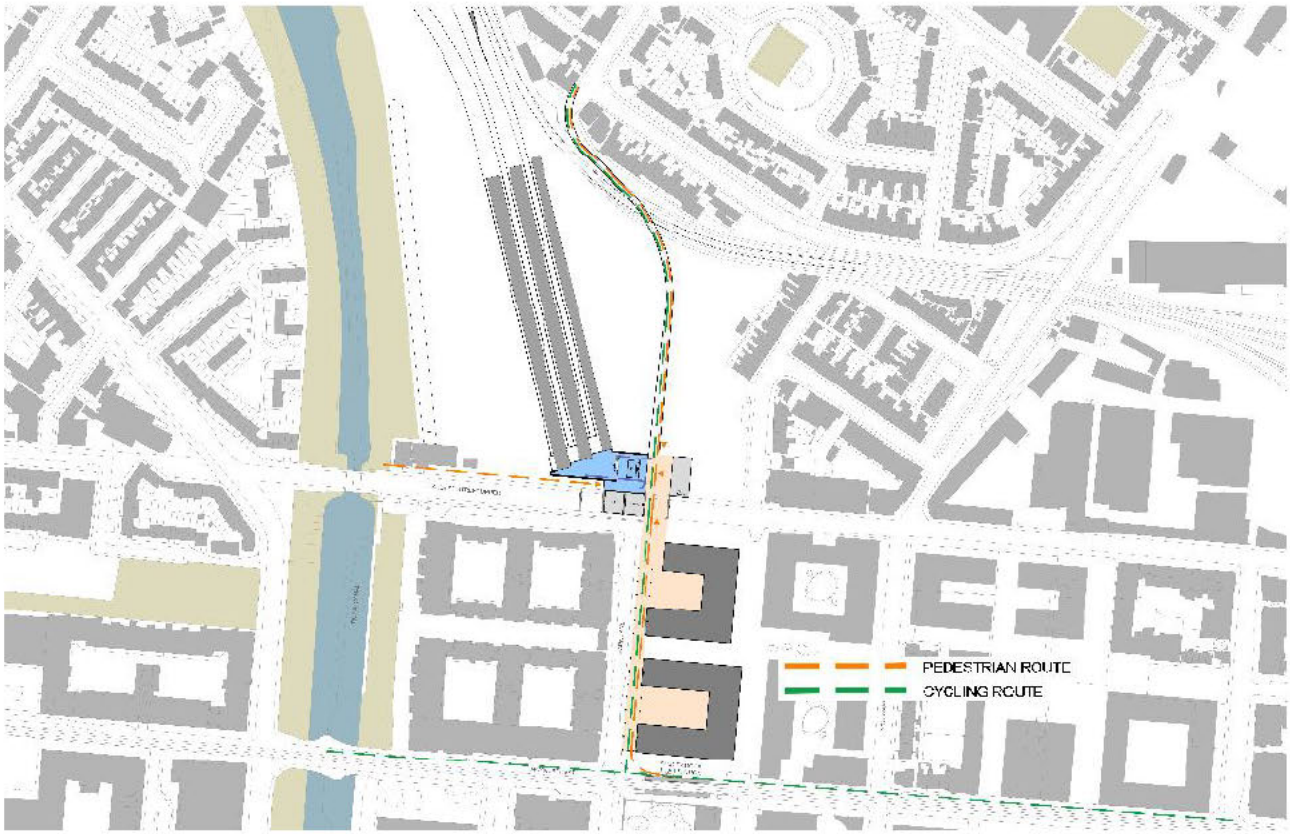


Figure 4.9 Option A3 general layout

Platforms and tracks will be angled relative to the existing platforms of Docklands station, similar to Option A2, but is shifted slightly west. This will facilitate:

- Smoother track alignment tie-ins with the three rail routes the station is to serve;
- Preservation of the connection to East Wall Yard via Northern Line;
- Creation of a pedestrian and cycling route connecting East Wall neighbourhood.

Docklands Station Option A3 will serve five tracks, two island platforms, and one side platform. The proposed track layout will secure the following characteristics in respect to the station:

- Access available to four platform tracks from the MGWR line;
- Access available to two platform tracks from the GSWR line and the Northern line;
- Interconnection available between the MGWR, GSWR and Northern Lines, fully compliant with operational requirements;
-
- East Wall Yard connection with the MGWR and GSWR in not feasible without the use of a fixed diamond crossing

The station will create a new interconnection node between the East Wall, Sheriff street Upper and the new commercial boulevard that would provide a covered link to Spencer Dock LUAS Station. This option also offers the regeneration of the Sherriff Street Upper underpass, including different uses that improve the passenger experience, such as bike parking or retail areas.

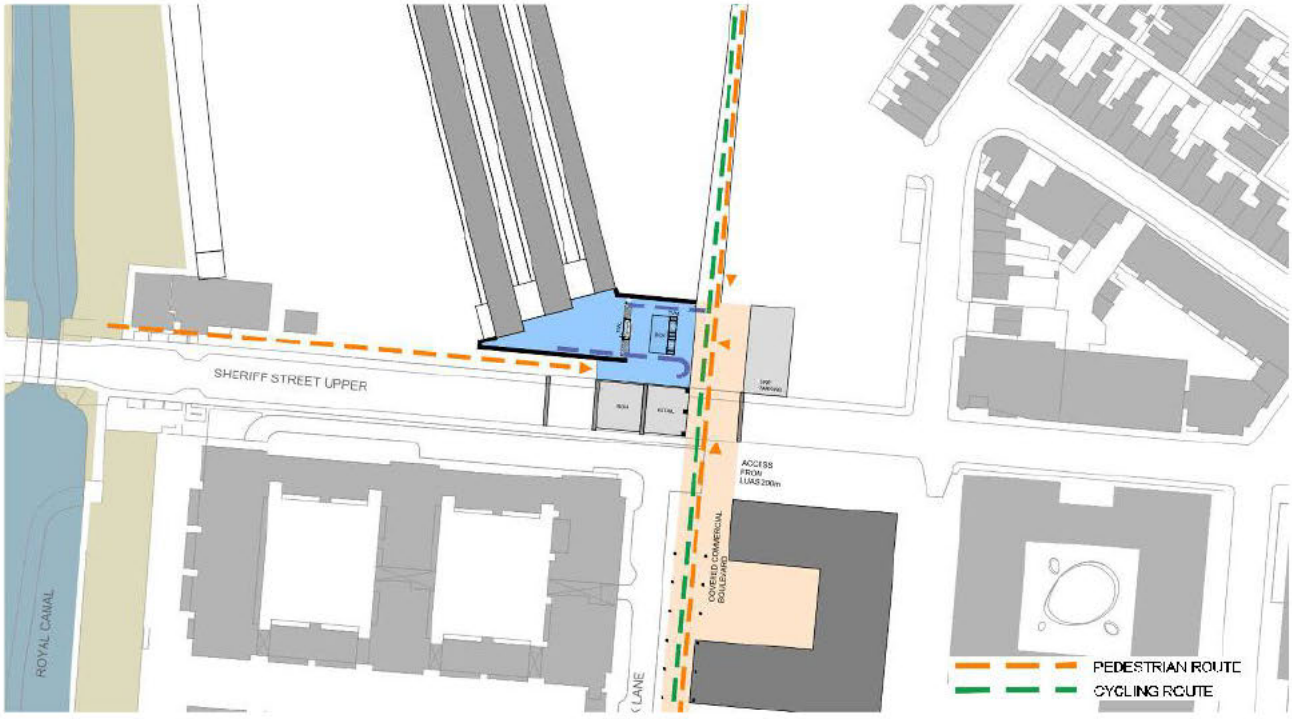


Figure 4.10 Option A3 station access

4.5 Site B Location

Site B is located at Spencer Dock South of Sheriff Street Upper and north of the current Spencer Dock LUAS station. The site is part of the North Lotts & Grand Canal Dock Planning Scheme.

Part IX of the Planning and Development Act 2000-2011 provides for the designation of a Strategic Development Zone (SDZ) to facilitate development which in the opinion of the Government is of economic or social importance to the State. Lands located at North Lotts and Grand Canal Dock in the Dublin Docklands were designated by the Government as a site for an SDZ on 18 December 2012 and a Planning Scheme was prepared.

Each block is subdivided by smaller local streets and spaces which bring permeability to the large City Blocks and divide each block into four or more robust urban blocks.

One of the sites proposed for Docklands station is placed in City Block Nº 2 of the planning scheme. It is this that corresponds to Option B.

The documentation describes City Block Nº 2 as largely undeveloped with a small terrace of 2 storey houses on Mayor Street frontage. Figure 4 illustrates SDZ Block Nº2.

Figure 4.11 North Lotts & Grand Canal Dock SDZ Planning Scheme. Block 2.

The main objectives described for the City Block Nº 2 are:

- *40 Residential / 60 Commercial use mix over City Block. Following the successive Planning applications submitted for the City Block 2 (DSDZ289618, DSDZ411119 and DSDZ259020) 2B and 2D Blocks will be residential use, while 2A and 2C* (where Site B is located) *remain commercial.*
- *Commercial uses to be concentrated on 2C, fronting Station Square, and west side of 2D to form a commercial hub at confluence of LUAS line and DART Inter-connector.*
- *Residential to be concentrated to east side of 2D.*
- *Blocks 2A and 2C on DART Underground line shall be used as location for temporary pavilion structures.*
- *Ground floor active uses to be provided fronting Station Square.*
- *Block 2C to be 12 storey commercial and remaining blocks to be range between 5 storey commercial / 6 storey residential and 6 storey commercial / 7 storey residential.* According to the "Review of

Building Height & Proposed Amendments to North Lotts and Canal Dock Planning Scheme" published on October 2019, the remaining blocks could go up to 10 residential storey / 8 storey commercial at some points as illustrated in the image below.

Figure 4.12 Proposed Amendments to the North Lotts & Grand Canal Dock SDZ Planning Scheme concerning Building Heights

- *City Block 2 to include East-West street linking existing pedestrian street in STUV block to New Wapping Street approximately mid-way along the block.*
- *City Block 2 to include landscape plaza fronting Block 2C to provide for an attractive space adjacent the Luas stop.*
- *City Block 2A & 2C shall be retained as a reservation strip for the future provision of the DART Underground Station. No permanent structures shall be built over this until the position of the DART Underground Station has been confirmed. In the interim period, temporary uses and/or pavilion structures will be considered. Any future over-site development must incorporate the smoke ventilation and air intake provisions into their design, and that temporary buildings should not pose a risk to the delivery of the station.*

Therefore, City Block 2C becomes an opportunity for a landmark building facing the Luas station and providing entrance for the Docklands Station. North Lotts Masterplan foresees a 12 storey (maximum) 10 storey (minimum) commercial building, to achieve balance between hub quantum and view lines from Georgian mile. On the southern façade of the landmark building, a plaza will integrate the Luas station at street level and the entrance to Docklands station, giving intramodality to the new hub created at this location.

The North Lotts & Grand Canal Dock Planning Scheme also establishes five main hubs in the SDZ. One of these is located in Spencer Dock LUAS station area.

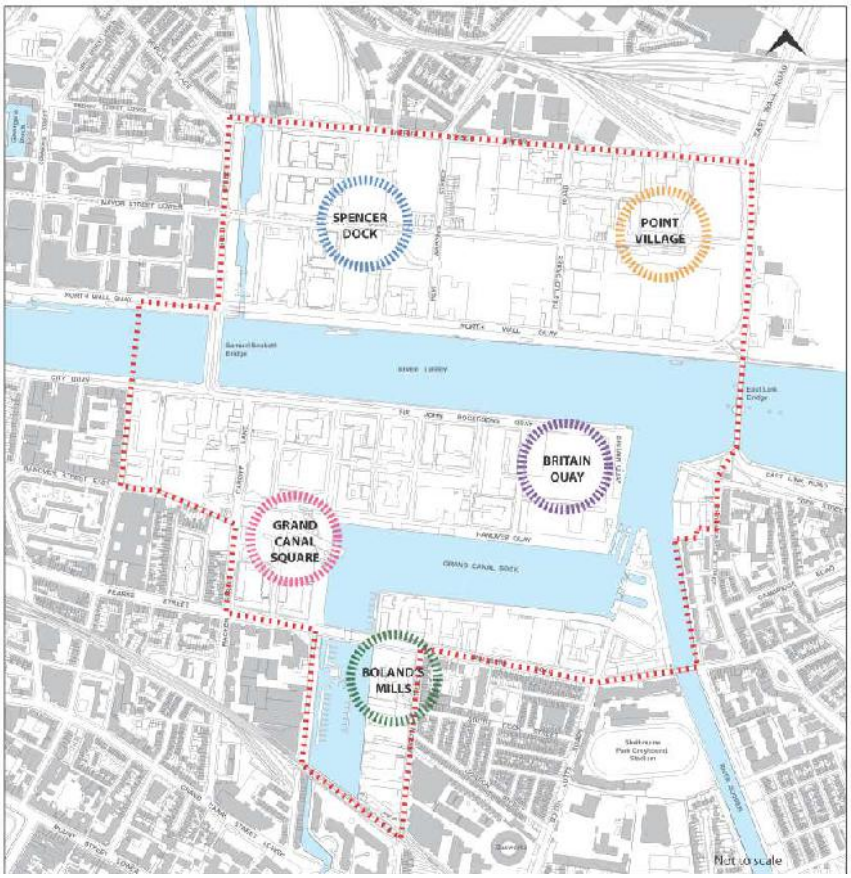


Figure 4.13 North Lotts & Grand Canal Dock Planning Scheme main hubs

Two blocks are foreseen to be built in the plot. One of them contains a twelve floors landmark building facing South and leaving a space for a plaza between the building and Spencer Dock LUAS station.

Figure 4.14 Site B location and volumetric view of the buildings planned for the site in the North Lotts & Grand Canal Dock Planning Scheme

The majority of the site is owned by CIÉ as represented with a green hatch in the image below. It includes Mayor Street Upper and Sheriff Street Upper bridge, including the land it is on. The unhatched area to the north-east of the Docklands Site B plot is a land parcel still in the ownership of Spencer Dock Development Company Limited, previously acquired from Green Sunrise Waste management.

Figure 4.15 Extract of Spencer Dock MDA Lands - Overall Boundary Site Plan

The location of the station in Site B is more complicated than in Site A, as it must deal with the two buildings proposed in the North Lotts planning scheme above, and with the Dart Underground station below.

Also, there is a significant constraint in the Sheriff Street Upper overbridge due to the lack of clearance electrification. There are currently 4.61 metres vertical clearance available under Sheriff Street Upper bridge.

There is also a level difference between the Luas track level and the proposed track level under the bridge of approximately 2.5 metres. The Luas station is at level +3.00, and the underpass is at level +0.30. as illustrated in **Figure 4.16**[1]

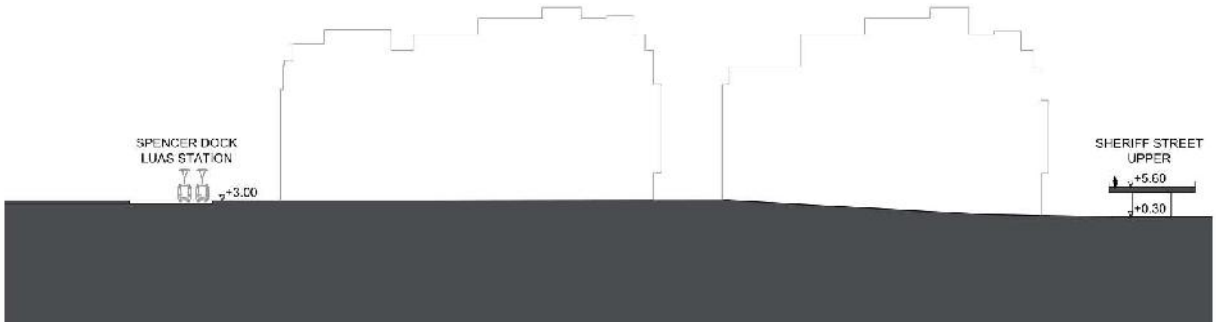


Figure 4.16 Longitudinal section of the site.

These constraints will result in a difference of level between the proposed DART station platform levels and the existing LUAS station level which can be addressed in two different ways as described for Options B1 and B2 below.

This study is based on the provision of 4 tracks and 2 island platforms to achieve the desirable overhead structure design integration.

[1] These levels are approximate as the topographic survey is not finalised yet.

4.5.1 Option B1

The first Option considered for the Site B location tries to minimise the excavation of the works needed to construct the tracks and platforms. The track level is placed at level -1.60 to permit the minimum height clearance below Sheriff Street Upper overbridge.

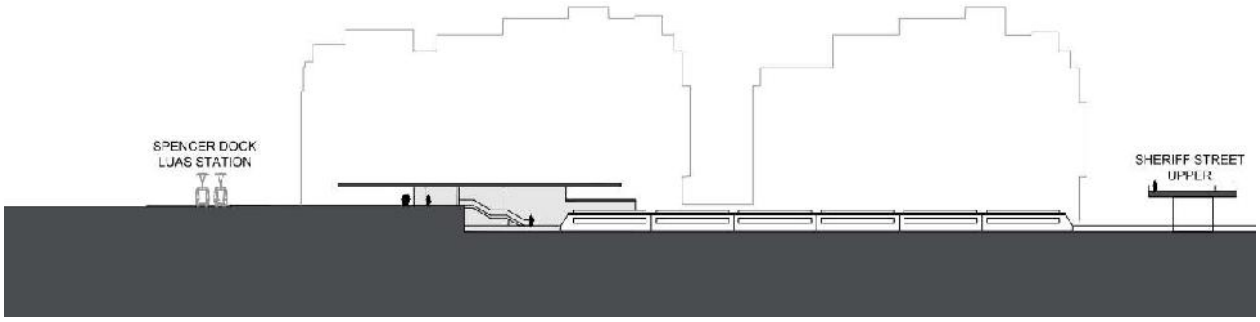


Figure 4.17 Option B1 general layout section

Platforms and tracks will be angled relative to Park Lane. This will ensure:

- Smoother track alignment tie-ins with the three rail routes the station is to serve;
- Preservation of the connection to East Wall Yard via Northern Line.
- Docklands Station Option B1 will be provided with five tracks, two island platforms, and one side platform.

This proposed layout allows this option to:

- Access four platform tracks from the MGWR line;
- Access three platform tracks from the GSWR line
- Access two platform tracks from the Northern line;
- Interconnect the MGWR, GSWR and Northern Lines, fully complying with operational requirements;
- Enhance the station capacity and operational flexibility.

It is noted that Sheriff Street Upper overbridge must be altered over the proposed station to accommodate the new track layout.

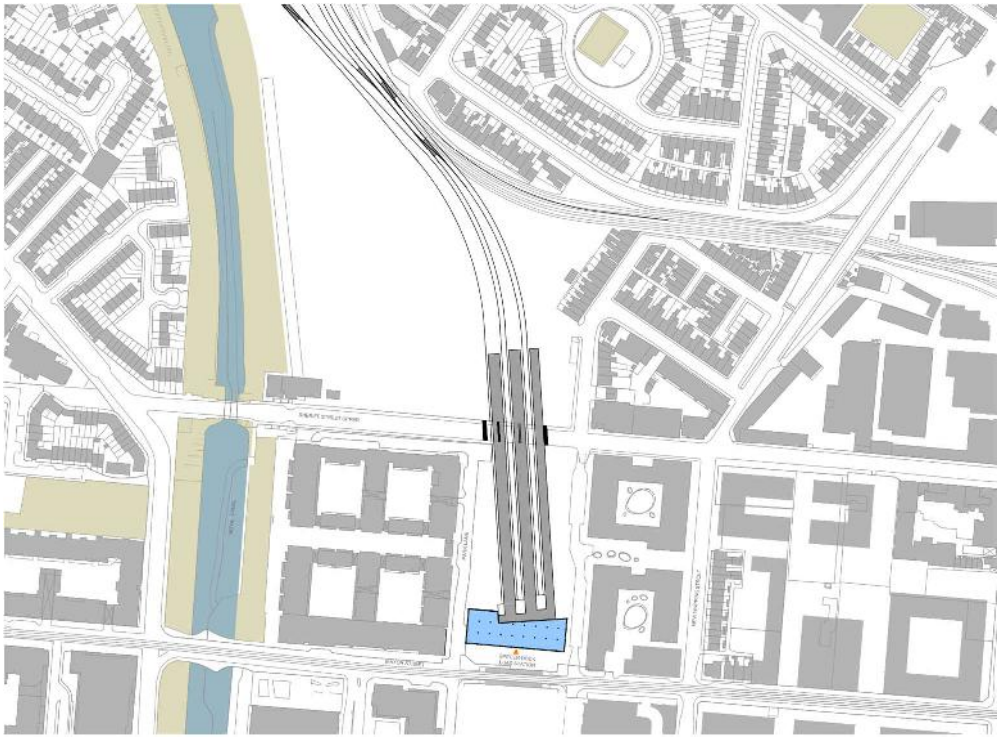


Figure 4.18 Option B1 general layout plan

The proposed station access will coincide with the ground floor of any commercial building to be constructed subsequently under the pre-existing SDZ planning permission and is proposed to front the Luas station plaza, providing a direct interchange between the two means of transport.

The future overhead structure design will be developed around the station platforms maintaining the space of the platforms and their canopies open for ventilation purposes.

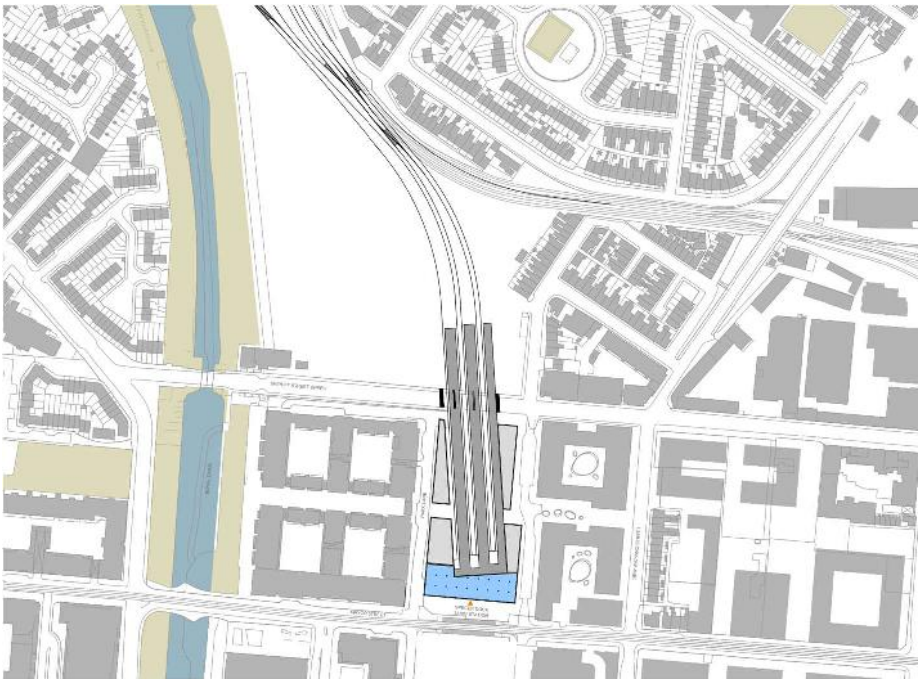


Figure 4.19 Option B1. Ground floor including overhead structure design

Figure 4.20 below illustrates the staged delivery of the station and multistorey commercial development on the site.

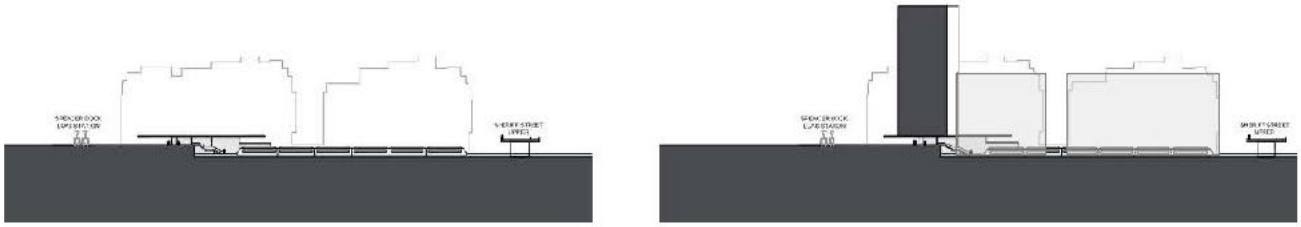


Figure 4.20 Option B1. Construction phases 1 and 2

Phase 1: Docklands Station construction 4 metres below Major Street level at Block 2A and 2C site.

Phase 2: Construction of the potential landmark building above Docklands Station, and the multi storey commercial building associated with the site by others.

4.5.2 Option B2

Option B2 solution provides better integration with the surrounding buildings by aligning the platform of the station to the North Lotts planning scheme gridlines. This alignment also makes the layout more compatible with the structure of the buildings above. The platforms need to be pushed south to ensure standards are met in respect of the proposed track alignment on the immediate approach to the station. The only practicable way to move the platforms south is by lowering the top of rail level so the tracks can be pass under the Spencer Dock Plaza with sufficient structural and OHLE clearance. The resulting level for the platforms, for this option, is -3.60m. Refer to **Figure 4.21** below.

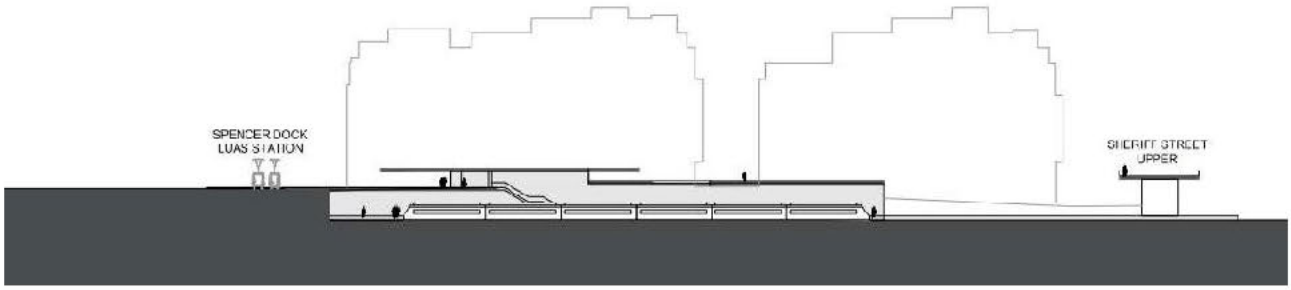


Figure 4.21 Option B2 general layout section

This proposed configuration of Option B2 will ensure:

- Platforms and tracks are aligned to the structural grid of the proposed overhead structure design buildings which have planning permission;
- Preservation of connection to East Wall Yard via Northern Line.
- Five tracks are served by two island platforms and one side platform.

It is noted that platform orientation causes an alignment constraint in terms of horizontal clearance. The effects of end throws and centre throws of vehicles must be considered at the end of the platforms due to the proximity of the curved tracks. Thus, the three platform ends should be trimmed in order to avoid clashes of the wagons with the platforms.

The proposed layout allows Option B2 to:

- Access four platform tracks from the MGWR line;
- Access two platform tracks from the GSWR line and the Northern line;

- Interconnect the MGWR, GSWR and Northern Lines, fully complying with operational requirements;
- Enhance station capacity and operational flexibility.

Sheriff Street Upper overbridge must be altered over the proposed station to accommodate the new track layout.

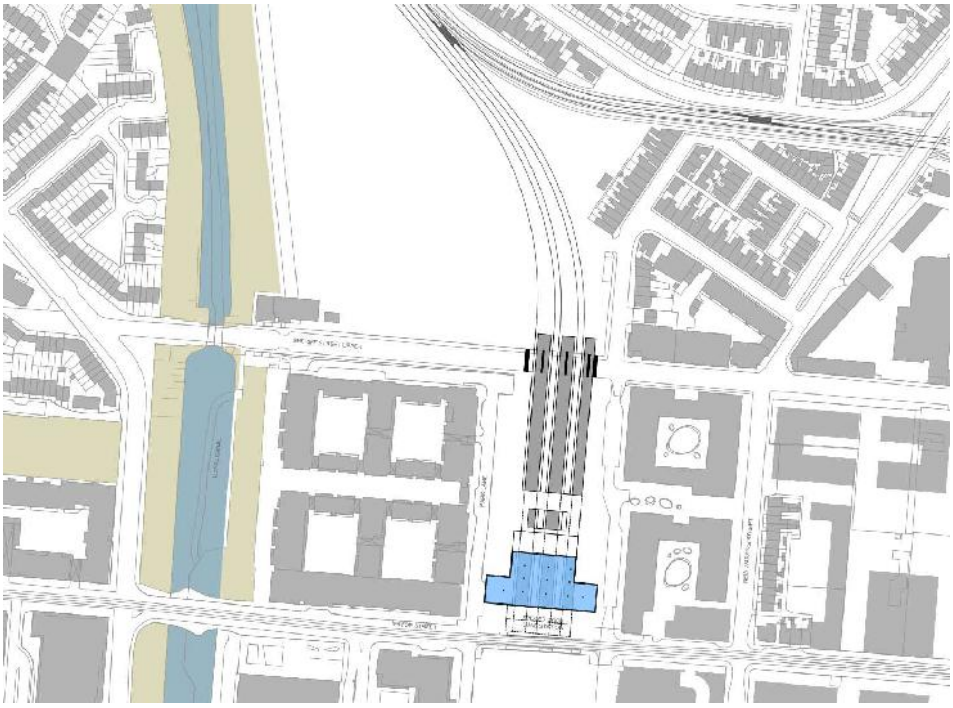


Figure 4.22. Option B2 general layout plan

The proposed station access podium is in the same location as that of Option B1, the ground floor of the landmark building that is facing the LUAS station plaza. It provides a direct interchange between the two means of transport.

The future overhead structure design can found within the areas on either side of the proposed platforms, thus minimising the interference between the structure of the station and the structure of the overhead structure design buildings. With the overhead structures bridging the station, the open space above the platforms can be maintained to allow the ventilation of the station.

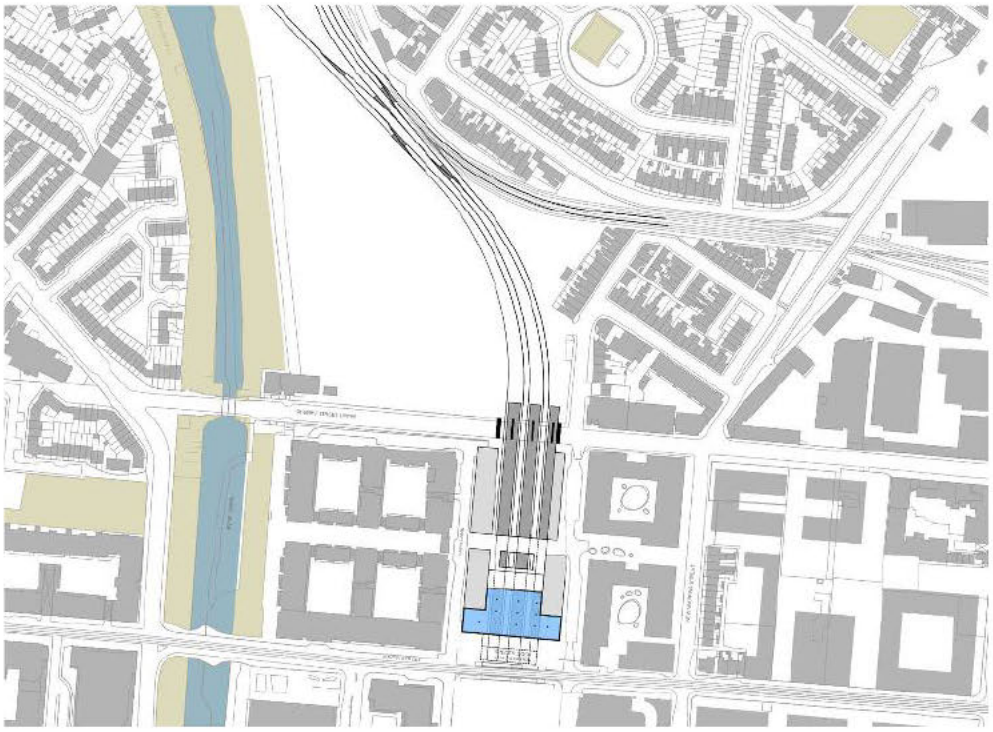


Figure 4.23. Option B2 Ground floor including overhead structure design

The impact of this solution on the DART Underground project, in this case, is also significant. However, a solution is feasible to allow the construction of a definitive station prepared to connect with the DU project in the future.

The proposed alignment has a minor impact on the TBM portal tunnel. A redesign of the TBM portal retaining walls in the areas affected by the new railway alignment will be needed. However, the general construction strategy of the DART Underground portal tunnel could be maintained as it is proposed. During the Dart Underground construction, the speed of the train close to the works may be affected.

Figure 4.24 below illustrates the staged delivery of the station and multistorey commercial development on the site.

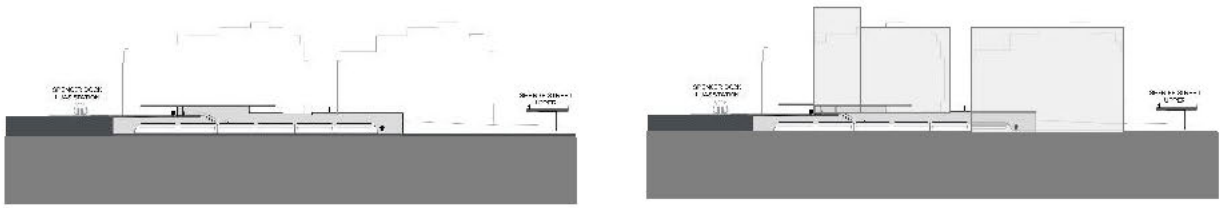


Figure 4.24. Option B2. Construction Phases 1 and 2

Phase 1: Docklands Station construction 7 metres below Major Street level at Block 2A and 2C site.

Phase 2: Construction of the potential landmark building above Docklands Station, and the multi storey commercial building associated with the site by others.

4.6 Multi-criteria Assessment No.1

The following Station Options were advanced for Multi-criteria Assessment No.1.

Option	Location	Description
A1	Current Station Location	Retains existing platforms and canopy with additional platforms to east.
A2	At the end of Park Lane	New Station accessed off Sheriff Street.
A3	At the end of Park Lane	New Station accessed off Sheriff Street with Pedestrian and Cycle link to East Wall.
B1	Mayor Street Lower -	Platforms and tracks angled relative to Park Lane
B2	Mayor Street Lower	Platforms and tracks parallel to Park Lane

The detailed Assessment is included in Appendix 4 to this report.

The table below summarised the outcome of the assessment.

Criteria	Option A1	Option A2	Option A3	Option B1	Option B2
Economy	Some comparative advantage over other options	Some comparative advantage over other options	Some comparative advantage over other options	Some comparative disadvantage over other options	Some comparative disadvantage over other options
Integration	Significant comparative disadvantage over other options	Significant comparative disadvantage over other options	Some comparative advantage over other options	Some comparative advantage over other options	Significant comparative advantage over other options
Environment	Some comparative advantage over other options	Some comparative advantage over other options	Some comparative advantage over other options	Some comparative disadvantage over other options	Some comparative disadvantage over other options
Accessibility & Social Inclusion	Some comparative disadvantage over other options	Some comparative disadvantage over other options	Some comparative advantage over other options	Some comparative advantage over other options	Some comparative advantage over other options
Safety	Some comparative disadvantage over other options	Some comparative disadvantage over other options	Some comparative advantage over other options	Some comparative advantage over other options	Some comparative advantage over other options
Physical Activity	Comparable to Other Options	Comparable to Other Options	Comparable to Other Options	Comparable to Other Options	Comparable to Other Options
Progress to MCA2	**No**	**No**	**Yes**	**No**	**Yes**

In the comparison above, Option A1 and A2 do not perform as well as other options for the following principal reasons:

- They do not support planning integration to the same degree as other options considered;
- They are more remote than other options and do not offer the same level of connection to other modes of transport than other options;
- Their remoteness also undermines their performance in respect of safety and social inclusion.

Although Option B1 performs equivalent to Option A3 and Close to the level of performance of Option B2 it falls away for the following principal reasons:

- Option B1 is skewed to the street block into which it fits and consequently curtails to ease to which a multistorey commercial development can be built above it more so than does Option B2;
- Options A2, A3, B1 and B2 impact on the heritage Sheriff Street Upper Viaduct;
- Option B1 requires the top of rail level to be depressed below existing ground level resulting in the need for tanking;

In conclusion to the MCA1 process it was decided to develop the design of Options A3 and B2 to a higher level of detail and to carry out a second stage multi-criteria assessment on them to determine the preferred option.

5. Docklands Station Options MCA2

5.1 Introduction

MCA1 identified 2No. options, A3 and B2, for further development and advancement to MCA2. Both options were examined in significant detail to further optimise them and to verify their feasibility for implementation as part of the design.

The following developments were made in respect of Option A3:

- Track alignment further developed to optimise connectivity and to optimise the approaches to the station. This includes the implementation of a fixed diamond crossing on the Northern Line. The updated track layout on the approach to the station is included in the Permanent Way Options Selection Report (MAY-MDC-TRK-ROUT-RP-C-0002).
- Architectural details for the station have been advanced to facilitate a visual impact assessment and to provide enhanced detail for costing purposes.
- Construction methodology considerations have been developed for the proposed station.

Detailed architectural thematic proposals in respect of Option A3 are included in Appendix 2 to this report.

The following developments were made in respect of Option B2:

- Track alignment further developed to optimise connectivity and to optimise the approaches to the station. This includes refinement of the platform geometry to address the tight track geometry on the immediate approaches to the station. The updated track layout on the approach to the station is included in the Permanent Way Options Selection Report (MAY-MDC-TRK-ROUT-RP-C-0002) This update requires the relocation of an existing ESB substation and signalling building on the railway. Such relocation is not necessary for Option A3.
- Architectural details for the station have been advanced to facilitate a visual impact assessment and to provide enhanced detail for costing purposes;
- The station layout was modified to include four rather than five platforms to better accommodate the subsequent implementation of commercial multistorey development above the site;
- Conceptual ideas in respect of over station development have been put together to better characterise the potential for same for the proposed option;
- Construction methodology considerations have been developed for the proposed station.
- An updated Railsys Model with the station in this new location has been prepared and run to ensure that the selected TSS (Scenario 1b) fits also with this option.

Detailed architectural thematic proposals in respect of Option B2 are included in Appendix 3 to this report.

Updated details of each of the schemes are presented on the subsequent pages.

5.2 Description of Option A3

The new Docklands station Option A3 aims to start a process of urban regeneration with a strong influence on the immediate surroundings, improving urban connectivity and creating a new residential development. This reflects the local objective to develop the Docklands Station Plot as a future extension of the North Lotts.

The image below, **Figure 5.1** illustrates the proposed station within the developed site.

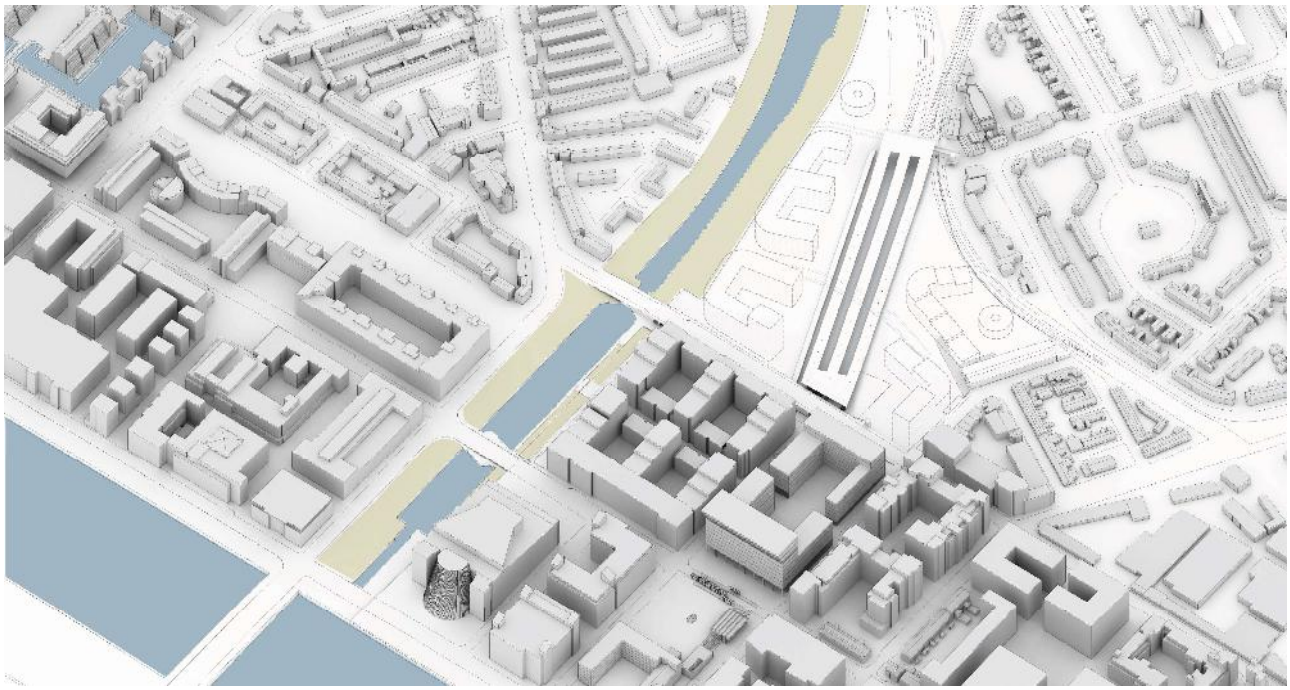


Figure 5.1 Illustration of Option A3 within the Developed Site.

Docklands plot is currently urbanized. Apart from the actual Docklands station there are ancillary buildings and rail infrastructure such as depots and workshops in a poor state of conservation.

Current buildings and infrastructure would be demolished during the Docklands station construction stage. Public utilities should also be deployed at that time.

Accessibility to both segregated plots needs to be considered. As shown in the image opposite, there are many possible access options depending on the type of entrance considered (pedestrian, vehicular, bicycles)

Underbridge access in Sheriff Street Upper is the main pedestrian connection to Docklands station and also for the whole development. For fitness and leisure, the Royal Canal connection is also considered.

Vehicular accessibility should also consider the connection to Sheriff Street Upper and Abercorn Road.

Figure 5.2 Access points to the site

Figure 5.3 below provides a contextual setting for the proposed station.

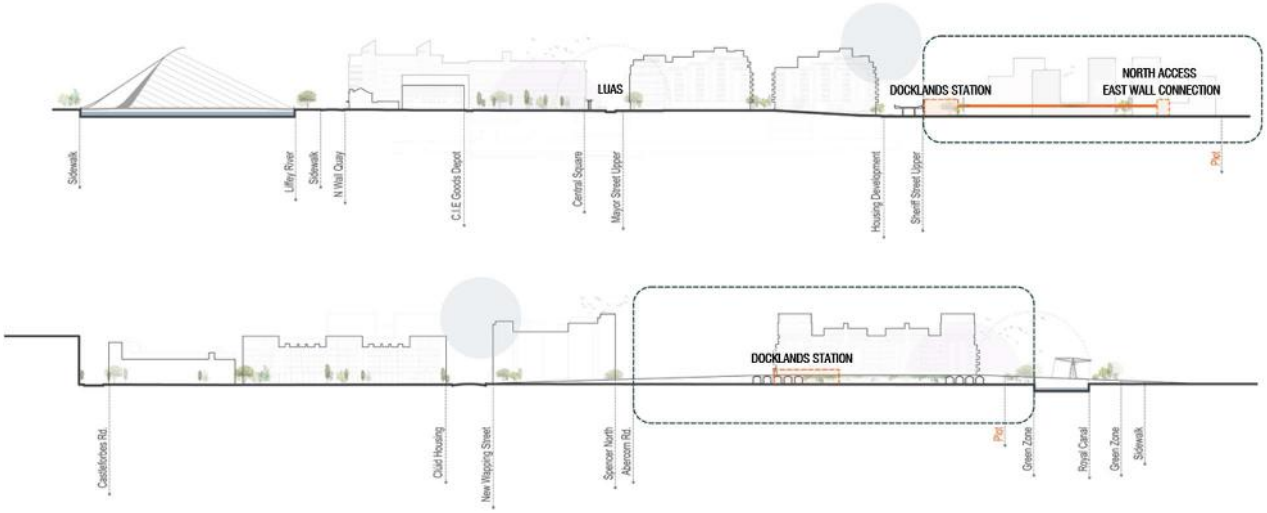


Figure 5.3 Contextual Setting for proposed Station Option A3.

Figure 5.4 below illustrates the potential for enhancement of pedestrian amenity in the vicinity of the proposed station development.

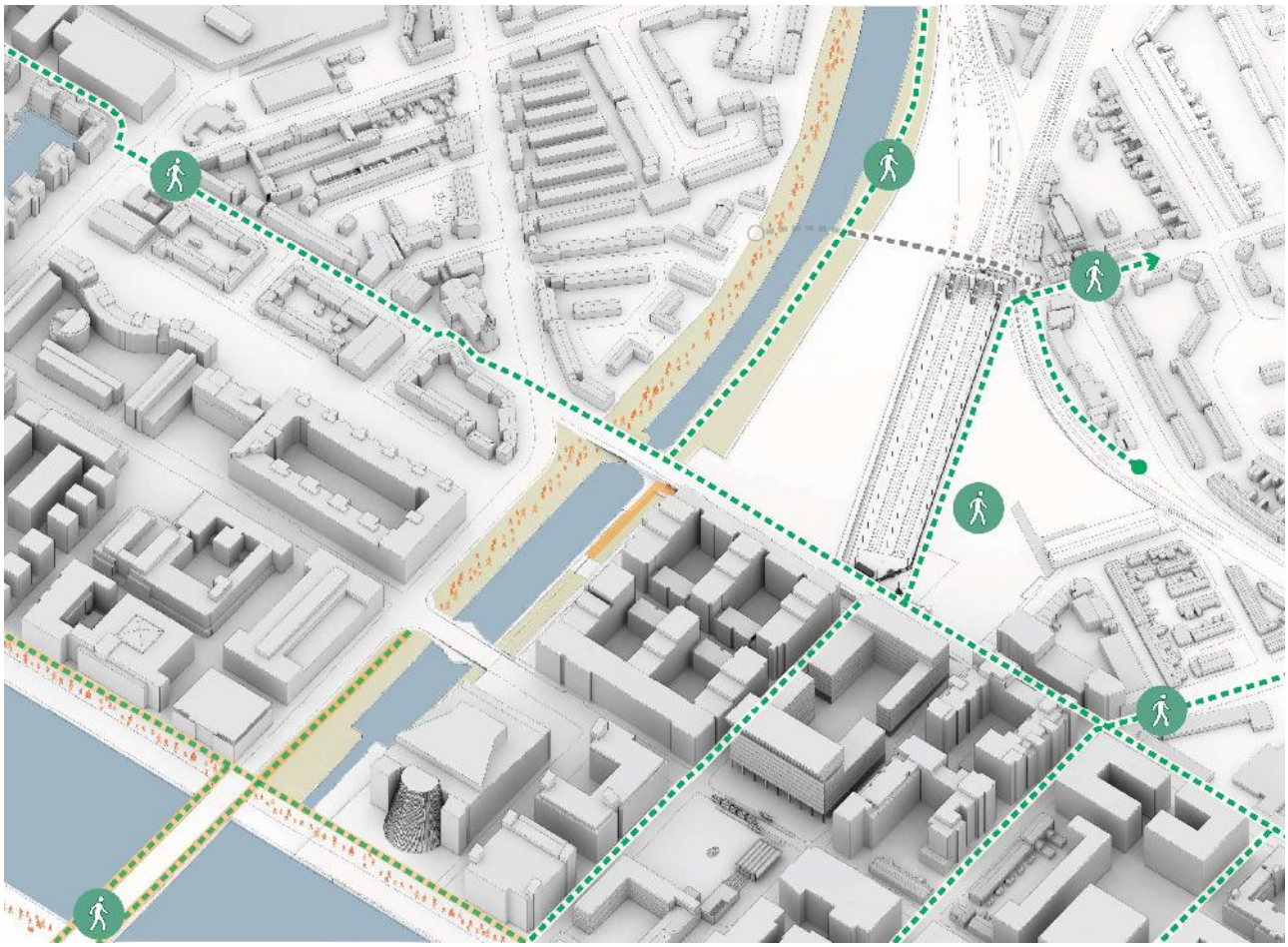


Figure 5.4 Pedestrian Amenity potential for proposed Station Option A3.

Pedestrian connectivity is based on three main axes. The first, with a functional nature, connects the Liffey footpaths and the East Wall neighbourhood, crossing the Luas, The North Lotts neighbourhood, Sheriff Street Upper (under the bridge) and Docklands Station. The second one connects the future public space over the

Royal Canal with Docklands Station development. The third axis connects the city centre and Docklands Station, linking Connolly Station through Sheriff Street, the Royal Canal and Sheriff Street neighbourhood.

A connection between the Dockland Station's north exit and the Royal Canal is suggested through an extension of the exit platform bridge to allow flow between the East Wall neighbourhood and the proposed public space along the Royal Canal route.

Figure 5.5 below shows the proposed station layout in plan.

Figure 5.5 Diagrammatic Layout of proposed Station Option A3.

A functional diagram of the proposed station is shown on **Figure 5.6** below:

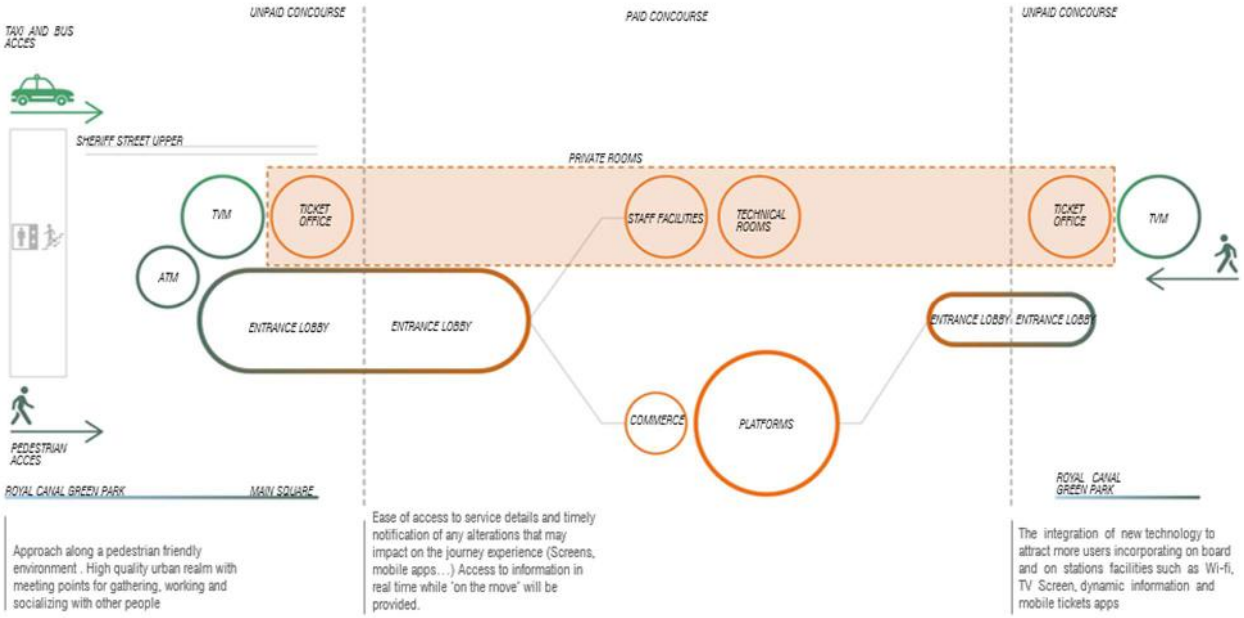


Figure 5.6 Functional Layout of proposed Station Option A3.

Figure 5.7 below provides a graphic render showing the proposed conceptual view of the proposed station.

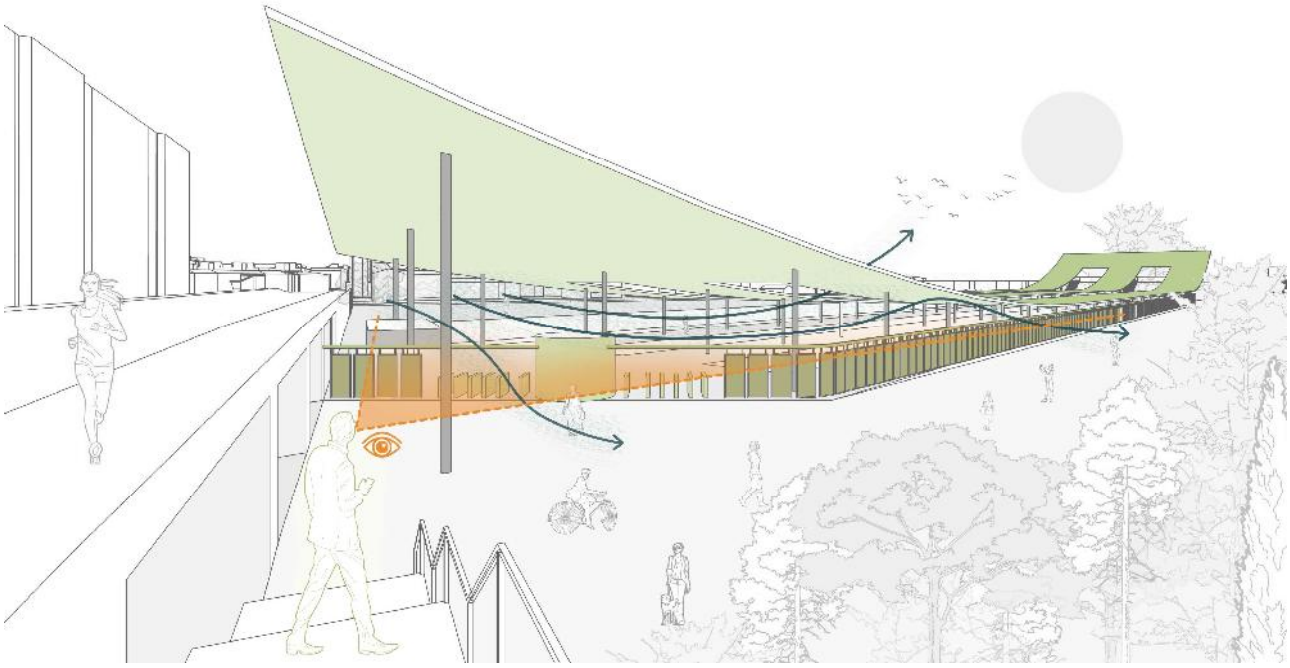


Figure 5.7 Conceptual View looking North west from Sheriff Street Bridge.

The station construction is very simple and is based on low complexity construction systems. The tracks are on the natural terrain level and the platforms rise 915 mm above the rails.

The spaces under Sheriff Street Upper is used to accommodate staff facilities & technical rooms. Ticket office Room and Retail are proposed to be self-supporting structures on the concourse.

To support the roof, a grid of steel columns is proposed. The height of these pillars depends on this position as the deck rises in the north and south concourses to generate a higher entrance level. On the platforms, this height is lowered to protect passengers from the weather conditions.

The connection with East Wall is raised to +7.0m to facilitate the electrified railway gauge. For this an elevated walkway is proposed, crossing perpendicular to the tracks. The north end of the station platforms accommodate the stairs and elevators from the platforms and this structure is supported on columns without interrupting the routes of the train tracks.

The main entrance its connected with Sheriff Street Upper by a stair and a lift that connect with the station.

To protect the platforms from the wind that comes mainly from the west, a vegetal slope is proposed to deflect the winds. In addition, the trees screen the station and reduce the wind speed

Figure 5.8 below illustrates the primary components of Station Construction.

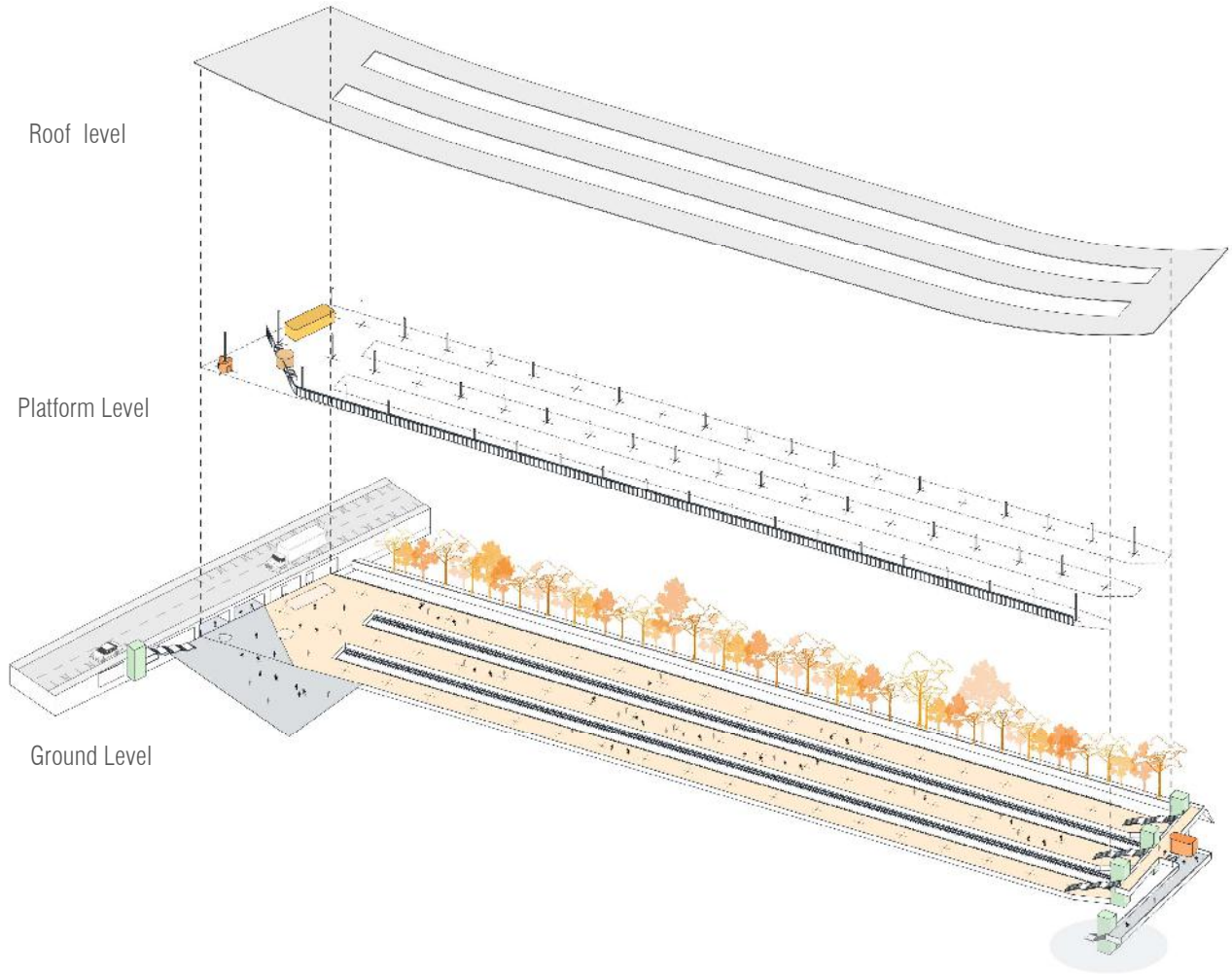


Figure 5.8 Illustration of the Primary Components of Station Construction.

5.3 Description of Option B2

The proposed Docklands station Option B2 aims to embed the proposed station within the planned development of the North Lotts, part of the Dublin Docklands Strategic Development Zone. The site of the proposed station already has planning permission for multistorey commercial development with landmark building, plaza and station beneath.

Figure 5.9 provides a contextual layout for the site of the proposed station. The development includes the 12 storey residential development at City Block 1, located to the west of the site as well as the Spencer North residential blocks located to the east within the City Block 2.

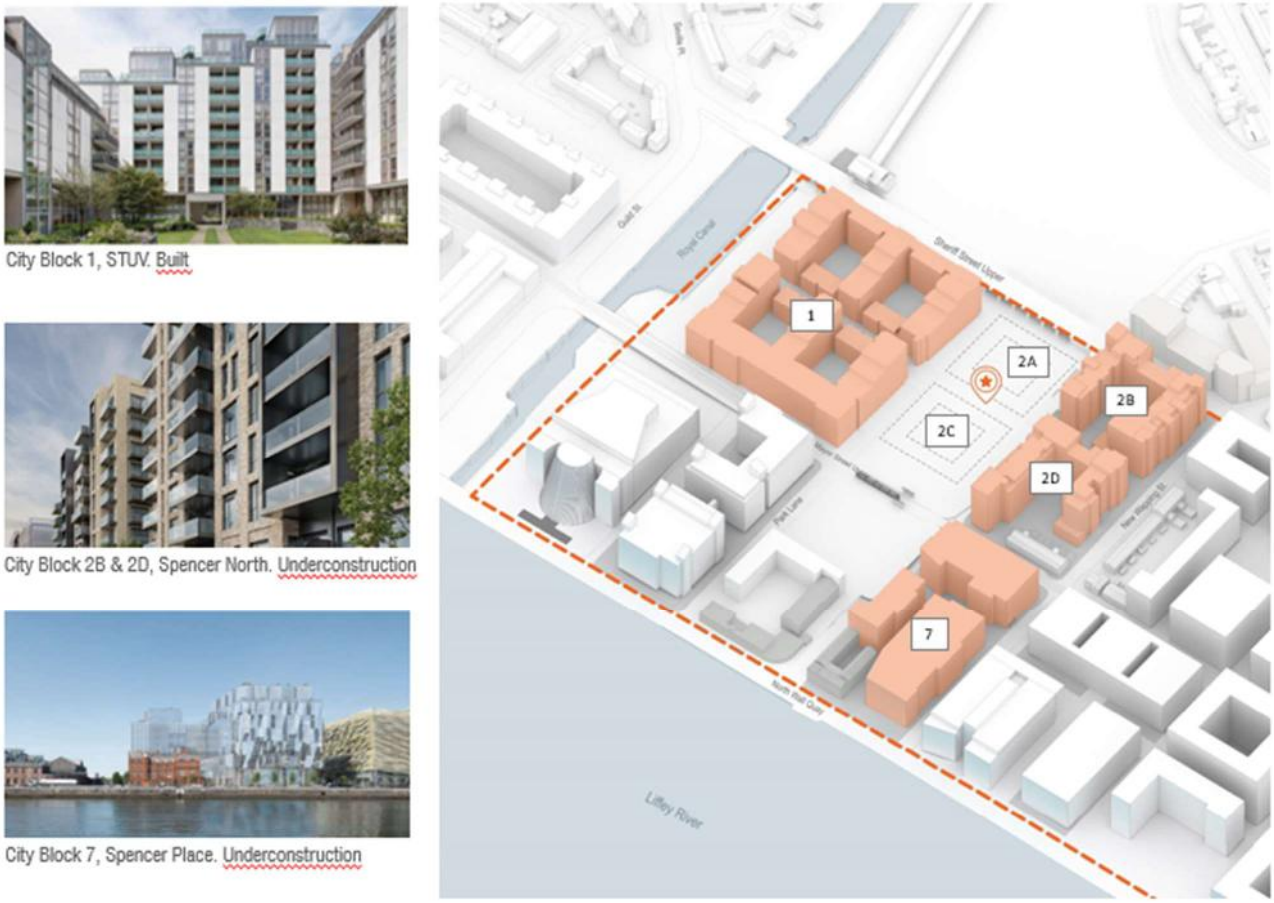


Figure 5.9 Contextual Setting of the Site of proposed Station Option B2

Integration of the Proposed Station

Figure 5.10 below provides illustration of the transport integration links available at the site of the proposed station.

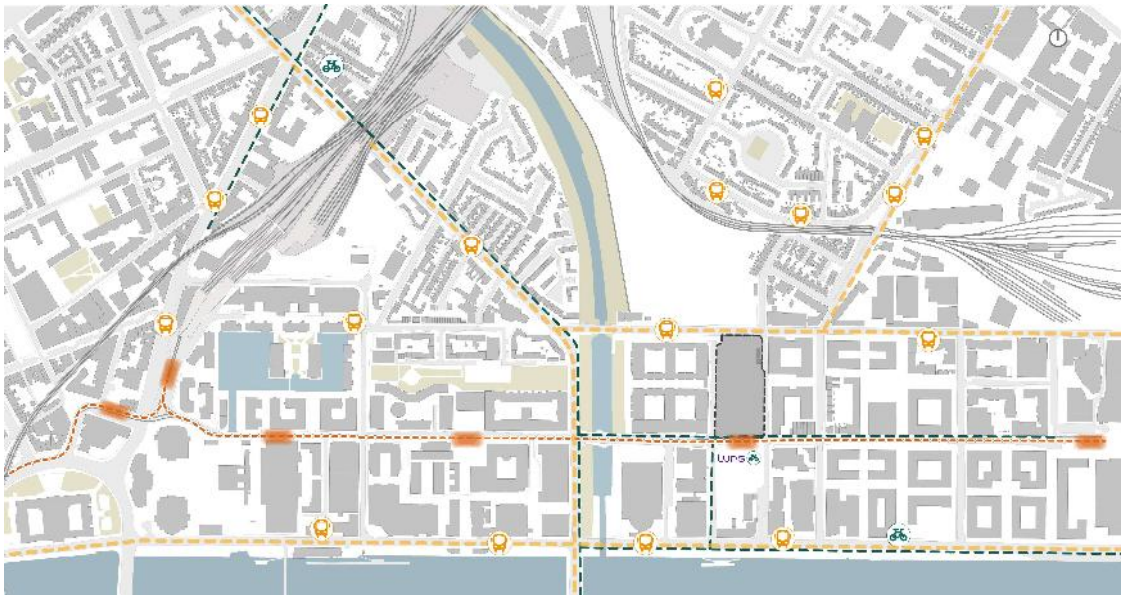


Figure 5.10 Transport Integration Links for proposed Station Option B2

Figure 5.11 below provides detail on commercial residential and public services planned or present in the immediate vicinity of the proposed station.

The new Docklands station will provide a smooth, safe and seamless access to the planned new developments and the major areas of interest in the North Lotts area.

The new Hub will have the epicentre in the public space facing the Docklands station entrance. This public space will be a combination of economic and transport role (as an interchange between Luas, DART, cycle and pedestrian routes) and the synergies that this brings in the future

Figure 5.11 Facilities and Services Integration for proposed Station Option B2

Access to the proposed station is located fronting Spencer Dock Luas station, thus fostering the interchange between both means of transport. The platforms need to be located at level -4.00 m, seven metres below the access level, to be able to align them to the same alignment established by the North Lotts planning scheme, and to pass below Sheriff Street Upper overbridge. The scope of works of the DART+ Programme is limited to the design stage shown below. In Figures 5.12 and 5.13 below.

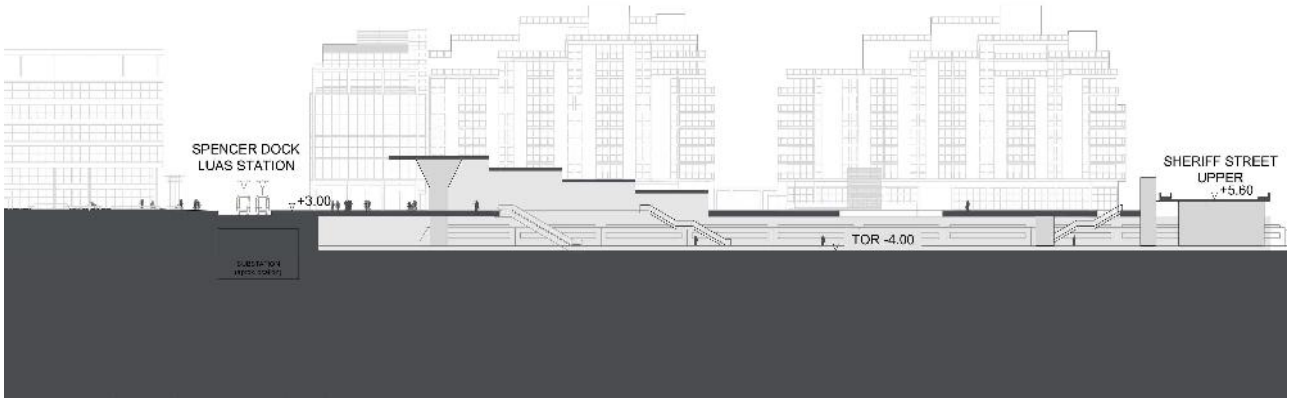


Figure 5.12 Sectional Elevation through proposed Station Option B2

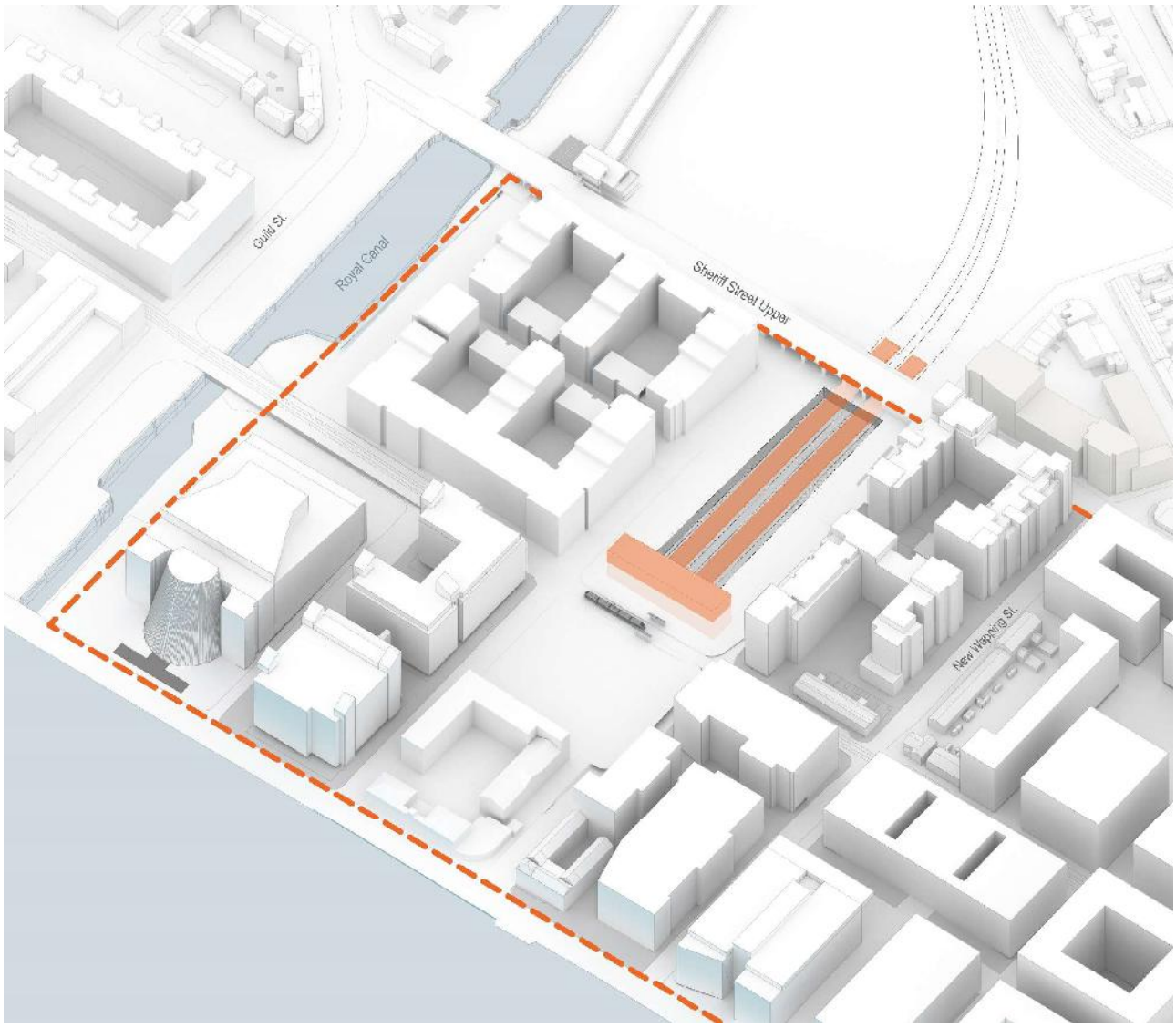


Figure 5.13 Graphic Representation of proposed Station Option B2

The proposed Station Design will accommodate the subsequent construction of mulistorey buildings, subject of pre-existing planning permission at a later stage. These are illustrated in the graphic below. Four platforms are finally provided, since the five tracks considered in early stages constrain the future OVERHEAD STRUCTURE DESIGN development. This solution has been confirmed by the Railsys model run during Concept Design stage.

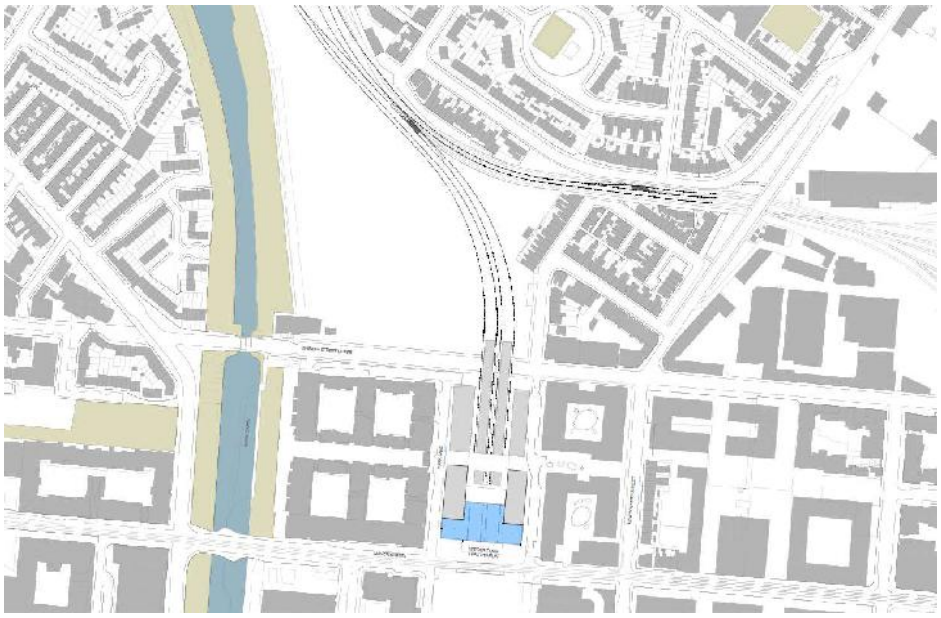


Figure 5.14. Option B2 Ground floor including overhead structure design

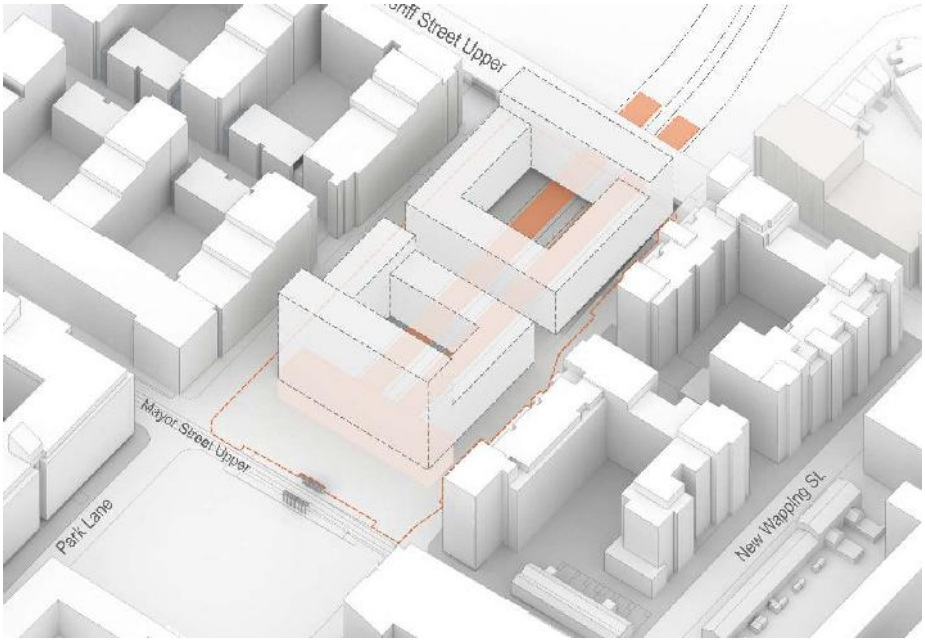


Figure 5.15. Graphic Representation of proposed Station Option B2 including overhead structure design

Selected Graphic layouts are provided below to illustrate the proposed configuration of the station.

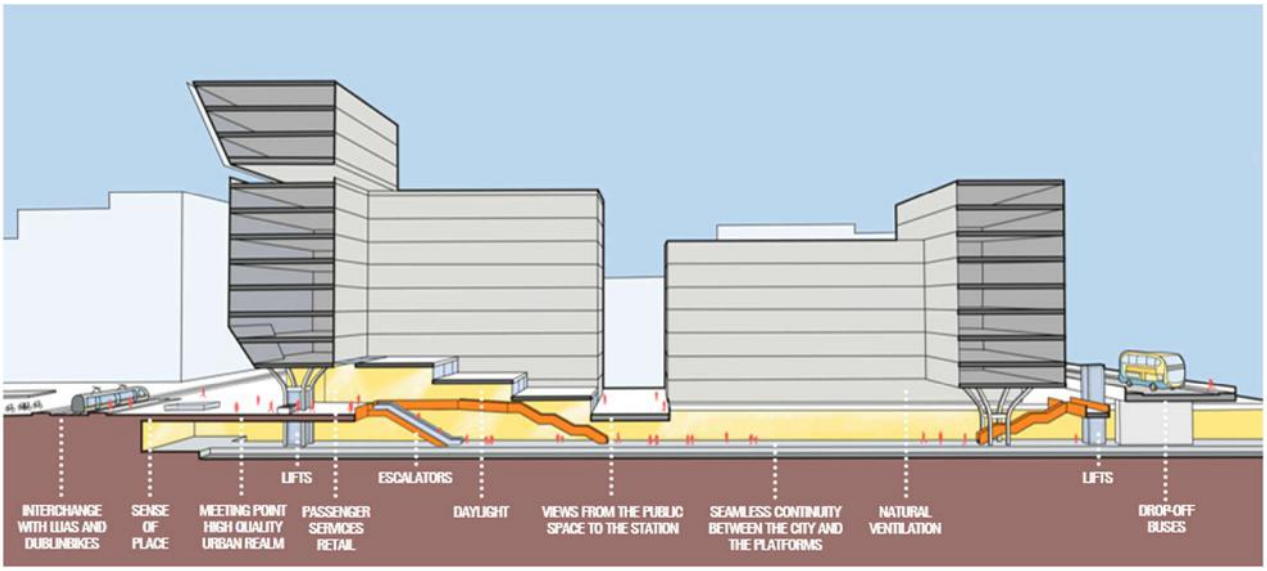


Figure 5.16. Graphic Illustrating primary elements of proposed Station Option B2

Figure 5.17 shows the functional layout of the proposed station at concourse level.

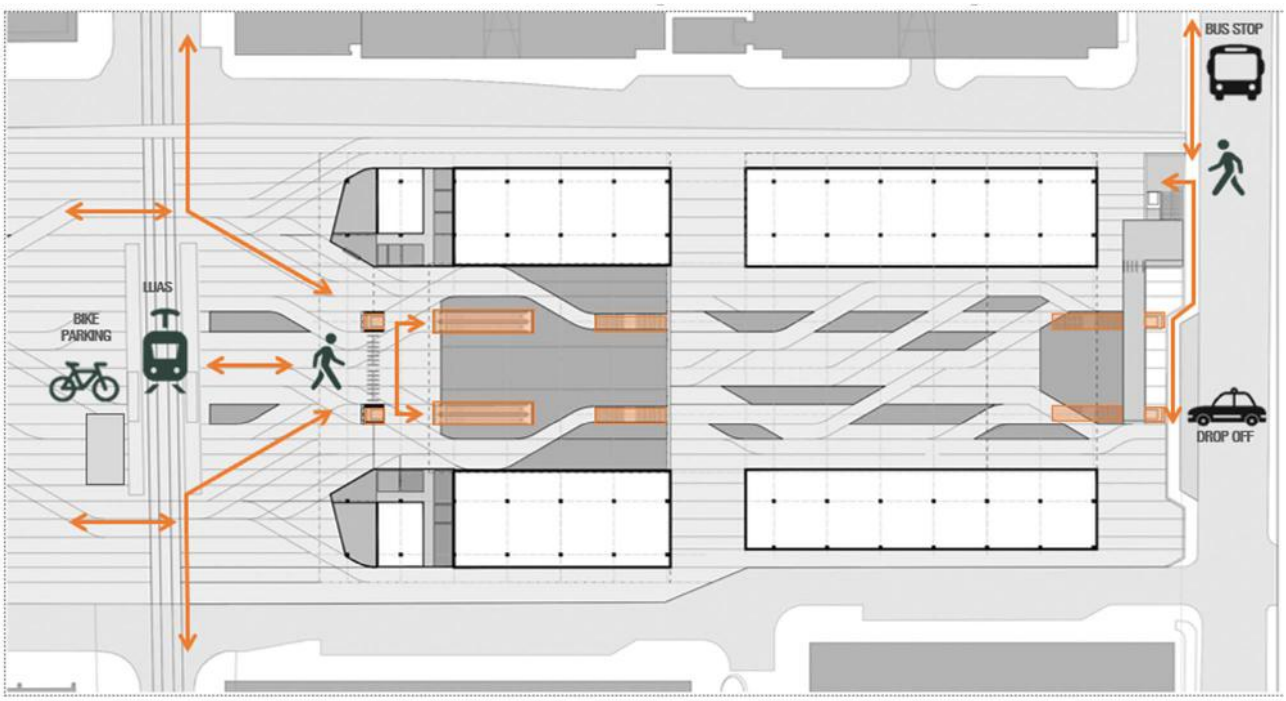


Figure 5.17 Functional layout of the proposed station Option B2 at concourse level

Figure 5.18 shows the proposed Station Plan at platform level. Four platforms are finally provided. The recommendation in the Concept Design, to achieve the desirable integration in terms of feasibility, complexity and cost, is to provide four tracks and two island platforms.

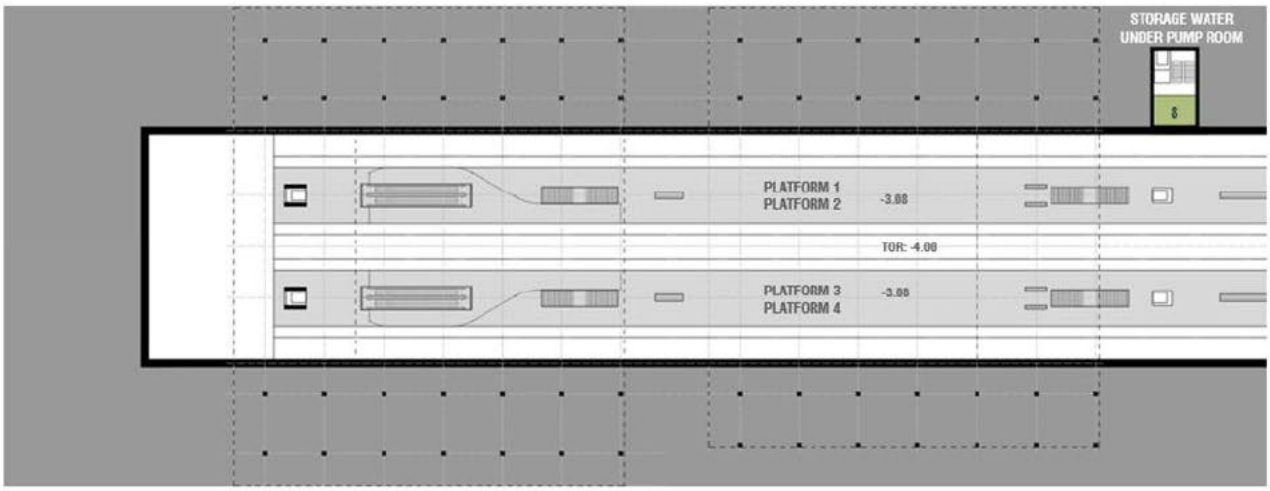
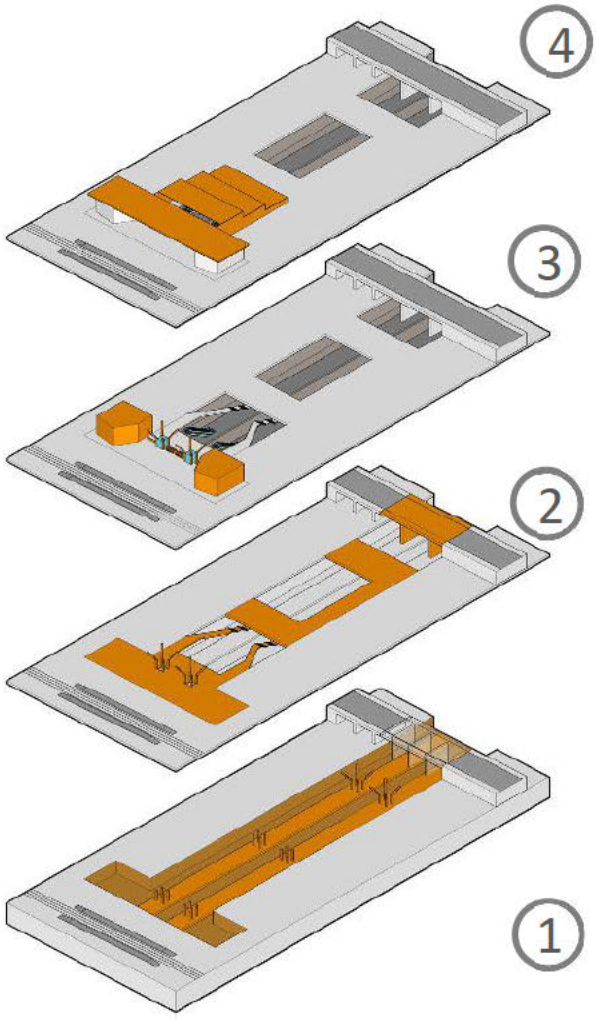


Figure 5.18 Functional layout of the proposed station Option B2 at concourse level

Proposed Construction staging is illustrated below for Option B2.



4 Construction of the slab that will support the part of the landmark building that is located over the station. Construction of structure and roof to cover the central area of the station.

3 Construction of the services areas located on both sides of the main access to the station. Provision of escalators and lifts.

2 Construction of Sheriff Street Upper new overbridge. Construction of three slabs:

- The slab for the station, with the staircases that give access to the platforms and the openings for the lifts.
- The slab for the intermediate street between blocks 2A and 2C
- The slab that will support the part of block 2A that is facing Sheriff Street Upper.

Construction of the structure that will support the part of the landmark building that is over the station.

1 Excavation of the station footprint. Construction of the platforms. Demolition of Sheriff Street Upper overbridge. Construction of the structure that will support the slabs of the next level.

Figure 5.19 provides characterisation of the proposed clearances gauges and construction cross-section envisaged as part of the proposed design for Option B2.

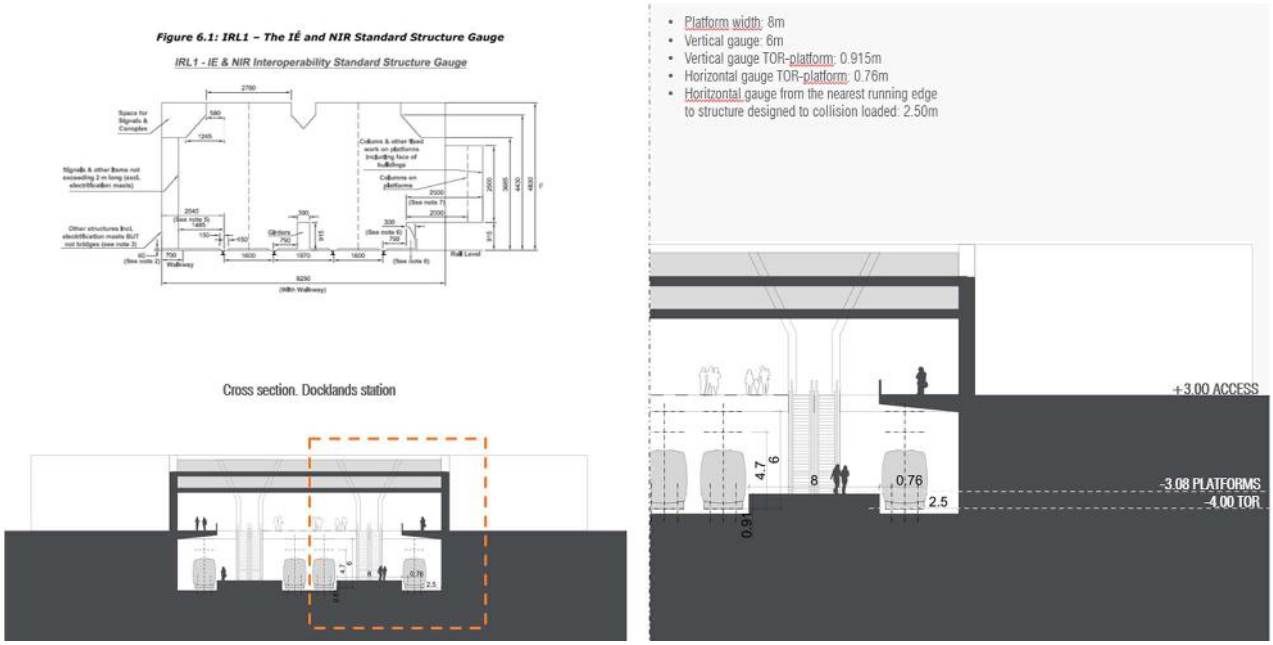


Figure 5.19 Functional layout of the proposed station Option B2 at concourse level

5.4 Multi-criteria Assessment No.2 MCA2

The following Station Options were advanced for Multi-criteria Assessment No.2.

Option	Location	Description
A3	At the end of Park Lane	New Station accessed off Sheriff Street with Pedestrian and Cycle link to East Wall.
B2	Mayor Street Lower	Platforms and tracks parallel to Park Lane

The detailed Multi-criteria Assessment is included in **Appendix 5** to this report.

The table below summarised the outcome of the assessment.

Criteria	Option A3	Option B2
Economy	Some comparative advantage over other options	Some comparative disadvantage over other options
Integration	Significant comparative disadvantage over other options	Significant comparative advantage over other options
Environment	Significant comparative advantage over other options	Significant comparative disadvantage over other options
Accessibility & Social Inclusion	Significant comparative disadvantage over other options	Significant comparative advantage over other options
Safety	Some comparative disadvantage over other options	Some comparative advantage over other options
Physical Activity	Comparable to other options	Comparable to other options
Preferred Option		Yes

5.5 Recommendation

We recommend that Option B2, the station comprising 4No platforms, constructed in cut between Sheriff Street bridge and Mayor Street Lower, aligned with the local streetscape with station podium fronting the Mayor Street Lower Luas Stop be advanced as the preferred option for capacity enhancement in the Docklands Area with the Existing Docklands retained for stabling purposes.

Appendix 1. Cost estimation

Basis of Costs

A preliminary Cost estimate was prepared to provide a comparative cost between the five different options to support the MCA Stage 1. After Concept Design, the cost estimates for Options A3 and B2 have been updated together with the design development to support the MCA Stage 2 process.

The basis of the estimate is based on the latest design drawing information and the information provided in the Control Budget Estimate for the non - building/architectural elements.

The pricing is based on quantities established from the building footprints in sq. m of the current available information and the rates have been determined using benchmark norms for similar projects. The following concepts have been taken into account:

- Heritage works have been identified and the rates included for use of specialist contractors and surveys etc;
- Allowances have been made for making good to demolished works and providing support structures as required;
- The platforms costs are based on the overall area of the platforms and a cost per m2 based on rates from similar Irish Rail projects and benchmarks;
- Platform canopies have been allowed to extend the full length of the platform and rates based on similar Irish rail projects;
- All rates have been escalated to a common base date of July 2020;
- The cost for the Per-way and SET elements are currently based on the cost which were developed to support the Control Budget Estimate;
- A provision of uplift has been allowed for phasing related costs where the works are carried out on a phased basis;
- An allowance has been made for professional fees, construction supervision, project management, design development, site investigation and contingency in accordance with the allowance provided in the CBE;
- A provision of 10% of the capital cost has been made for land acquisition associated with Option B2.

The Specific exclusions are:

- Provision for carparks and streetscape unless specifically noted.
- Cost associated with contaminated lands.
- Provision of lookouts
- VAT
- Structural provision for future Over Station Development is not included.

Options cost estimation(VAT excuded)

Building Works Docklands	OPTION A1				OPTION A2				OPTION A3			
Description	Unit	Qnty	Rate	Amount (€)	Unit	Qnty	Rate	Amount (€)	Unit	Qnty	Rate	Amount (€)
Docklands												
Site Clearance/ Demolitions												
Existing track to be removed	m	2.140	[redacted]	[redacted]	m	2.700	[redacted]	[redacted]	m	2.700	[redacted]	[redacted]
Railways - at grade												
New plain line track includes for sleepers, ballast and rails	m	3.100	[redacted]	[redacted]	m	5.050	[redacted]	[redacted]	m	5 050	[redacted]	[redacted]
Signaling systems - Signaling Equivalent Unit (SEU); assumed qty	nr	8	[redacted]	[redacted]	nr	8	[redacted]	[redacted]	nr	8	[redacted]	[redacted]
Structures												
Underbridge Sheriff Street Upper refurbishment	m2			0	m2	300	[redacted]	[redacted]	m2	300	[redacted]	[redacted]
New access ramp to he plot located north of sheriff street upper	item			0	item	1	[redacted]	[redacted]	item	1	[redacted]	[redacted]
Building												
Allowance for internal altera ion to existing station building	Item	1	[redacted]	[redacted]								
New station building/extension to existing building	m2	1.100	[redacted]	[redacted]	m2	1.500	[redacted]	[redacted]	m2	1.800	[redacted]	[redacted]
Pedestrian bridge	item	1	[redacted]	[redacted]	item	1	[redacted]	[redacted]	item	1	[redacted]	[redacted]
Allowance for site wide CCTV / Intruder alarms / access control	Item	1	[redacted]	[redacted]	Item	1	[redacted]	[redacted]	Item	1	[redacted]	[redacted]
Platforms												
no platforms to be installed as per the engineers drawings and specifications, including excavation for foundations, general excavation, filling, placing of concrete, formwork, reinforcement, manholes, gullies, pipework and ancillaries, ducting and paving, cables etc.	m2	3.200	[redacted]	[redacted]	m2	4.800	[redacted]	[redacted]	m2	4 800	[redacted]	[redacted]
Canopies to platforms	m2	3.200	[redacted]	[redacted]	m2	4.800	[redacted]	[redacted]	m2	4 800	[redacted]	[redacted]
Sub-Total				[redacted]				[redacted]				[redacted]0

Building Works Docklands	OPTION A1				OPTION A2				OPTION A3			
Description	Unit	Qnty	Rate	Amount (€)	Unit	Qnty	Rate	Amount (€)	Unit	Qnty	Rate	Amount (€)
Fittings, Furnishings and Equipment												
General fittings, furnishings and equipment	Sum	1	[redacted]	[redacted]	Sum	1	[redacted]	[redacted]	Sum	1	[redacted]	[redacted]
Signs and notices	Sum	1	[redacted]	[redacted]	Sum	1	[redacted]	[redacted]	Sum	1	[redacted]	[redacted]
External Works												
Bike Park	m2		[redacted]	[redacted]	m2	295	[redacted]	[redacted]	m2	295	[redacted]	[redacted]
Landscaping	m2		[redacted]	[redacted]	m2	3.500	[redacted]	[redacted]	m2	3.500	[redacted]	[redacted]
Pumping station	Item				Item				Item			
Electrification												
Allowance for substation	Item	1	[redacted]	[redacted]	Item	1	[redacted]	[redacted]	Item	1	[redacted]	[redacted]
Allowance for overhead electrification of track as far as the northern line	m	3.100	[redacted]	[redacted]	m	5.050	[redacted]	[redacted]	m	5 050	[redacted]	[redacted]
Utilities												
Allowance for electric power and plant	Item	1	[redacted]	[redacted]	Item	1	[redacted]	[redacted]	Item	1	[redacted]	[redacted]
Allowance for water supply and distribu ion	Item	1	[redacted]	[redacted]	Item	1	[redacted]	[redacted]	Item	1	[redacted]	[redacted]
Allowance for underground drainage system	Item	1	[redacted]	[redacted]	Item	1	[redacted]	[redacted]	Item	1	[redacted]	[redacted]
Allowance for tele-comms	Item	1	[redacted]	[redacted]	Item	1	[redacted]	[redacted]	Item	1	[redacted]	[redacted]
Additional Items												
Turmouts		8	[redacted]	[redacted]		3	[redacted]	[redacted]		3	[redacted]	[redacted]
Crossovers		3	[redacted]	[redacted]		6	[redacted]	[redacted]		6	[redacted]	[redacted]
Walkway = Signage to Luas - Allowance landscaping/ Canopy Sheriff St to Mayor St.		0	[redacted]	[redacted]		0	[redacted]	[redacted]		0	[redacted]	[redacted]
Sub-Total				[redacted]				[redacted]				[redacted]
Total Construction				[redacted]				[redacted]				[redacted]
Planning, Design& EIAR (6.35%)		6%	0	[redacted]		6%	0	[redacted]		6%	0	[redacted]
Investigation / Survey Costs		0,5%		[redacted]		0,5%		[redacted]		0,5%		[redacted]
Construction Supervision Costs		3%		[redacted]		3%		[redacted]		3%		[redacted]
Project Constn Mngt & E/C E/ Costs (8 5%)		8,5%		[redacted]		8,5%		[redacted]		8,5%		[redacted]
Design development		10%		[redacted]		10%		[redacted]		10%		[redacted]
Contingency		20%		[redacted]		20%		[redacted]		20%		[redacted]
Total Excluding VAT				[redacted]				[redacted]				[redacted]

Building Works Docklands	OPTION B1				OPTION B2			
Description	Unit	Qnty	Rate	Amount (€)	Unit	Qnty	Rate	Amount (€)
Docklands								
Site Clearance/ Demolitions								
Demolish existing buildings on site (1)	item	1		[redacted]	item	1		[redacted]
Demolish existing buildings on site (2)	item	1		[redacted]	item	1		[redacted]
Existing track to be removed	m	2.300	[redacted]	[redacted]	m	2.300	[redacted]	[redacted]
Railways - at grade								
New plain line track includes for sleepers, ballast and rails	m	4.000	[redacted]	[redacted]	m	4.740	[redacted]	[redacted]
Signaling systems - Signaling Equivalent Unit (SEU); assumed qty	nr	8	[redacted]	[redacted]	nr	8	[redacted]	[redacted]
Structures								
Reduce level for u/g platforms- exc and dispose	m3	25.900	[redacted]	[redacted]	m3	51.800	[redacted]	[redacted]
Founda ion slab	m3	11.333	[redacted]	[redacted]	m3	11.333	[redacted]	[redacted]
Retaining wall	m3	1.470	[redacted]	[redacted]	m3	1.470	[redacted]	[redacted]
Extra over for retaining wall	%	50%		[redacted]	%	50%		[redacted]
New E-W street structure + pavement	m3			0	m3	411	[redacted]	[redacted]
Demolition and rebuilding of overbridge required as platforms and track will need to run under Sheriff Street Upper	Item	Item		[redacted]	Item	Item		[redacted]
Cladding for sta ion. Block 2C	m2	2.207	[redacted]	[redacted]0	m2	2.207	[redacted]	[redacted]
Steel structure	kg	165.525	[redacted]	[redacted]	kg	165.525	[redacted]	[redacted]
Reduce level for u/g tracks and dispose	m3	15.600	[redacted]	[redacted]0	m3	31.200	[redacted]	[redacted]
Retaining wall 1	m2	840	[redacted]	[redacted]	m2	1.680	[redacted]	[redacted]
Extra over for wall 1	%	50%		[redacted]	%	50%		[redacted]
Retaining wall 2	m2	500	[redacted]	[redacted]	m2	1.000	[redacted]	[redacted]
Extra over for wall 2	%	50%		[redacted]	%	50%		[redacted]
Retaining wall 3	m2	800	[redacted]	[redacted]	m2	1.600	[redacted]	[redacted]
Extra over for wall 3	%	30%		[redacted]	%	30%		[redacted]
Retaining wall 4	m2	360	[redacted]	[redacted]	m2	720	[redacted]	[redacted]
Extra over for wall 4	%	15%		[redacted]	%	15%		[redacted]
Extra over / Concrete support slab/water containment	m3	3.900	[redacted]	[redacted]	m3	3.900	[redacted]	[redacted]
New access ramp to the plot located north of sheriff street upper	Item	1	[redacted]	[redacted]	Item	1	[redacted]	[redacted]
Building								
New station building	m2	2.200	[redacted]	[redacted]	m2	2.200	[redacted]	[redacted]
Secondary access and technical rooms	m2	400	[redacted]	[redacted]	m2	400	[redacted]	[redacted]
Pedestrian bridge	item	1	[redacted]	[redacted]	item	1	[redacted]	[redacted]
Allowance for site wide CCTV / Intruder alarms / access control	Item	1	[redacted]	[redacted]	Item	1	[redacted]	[redacted]

Building Works Docklands	OPTION B1				OPTION B2			
Description	Unit	Qnty	Rate	Amount (€)	Unit	Qnty	Rate	Amount (€)
Platforms								
2 no platforms to be installed as per the engineers drawings and specifications, including excavation for foundations, general excavation, filling, placing of concrete, formwork, reinforcement, manholes, gullies, pipework and ancillaries, ducting and paving, cables etc.	m2	3.380	[redacted]	[redacted]	m2	3.380	[redacted]	[redacted]
Canopies to platforms	m2	2.500	[redacted]	[redacted]	m2	2.500	[redacted]	[redacted]
Sub-Total				[redacted]				[redacted]
Fittings, Furnishings and Equipment								
General fittings, furnishings and equipment	Sum	1	[redacted]	[redacted]	Sum	1	[redacted]	[redacted]
Signs and notices	Sum	1	[redacted]	[redacted]	Sum	1	[redacted]	[redacted]
External Works								
Bike Park	m2	295	[redacted]	[redacted]	m2	295	[redacted]	[redacted]
Landscaping	m2	2.500	[redacted]	[redacted]	m2	2.500	[redacted]	[redacted]
Water disposal and pumping	Item	1	[redacted]	[redacted]	Item	1	[redacted]	[redacted]
Electrification								
Allowance for substation	Item	1	[redacted]	[redacted]	Item	1	[redacted]	[redacted]
Allowance for overhead electrification of track as far as the northern line	m	4.000	[redacted]	[redacted]	m	4.740	[redacted]	[redacted]
Utilities								
Allowance for electric power and plant	Item	1	[redacted]	[redacted]	Item	1	[redacted]	[redacted]
Allowance for water supply and distribution	Item	1	[redacted]	[redacted]	Item	1	[redacted]	[redacted]
Allowance for underground drainage system	Item	1	[redacted]	[redacted]	Item	1	[redacted]	[redacted]
Allowance for tele-comms	Item	1	[redacted]	[redacted]	Item	1	[redacted]	[redacted]
Additional Items								
Turmouts		3	[redacted]	[redacted]		5	[redacted]	[redacted]
Crossovers		7	[redacted]	[redacted]		5	[redacted]	[redacted]
Sub-Total				[redacted]				[redacted]
Sub - Total				[redacted]				[redacted]
Replacement of Demolished Maintenace Building	Item	1	[redacted]	[redacted]	Item	1	[redacted]	[redacted]
Relocation of existing SET cabins/buildings (Re-use of existing equipment	Item	1	[redacted]	[redacted]	Item	1	[redacted]	[redacted]
Total Construction				[redacted]				[redacted]
Planning, Design& EIAR (6.35%)		6%		[redacted]		6%		[redacted]
Investigation / Survey Costs		0,5%		[redacted]		0,5%		[redacted]
Construction Supervision Costs		3%		[redacted]		3%		[redacted]
Project Constn Mngt & IE/CIE/ Costs (8 5%)		8,5%		[redacted]		8,5%		[redacted]
Design development		10%		[redacted]		10%		[redacted]
Contingency		20%		[redacted]		20%		[redacted]
TOTAL CAPEX AND FEES				[redacted]				[redacted]
Land Acquistion Costs - 10% of capex and fees		10%		[redacted]		10%		[redacted]
TOTAL CAPEX,FEES AND LAND				[redacted]				[redacted]

Project Grant Application Form

Project Grant Application Form

To be used for seeking provision of funding allocation in respect of a new project

1. **Sponsoring Agency:** National Transport Authority

2. **Project Name:** Kishoge Station Opening

3. **NTA Project Type (select <u>one only</u>)**

Programme	Category	Tick One
Walking & Cycling	Cycling	
	Walking	
Sustainable Urban Transport (SUT)	Bus Network	
	Traffic Management	
	Safety Programme	
	Other	
Heavy Rail	Capital Project (non-technology)	✓
	Technology	
Light Rail	Capital Project (non-technology)	
	Technology	
Bus Programme	Bus Fleet	
	Bus Roadside Facilities (Shelters and Stops)	
	Other	
Accessibility	Heavy Rail	
	Bus	
	Other	

4. **Project Description and Full Description of Works Proposed**

The overall project objective is to undertake the works required to bring Kishoge Station into operation.

Kishoge station was designed and constructed as part of the Kildare Route Project (KRP) and was completed in 2009. Following its construction, it was decided to not open the station as major planned residential development in the catchment of the station had not progressed.

The glazed station building was covered with a protective cladding system to mitigate damage from theft and vandalism, and platform furniture & equipment was removed where practicable and put into storage.
In 2021, as part of the Kildare Route Project, a series of inspections, condition surveys and studies were undertaken and stakeholders were consulted on the requirements for bringing the station into service. The key findings are as follows:

- There is significant obsolescence of mechanical, electrical, telecoms and fire systems
- There are non-compliances with current Building regulations and EU Technical Specifications for Interoperability (TSI) for Persons with Reduced Mobility
- There is degradation of the building and platform fabric due to vandalism, theft, wear & tear, weather and animal/bird incursions.
- IE have changed their station staffing strategy and it is proposed to operate this station as unmanned. It was designed as a manned station. This has implications for access/egress control, security and revenue control.
- IE have learned lessons from the maintenance of similarly designed stations built around the same time as Kishoge and seek to apply them here.
- There is an opportunity to rationalise the space available within the station building to facilitate an unmanned operation and make passive provision for an alternative use of part of the building (e.g. as a staff hub)

The scope of this project is to cost effectively open Kishoge station to passenger service utilising the existing station building and platforms and based on the current track and platform operational assumptions.

The station building is constructed on a bridge/podium deck above four platforms. It is proposed to open the commuter platforms only (Platforms 1 and 2, located on an island between the Down Slow and Up Slow lines). Platforms 3 and 4 will have minor repairs carried out only e.g. cleaning, surface repairs, securing boundaries. A detailed list of the works required under each of these categories is provided in Appendix B.

The works are planned to be undertaken within property owned by CIE within the control of Iarnród Éireann.

The proposed works will not preclude any changes to the tracks or platforms which may be required to facilitate the DART+ programme.

A route map indicating the location of the station is provided in Appendix A.

5. Description of Project Benefits

- Provides vital commuter railway services for the proposed Clonburris SDZ and local area.

- Timely opening of the station will promote early adoption of commuter rail to new residents in the local area and a sustainable alternative to private car use.
- Projected increase in revenue from the proposed high-density residential development, with a projected population of over 21,000 people, within the catchment of the station.

6. Consistency with Plans

The project is consistent with Iarnród Éireann, National Transport Authority, South Dublin County Council and Government strategies in terms of it supporting passenger growth and the improvement of infrastructure.

It is consistent with the NTA's 'Transport Strategy for the Greater Dublin Area 2022 – 2042' and is a key requirement of the Clonburris Strategic Development Zone (SDZ) Planning Scheme as approved by An Bord Pleanála in May 2019.

Greater Dublin Area Transport Strategy 2022 - 2042 (NTA, Draft 2021)

The strategy identifies Clonburris SDZ as an area for future development and opening of Kishoge Station for passenger use to be undertaken as the demand for travel emerges.

Measure RAIL6 – New Rail Stations, states

> *"The NTA, in conjunction with Irish Rail, will develop new rail stations at Cabra, Glasnevin, Heuston West, Kylemore, Woodbrook, west of Sallins, west of Louisa Bridge and west of Maynooth.* ***Kishoge station*** *will also open in the short term as development of the Clonburris SDZ is realised. Other stations will be considered where development patterns support such provision." [emphasis added]*

Clonburris Strategic Development Zone – Planning Scheme

Clonburris SDZ is an area for development of approximately 281 hectares, located to the west of Dublin City Centre and the M50, between the areas of Lucan, Clondalkin and Liffey Valley. The development plans to construct up to 11,000 homes to support a population of 21,000 people.

On the 15th December 2015, the Government of Ireland designated the lands at Balgaddy-Clonburris as a Strategic Development Zone (SDZ), with South Dublin County Council specified as the Development Agency.

The development is spread over three "Character Areas". Kishoge Station forms the nucleus of one of the Character Areas due to the high level of transport accessibility within the SDZ.

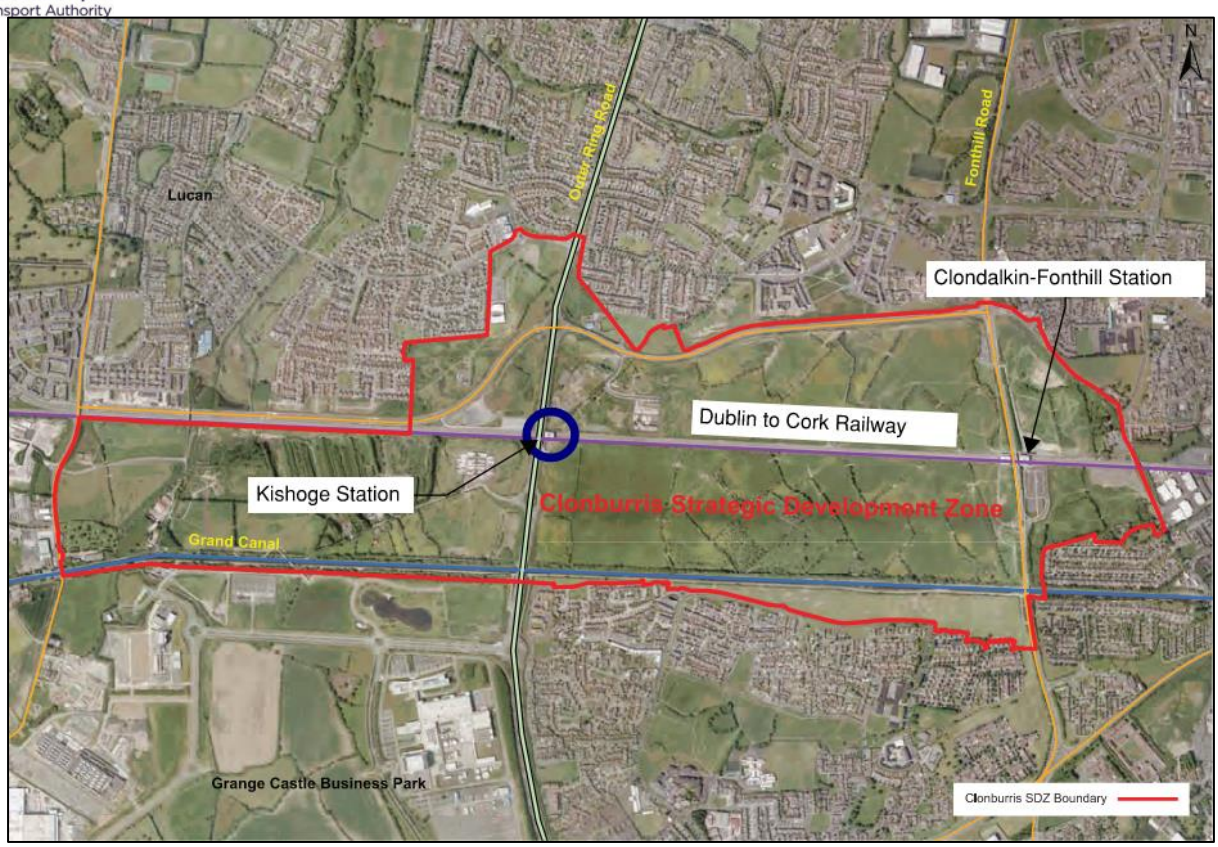


Figure 1 Clonburris SDZ Boundary

7. Proposed Programme for Design, Tender, Construction, Monitoring Stages

Phase	Start date	End date	€ Costs* incl. irrecoverable VAT and LA costs	% of other sources of co funding
1. Scope &Purpose				
2. Concept, Development and Option Selection	Jul 2021	Jan 2022	[redacted]	
3. Preliminary design	Jan 2022	Mar 2022		
4. Statutory Process	Feb 2022	Jun 2022		
5. Detailed design and Procurement	Mar 2022	Aug 2022		
6. Construction & Implementation	Sept 2022	Mar 2023		
7. Close Out & Review	Mar 2024	Mar 2024		

***please include total costs of the project also noting the percentage of any other sources of co-funding**

****Funded through Kildare Route Project IE/05/001**

8. Costs

The application should clearly identify key indicative cost information, as listed below:

a) Indicative Overall Total Cost of Project (all phases) €3,500,000 to €3,800,000
Please note that a range is acceptable
b) Funding Sought from NTA (all phases) €3,650,000
c) Funding Amount Sought for Current Year [redacted]
d) Cost of project to Date (if applicable) €0
e) NTA contribution to Date (if applicable) €0
f) Source of co-funding (if any) N/A
g) If the project is multi-annual, the Estimated Overall Total Cost of Project is broken down in the following table (if available):

Year	Actual or Estimated	NTA Funding €	Other Funding € (Indicate source)
2021	[redacted]		
2022			
2023			
2024			
Total Estimated			

All cost figures above should include irrecoverable VAT.

9. Statutory Approvals Status

The following statutory approvals will need to be sought:

- Planning consent for station via Section 5 or Planning Application;
- Fire Safety Certificate;
- Disability Access Certificate;
- Application to Place in Service (Commission for Railway Regulation).

10. Contact Persons

	Project Implementation	**Project Administration**
Name	David Vaughan	Oliver Tierney
Position / Role	Programme Manager	Project Manager
Sponsoring Agency	Iarnród Éireann	Iarnród Éireann
Phone	[redacted]	[redacted]
Email	david.vaughan@irishrail.ie	Ollie.tierney@irishrail.ie

11. Approvals

AGENCY APPROVAL:

Date: 07/02/2022

Signed: Sinéad Clair
Delivery Strategy Mgr
Capital Investments
Sponsoring Agency – Director or Equivalent

FOR NTA USE ONLY:

Decision: (select one and comment if required). Decision selection should be completed by the first approver to be endorsed by subsequent approvers through sign off.

☐ Approved in Full ☐ Approved in Part ☐ Rejected

Signed: **Date:**

NTA Senior Programme Manager *(for projects where the total cost of the project is </= €100,000)*
Add comments if required

Signed: **Date:**

NTA Section Head *(approver for projects where the total cost of the project is expected to exceed €100,000 and final NTA approver where the total cost of the project is between €100,000 - €500,000)*

Signed: Hugh Creegan **Date:** 24th February 2022

NTA Director of Transport Planning and Investment (*final approver for projects where the total cost of the project is greater than €500,000)*

NTA Budgetary Approval

Signed: Hannagh Golden **Date:** 02/03/2022

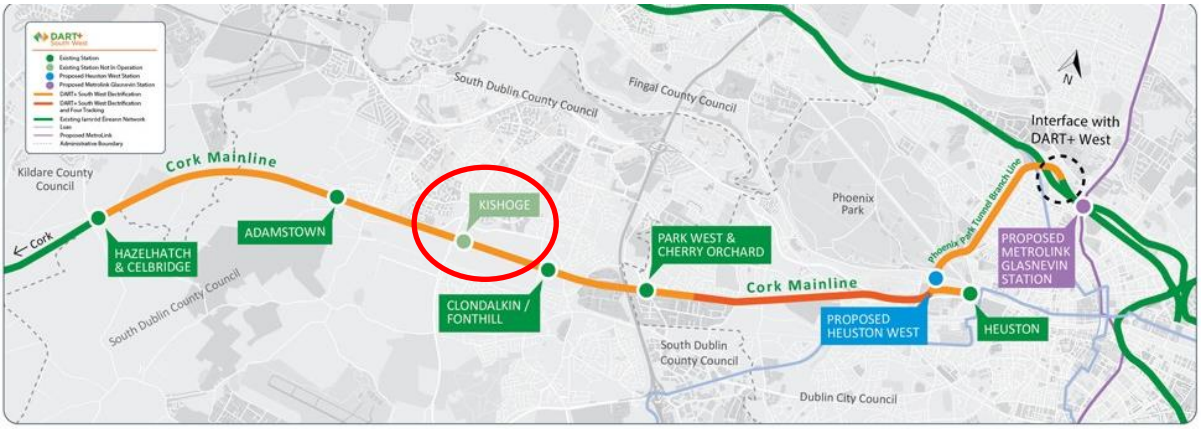
Capital Programme Office Representative

Capital Financial Analyst where the total cost of the project is < €500,000

Senior Capital Finance Manager where the total cost of the is > €500,000

(The Capital Programme Office Representative approval is solely in respect of confirming funding availability, for extracting information for current year and multi-year spend forecasts and for confirming that the required information for PRS set-up is included and accurate)

Appendix A



Project Location – DART+ South West Route Map

Appendix B – List of Proposed Works

Heading	Description	Reasons for undertaking the element of works (Y = Yes, reason is applicable)				
		(1) Obsolescence & Equipment Certification [RECI Cert etc.]	(2) Building Regulations & PRM TSi	(3) Vandalism, Theft, Wear & Tear, Weather, Animal ncursions	(4) Change in station staffing strategy	(5) Lessons Learned
Station Building Glazed Walls Replacement	Provision of a robust alternative to the existing glazed curtain wall system. The existing system has been vandalised and an alternative is required considering the station is intended to be unmanned. Currently a gap exists between the curtain walling and the roof and has allowed birds to access the building. The gap will be filled using louvred infill panels.			Y	Y	Y
Mechanical & Electrical Works Package	Renew or replace all mechanical, electrical, fire and telecommunication cables and equipment that has been damaged (due to weather, vandalism or theft). Replace obsolete equipment that is obsolete or cannot be commissioned due to certification issues. Upgrade of existing lifts back into service (2nr.).	Y		Y		
Floor Finishes	- Replacement of sections of internal and external tiles at concourse level where damaged - Replacement of section of tiles to ramps and tactile paving externally where damaged			Y		Y
Minor Works throughout Station	- Power wash entire structure, including all staircases and ramps and roofs - Specialist cleaning/ polishing of balustrades and handrails - Replacement of damaged nosing to external staircases - Replace existing matwells with enlarged matwells to reduce slip hazards - Clean and upgrade existing channel drain - New channel drain at lift to reduce the risk of water ingress to the lift shaft - Replacement of channel drains at ramps - Adjust security fencing for paid/ unpaid areas - Replacement of broken glazed panels to ticket office - Upgrade of existing shelters at track level			Y	Y	Y
Car Park, Paths & Paving	- Repair of existing damaged tarmacadam surface at track level			Y		

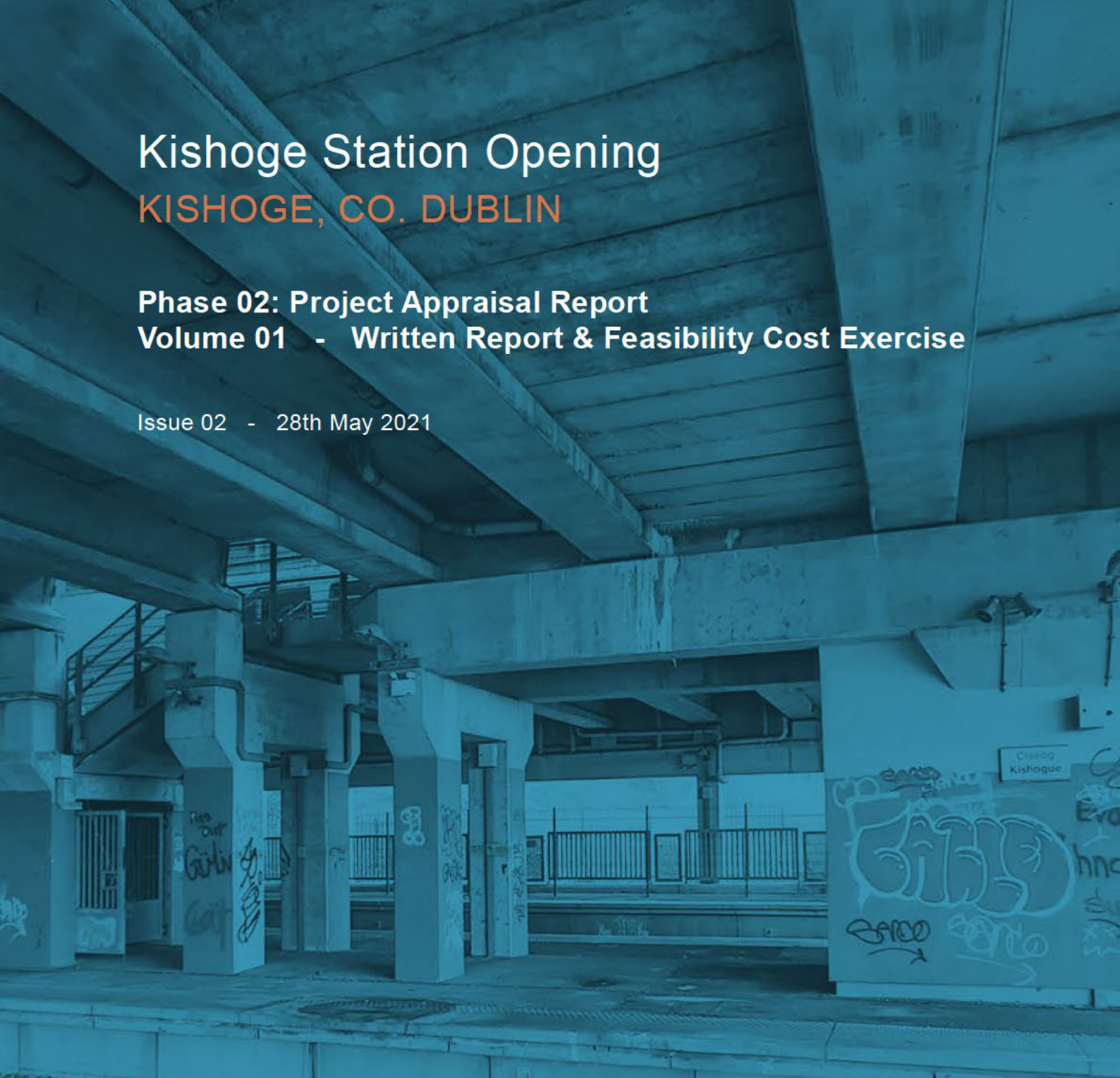
Heading	Description	Reasons for undertaking the element of works (Y = Yes, reason is applicable)				
		(1) Obsolescence & Equipment Certification [RECI Cert etc.]	(2) Building Regulations & PRM TSi	(3) Vandalism, Theft, Wear & Tear, Weather, Animal ncursions	(4) Change in station staffing strategy	(5) Lessons Learned
	- Clean channel drains to platforms 1 & 2 - Replacement of sections of kerb for level access in car park - Line marking to carpark at station entrance					
External Wall Completions	- Canopies to entrances to concourse, TER and electrical room door to prevent water ingress.					Y
Frames	- Treatment of steel framing to canopies - Treatment of cladding supports to external wall cladding system - Treatment of existing steelwork paint system as called up by the Structural Drawings			Y		Y
Building Fittings	- Allowance for signage upgrade package and miscellaneous fittings Allowance for platform furniture (seating, bins)	Y	Y	Y		
Site Enclosures	- Remove temporary protective steel cladding around building - Additional security fencing			Y		Y

Kishoge Station Opening

KISHOGE, CO. DUBLIN

Phase 02: Project Appraisal Report
Volume 01 - Written Report & Feasibility Cost Exercise

Issue 02 - 28th May 2021



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Iarnród Éireann Irish Rail

NTA Údarás Náisiúnta Iompair National Transport Authority

Rialtas na hÉireann Government of Ireland | Tionscadal Éireann Project Ireland 2040

KISHOGE STATION OPENING

Phase 02: Project Appraisal Report

Volume 1: Written Report & Feasibility Cost Exercise
(Volume 1 should be read in conjunction with the drawings and schedules provided in Volume 2)

Issue 2

28th May 2021

Cullen Payne Architects

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Fax (+353 1) 643 7301
e-mail info@cullenpayne.ie

Design Team

Architects & PM	**Cullen Payne Architects** 56-58 Drury Street Dublin 2
Mechanical and Electrical Engineers	**Cundall** 7 St Stephen's Green, Dublin
Civil & Structural Engineers	**Cundall** 7 St Stephen's Green, Dublin
Fire & Accessibility	**Cundall** 7 St Stephen's Green, Dublin
PSDP	**Cundall** 7 St Stephen's Green, Dublin
Quantity Surveyors	**ORHT** 13 Clyde Rd, Ballsbridge, Dublin 4

Volume 01 Contents

1 Introduction

1 Introduction

The purpose of this Phase 02 Appraisal Report is to address the end user requirements as determined and documented in the Kishoge Station Opening Client Requirement Specification (CRS).

The Phase 02 Appraisal Report is structured as follows:

Volume 1: Written Report & Feasibility Cost Exercise
Volume 2: Schedules and Drawings

The CRS document, a copy of which is provided here at Appendix 2, provides a foundation for the Design Team to develop the project scope of work in respect of the following:

- To establish the extent of building fabric cleaning, refurbishment, and M&E repair and replacements required to open the station.
- Scope to establish what works are required due to the change in operational requirements where the station is planned to open as an unmanned station.
- Scope to establish what works are required due to lessons learnt at similar station buildings
- Scope to establish what works and applications are required to ensure the station is compliant with statutory approvals.
- Platform 1 & 2 Accessibility Issues
- Platform 4 Access & Security Issues
- Elevational Treatment options to treat the facades to address issues of vandalism and access by birds.

The National Transport Authority Project Approval Guidelines list the following key deliverables for Band 2 projects in the €0.5 million to €10 million price band:

a. Project Feasibility Report including Feasibility Working Cost Estimate
b. Option Selection Report
c. Indicative Procurement Strategy
d. Phase 2 Project appraisal report
e. Gateway 2 report

Items ‘a’ – ‘d’ are provided in this document, over Volumes 1 and 2 . Item ‘e’ can be completed at the phase 2 approval point.

Volume 1: Written Report & Feasibility Cost Exercise

The written report will provide the high level commentary in respect of option identification and appraisal of Accessibility issues associated with Platforms 1 & 2, Access arrangements to Platform 4 and Elevational Treatments. Commentary on Accessibility compliance, Statutory Consents and Timeline are provided in subsequent chapters and should be read in conjunction with the set of drawings provided in Volume 2.

The Order of Magnitude Cost, as prepared by the project Quantity Surveyors is included at Appendix 1, and, is based on the core ‘base build’ scope of works identified in Volume 2 Further order of magnitude costs are identified ‘below the line’ for the various cladding and accessibility options identified in the overall Appraisal Report.

Volume 1 should be read in conjunction with the drawings and schedules provided in Volume 2.

Volume 2: Schedules and Drawings

Volume 2 of this Appraisal Report, an A3 format document, will record survey activity and the scoping of "Base Build" remedial works.

A set of Architectural Drawings, prepared by Cullen Payne Architects is included at Volume 2.

The Design Team reports included at Section 2 of Volume 2 are structured to reflect the CRS numbering and descriptions of the requirements. In these individual Design Team reports the CRS item description is recorded, with an accompanying Design Team comment on the condition of the item. The Design Team recommendations are then noted in the "Base Build" or recommended scope column.

2 Executive Summary

An overview, on one page.

2 Executive Summary

This report seeks to answer the question: “what is required to open Kishoge Station?”

The Design Team have outlined and assessed options to address the following specific issues raised in the Client Requirement Specification (CRS):

- To establish the extent of building fabric cleaning, refurbishment, and M&E repair and replacements required to open the station.
- Scope to establish what works are required due to the change in operational requirements where the station is planned to open as an unmanned station.
- Scope to establish what works are required due to lessons learnt at similar station buildings
- Scope to establish what works and applications are required to ensure the station is compliant with statutory approvals.
- Platform 1 & 2 Accessibility Issues
- Platform 4 Access & Security Issues
- Elevational Treatment options to treat the facades to address issues of vandalism and access by birds.

To scope the works required in a preliminary fashion, we have developed a “Base Build” Scope. In addition to the basic building fabric and M&E repair works required, the “Base Build” scope is also made up of the following assessed, and identified preferred options:

- Platform 1 & 2 Accessibility Option 02
- Platform 4 Option 01
- Elevational Treatment Option 03

The Design Team survey and assessment activities are recorded in the Design Team reports included at Section 2 of Volume 2. They are structured to reflect the Client Requirement Specification numbering and descriptions of the requirements. The Design Team recommendations are then noted in the “Base Build” or recommended scope column.

Preferred Options, recommended by the Design Team are included here in Volume 1, and are reflected in the Order of Magnitude Costing Exercise. All further options considered are illustrated in Volume 2.

Currently it would seem likely that the proposed scope of works would constitute a material change and as such would require an application for Planning Permission. As of yet, this position cannot be conclusive and requires assessment when the preferred options are selected and the project scope is more clearly defined in Phase 2.

The current scope of proposed works would require an amendment to the existing Fire Safety Certificate. An application for a Disability Access Certificate (DAC) will be required for the proposed scope of works. The Building Control (Amendment) Regulations 2014 (S.I.9 of 2014) will apply to the new works.

The Order of Magnitude Cost Exercise is a preliminary and outline exercise. It’s level of detail is reflective of the preliminary nature of the scope of works and it’s purpose is to allow the preferred options be identified and carried forward. ORHT report a figure of [redacted] exclusive of VAT), for construction costs only, against the scope currently outline as part of the “Base Build” works. The Order of Magnitude Cost Exercise is included at Appendix 1.

3 Report Definition

The scope and purpose of this Appraisal Report

3 Report Definition

Kishoge Station has stood vacant since substantial completion of the main building works project in 2009.

The station was not opened for passengers use, or train service. It was secured from public access and monitored with a limited maintenance plan implemented. In the time since its completion, the station building and facilities has had limited maintenance and suffered from vandalism damage.

A programme of remedial works are required to enable the station to be recommissioned.

a. Report Objective

The primary objective of the project is to scope the remedial works required to open the station for operational railway services.

b. Scope of Report

- Interpret the Client requirement as laid out in the Kishoge Station Opening – Client Requirement Specification.
- Report on surveys undertaken of the existing station building fabric, mechanical and electrical equipment.
- Recommend and scope remedial works.
- Assess and advise on Platform 1 & 2 accessibility issues.
- To review access arrangements to Platform 4.
- To propose options for treating the elevations to address issues of vandalism and access by birds.
- Review operational layout.
- Review and advise on Statutory consents.
- Prepare Order of Magnitude Cost Exercise for undertaking remedial work.

c. Project Exclusions

The project scope does make provision for any future works required to facilitate Dart +.

The IÉ Kishoge Project Team have consulted with the DART+ Project Team. The main operational impact of the DART+ project is a change in operational layout where Platforms 2 and 3 become the Slow platforms instead of the current layout where Platforms 1 and 2 are the Slow platforms. This lies beyond the scope of this project. Access to Platform 3 is considered further in sections 3 and 6.

4 Operational Requirements

4 Operational Requirements

The station was originally intended to be a manned station. The current proposal is that the station will be unmanned once opened. Requirements associated with this change other operational requirements are listed below.

General

- Island platforms 1 and 2 are to be used for services between Portlaoise-Heuston and Hazelhatch-Grand Canal Dock.
- The station furniture (bins, shelters & seats) to be installed on all four platforms.
- Platforms 3 and 4 are required where mainline services become degraded and need for de-train passengers from a crippled train or emergency services access to a train.

Station Staffing

- The station is to open on an unmanned basis.
- Station facilities are to be provided for a security guard. This will include necessary welfare facilities and CCTV monitors will have to be installed to enable monitoring of the CCTV within the station.

Revenue control

- Ticket validation poles may be more appropriate instead of ticket gates if the station is unmanned long term. Drawings 2101_SK_150 and 2101_SK_151 provided in Volume 02 illustrate this arrangement.

Operational – Mobility impaired access

- The only access/egress for mobility impaired passengers to and from platforms 1 and 2 is via a lift. A risk of a mobility impaired passenger being unable to use the lift due to damage or fault has been identified. This report assesses this issue at section 5 below.

Operational – Access to Platform 4 from Car Park

- At present, passengers from the car park can use a lift or stairs to access the concourse level or access platform 4 directly. Trespass on the railway at this location is considered to be high risk.
- To reduce the risk of trespassers entering from the car park, access and security fencing to platform 4 is examined in Drawings 2101_SK_140, 2101_SK_141, 2101_SK_145 and 2101_SK_146 provided in Volume 02.

5 Outline of Proposals

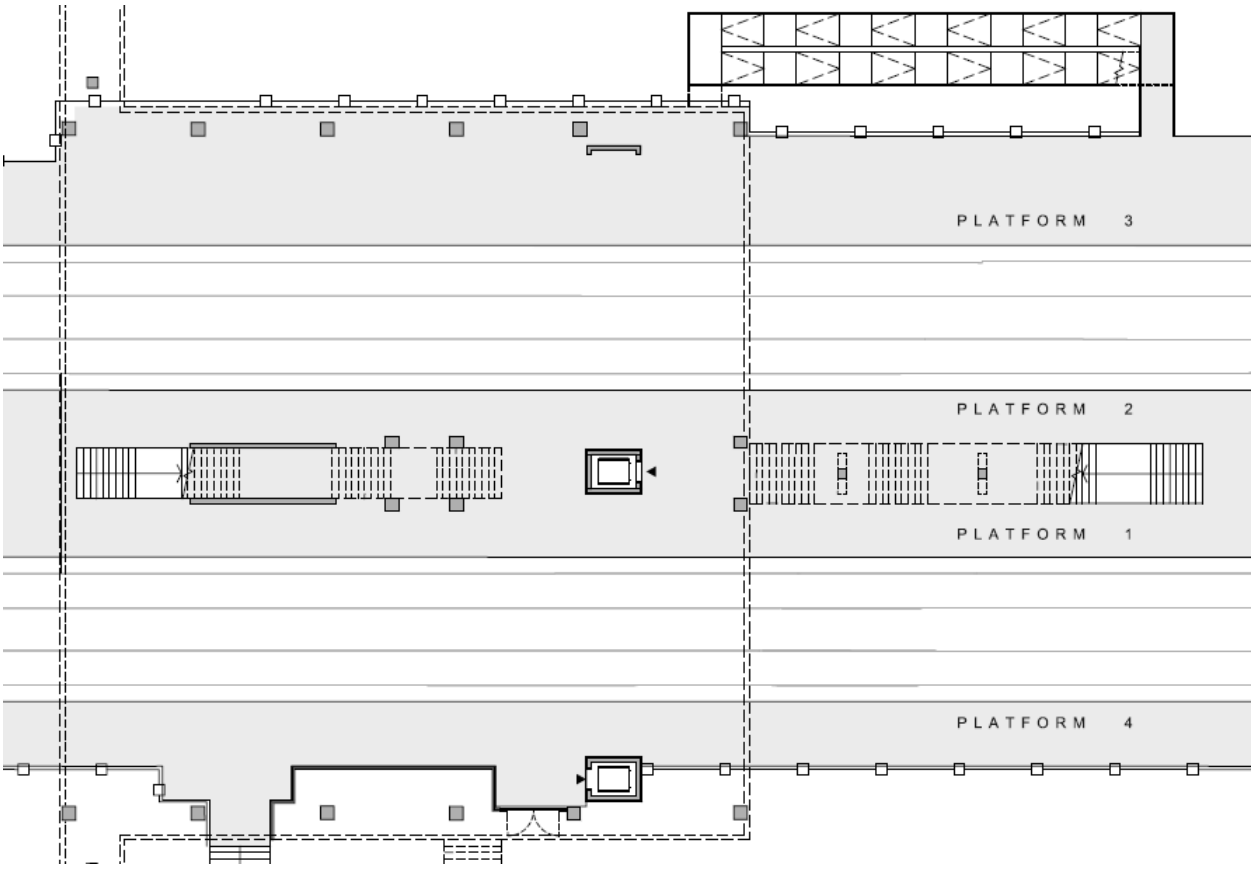
An explanation of the works scope established, and the options study conclusions. This section should be read in conjunction with the drawings provided in Volume 2.

5 Outline of Proposals

An explanation of the works scope established, and the options study conclusions. This section should be read in conjunction with the drawings and schedules provided in Volume 2.

The constituent elements of the overall work proposals are discussed individually as follows:

A. To establish the extent of building fabric cleaning and refurbishment, and M&E repair and replacements required to open the station.
B. To review Accessibility issues associated with Platforms 1 & 2.
C. To review access arrangements to Platform 4.
D. To propose options for treating the elevations to address issues of vandalism and access by birds.



Survey plan view of Platform level, to illustrate Platform numbering.

A. To establish the extent of building fabric cleaning and refurbishment, and M&E repair and replacements required to open the station.

This Appraisal Report records survey activity and the scoping of "Base Build" remedial works in Volume 2. The 'Base Build' is the term used to describe the extent of building fabric cleaning, repair, and replacements required to open the station.

The Design Team reports included at Section 2 of Volume 2 are structured to reflect the Client Requirement Specification numbering and descriptions of the requirements. In these individual Design Team reports the CRS item description is recorded, with an accompanying Design Team comment on the condition of the item. The Design Team recommendations are then noted in the "Base Build" or recommended scope column.

Design Team site survey activities are noted as follows;

- 04/03/2021 Full Design Team - Initial Visual Survey/Inspection
- 04/03/2021 M&E - Initial Visual Survey/Inspection
- 04/03/2021 Structural & Civil - Initial Visual Survey/Inspection
- 23/03/2021 M&E - Visual Survey/Inspection
- 23/03/2021 Full Design Team - Visual Survey/Inspection
- 23/03/2021 Lifts - Initial Visual Survey/Inspection
- 23/03/2021 Structural & Civil - Visual Survey/Inspection including Lifting and inspection of Manholes
- 23/03/2021 Cundall Fire Consultant - Visual Survey/Inspection
- 31/03/2021 Lift Survey with Cundall and Lift Contractor Ascension Lifts
- 31/03/2021 Structural & Civil Visual Survey/Inspection

In addition to the basic building fabric cleaning and refurbishment, and M&E repair and replacements required to open the station, the "Base Build" scope is also made up of the following elements:

- Platform 1 & 2 Accessibility Option 02
- Platform 4 Option 01
- Elevational Treatment Option 03

These elements represent the Design Team recommendations in respect of each option study we have been requested to explore.

However final definition of the project scope is contingent on the decisions now required to determine the Client preference in each instance.

B. Accessibility issues associated with Platforms 1 & 2.

At Kishoge, Platform 1&2 are serviced by 1no. passenger lift from concourse level. In the event of a lift breakdown, Platform 1&2 would be rendered inaccessible for a mobility impaired passenger.

In dialogue with the Design Team, and informed by feedback provided by IÉ New Works at fortnightly Progress Meetings, Cullen Payne Architects identified 5 no. options for addressing accessibility issues at the Platforms 1 & 2, as follows:

1) Provision of Stairlift to platform 1 & 2
2) Provision of additional lift shaft to serve Platform 1 & 2 within concourse building. Stairs reorientated to accommodate.
3) Provision of New External Lift to East of Concourse serving Platforms 1 & 2.
4) Provision of New External Lift to West of Concourse serving Platforms 1 & 2.
5) Provision of 2 no. new lifts and linking gantry to East end of Platform 1 & 2 and car park respectively.

CPA outlined a scoring matrix used to assess options which scored proposals across 5 no. Criteria:

- User Experience
- Buildability
- Cost
- Operational Experience
- Risk

These criteria were initially considered from the Design Team perspective and were then developed on foot of feedback received at the Stakeholder Review Meeting 15.04.2021.

A table is provided below and at Volume 2 recording the assessment of the 5 no. design options. This process ranked the options from 1 to 5 against each of the listed criteria (1 being the best performing option in each category). The process and its results are captured in the table below which which identifies Option 2 as the Design Team's recommended solution. The lowest numerical score in each case represents the best performing option.

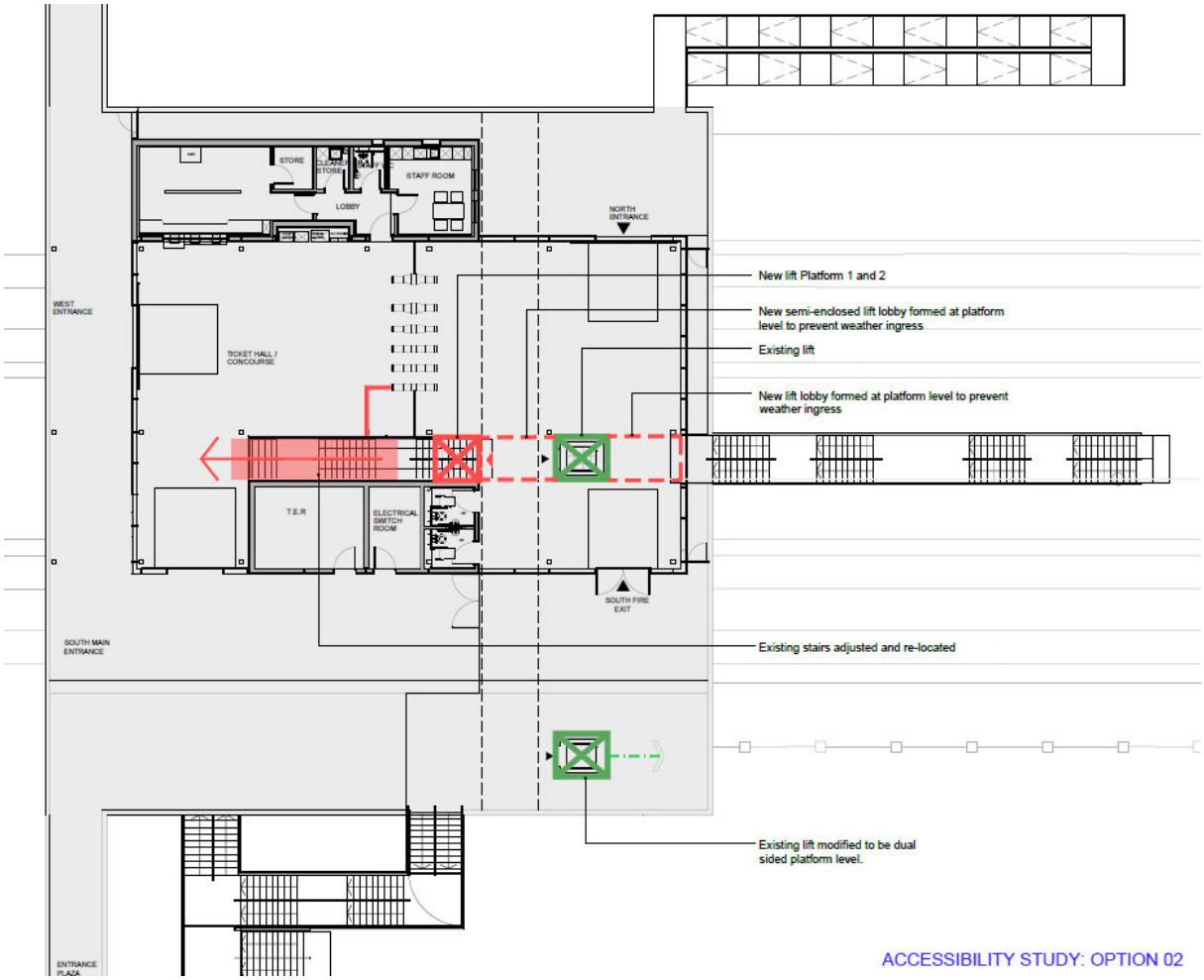
Operational solutions to Platform 1 & 2 accessibility issues, such as utilising functional lifts at neighbouring stations are not recorded or assessed here. IÉ Stakeholders did not support operational solutions to Platform 1 & 2 Accessibility issue.

Option	Description	User Experience	Buildability	Cost	Operational Experience	Risk	Total	Ranked
1	Stairlift.	5	1	1	4	2	13	**2**
2	New lift in existing Stairwell.	1	2	2	1	5	11	**1**
3	New lift to East of concourse.	2	5	3	2	5	17	**4**
4	New lift to West of concourse.	3	5	4	3	4	19	**3**
5	New Gantry & lifts.	5	3	5	5	3	21	**5**

Table 1. Platform 1&2 Accessibility Options, ranked.

Accessibility Option 2: The provision of additional lift shaft to serve Platform 1 & 2 within the concourse building. Existing stairs are to be adjusted to accommodate. This option also provides for the Lift loading area to be sheltered with a lobby enclosure at platform level.

Accessibility Option 2 is illustrated below and on drawing 2101_SK_101 provided at Volume 2.



In identifying design solutions to address the accessibility issues with platform 1&2, it became clear that accommodating an additional lift within the envelope of the concourse building is a clear advantage. This is preferred not only from a user experience perspective, but also from a maintenance perspective as an internal condition will protect the lift mechanism from weather and moisture ingress.

The transfer structure supporting the concourse building left very few options to locate an additional lift shaft within the building envelope . Accessibility Option 2 offers the advantage of being the only option with the potential to use the existing structural opening of the main stairs from Platform 1&2 to concourse level. Utilising this structural void contributes to the buildability of this option, as does its direct proximity to the main MEP services duct.

Constructing a new lift shaft in this location requires the removal of the existing stairs, and it's reconstruction in an adjusted location.

Acknowledging the fact that Kishoge is a particularly challenging environment in respect of threat of vandalism, once constructed the lift loading area is to be enclosed in a lobby construction at platform level providing further protection from the elements and maintaining a level of control against vandalism.

At the Stakeholder meeting 15.04.2021, all IÉ stakeholders supported the concept that an additional lift is required to address Platform 1 & 2 accessibility issue, and that any additional lift would be ideally be located in a position internal to the building envelope, noting the greater protection this arrangement provides.

Minutes of this Stakeholder meeting are provided at Appendix 3 of Volume 1

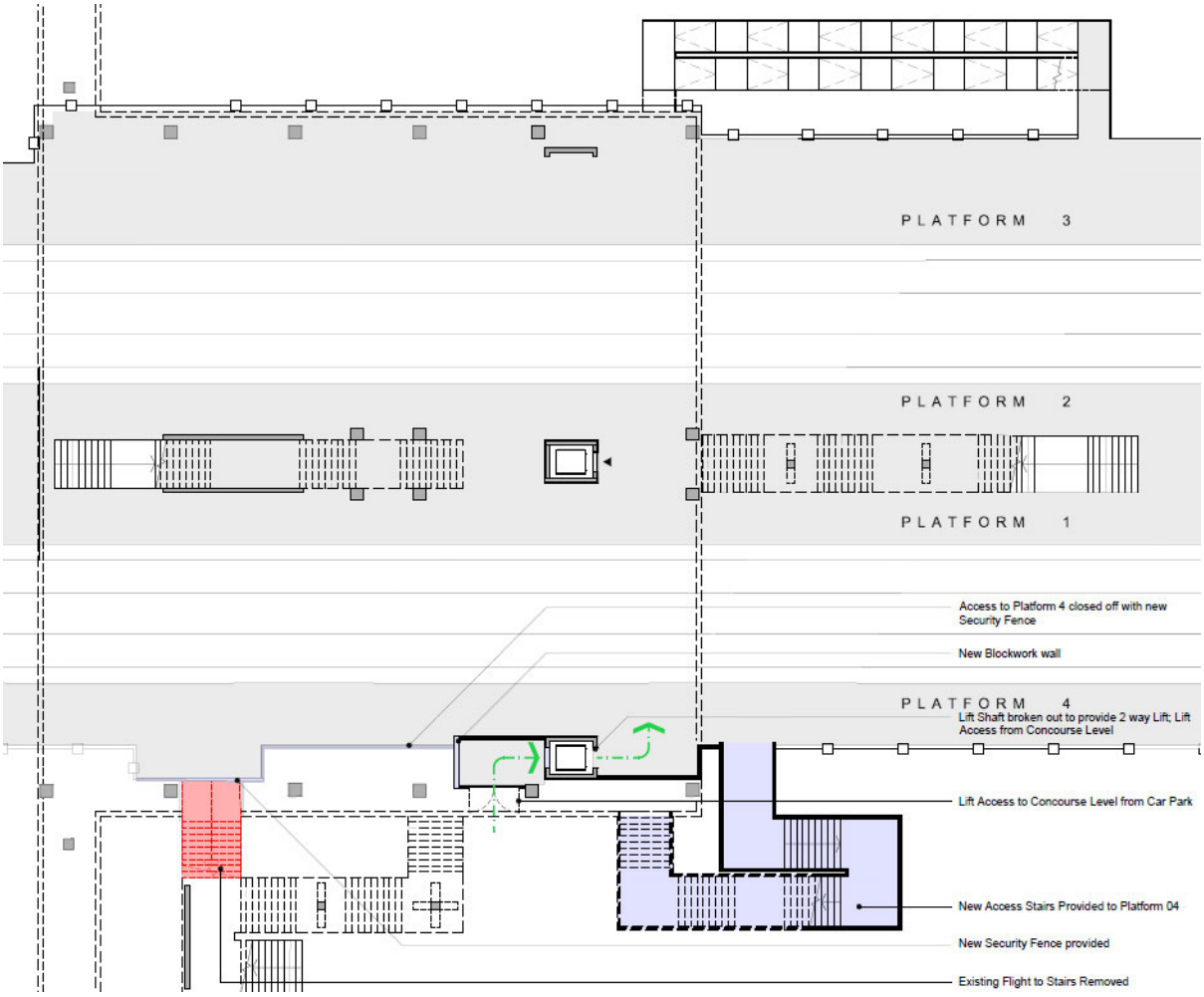
C. To review access arrangements to Platform 4.

A number of deficiencies exist with the current stairs configuration, fencing line and lift provision to Platform 4.

The fencing line should be constructed to prevent clear access to Platform 4. The bottom flight of stairs, highlighted in red below may also be removed as they are redundant and create confused circulation. A new stairs to be provided as shown on architectural drawings no. 2101_SK_140 and 2101_SK_141. The lift can potentially be adapted to mimic the arrangement at Fonthill, providing access to Platform 4 with a dual loading lift car.

An alternative option was also developed, providing controlled access to Platform 4 with the use of a sequence of demand controlled gates. Drawing 2101_SK_145 and 2101_SK_146 found at Volume 2 refer.

Platform 4 Option 1 is illustrated below and on drawing 2101_SK_140 and 2101_SK_141 provided at Volume 2.



D. To propose options for treating the elevations to address issues of vandalism and access by birds.

A continuous air gap above the curtain walling façade system to the underside of the roof soffit has created a weak spot in the existing structure for weathering and ingress of bird, insects etc. As a result, the Concourse building suffers from ongoing bird fouling.

Cullen Payne Architects have developed 3 no. options of varying degrees of intervention to address the gap above the curtain walling, and to address the vulnerability of the existing glazing to vandalism. These options are illustrated in drawing no. 2101_SK_700, 2101_SK_701 and 2101_SK_702 supplied at Volume 2.

It is important to note that the original structure and its fire cert anticipate an airflow above the curtain walling. Any proposals to weather the gap above curtain walling is required to maintain an airflow. Failure to maintain an adequate airflow will necessitate mechanical system redesign, new smoke extract, and new plant.

- **Elevational Treatment Option 01** (ref drawing no. 2101_SK_700 and 2101_SK_200)

Lightweight modular panelised cladding panels (combination of perforated, mesh, and solid panels) face fixed to existing curtain walling system in "brick bond" patterns, to provide combination of robustness, passive security through transparency, and visual interest.

- **Elevational Treatment Option 02** (ref drawing no. 2101_SK_701 and 2101_SK_200)

Existing Curtain walling frames retained, existing glazing removed to height of first mullion just above head height. The existing glazing is then to be replaced with Aluminium infill panels with etched external finish fixed into the existing curtain walling system in place of glass at low level. Perforated steel cladding system provided at high level to protect high level glazing retained, and to infill gap between curtain walling and soffit.

Options 01 and 02 present the opportunity for most visual interest, retain the use of natural light, and as such hold potential for an intervention with some aesthetic and architectural merit. Elevation studies of same are provided in drawing 2101_SK_200.

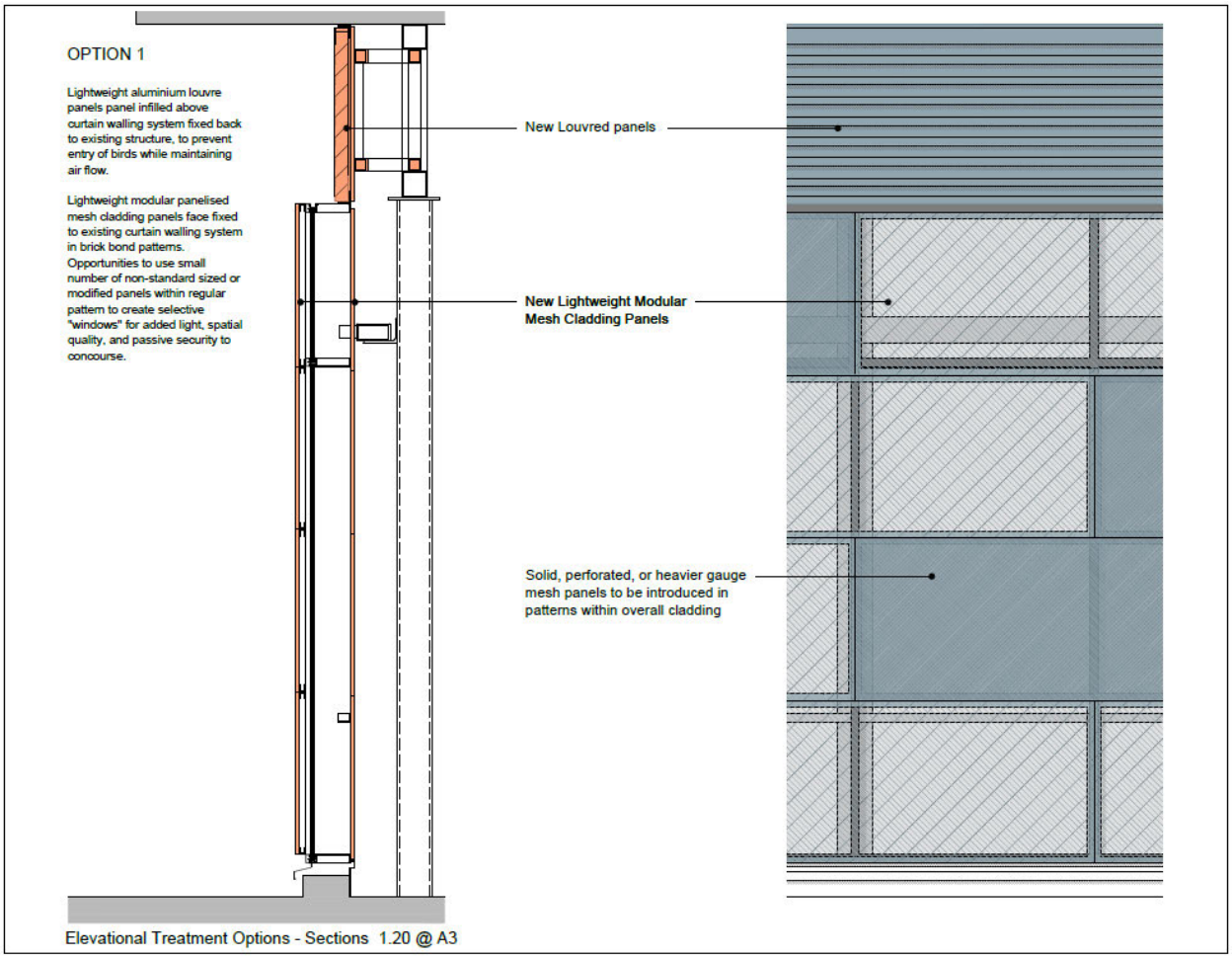
However at the Stakeholder meeting on 15.04.2021, IÉ stakeholders reiterated the challenging context of Kishoge, the ongoing vandalism issues and the risks associated with providing any areas of unprotected glazing. With this feedback in mind, a further option, more robust option, listed below, has been developed for consideration.

- **Elevational Treatment Option 03** (ref drawing no. 2101_SK_150 and 2101_SK_702)

Option 03 is the option reflected in the “Base Build” scope of works, and in the Order of Magnitude Cost Report.

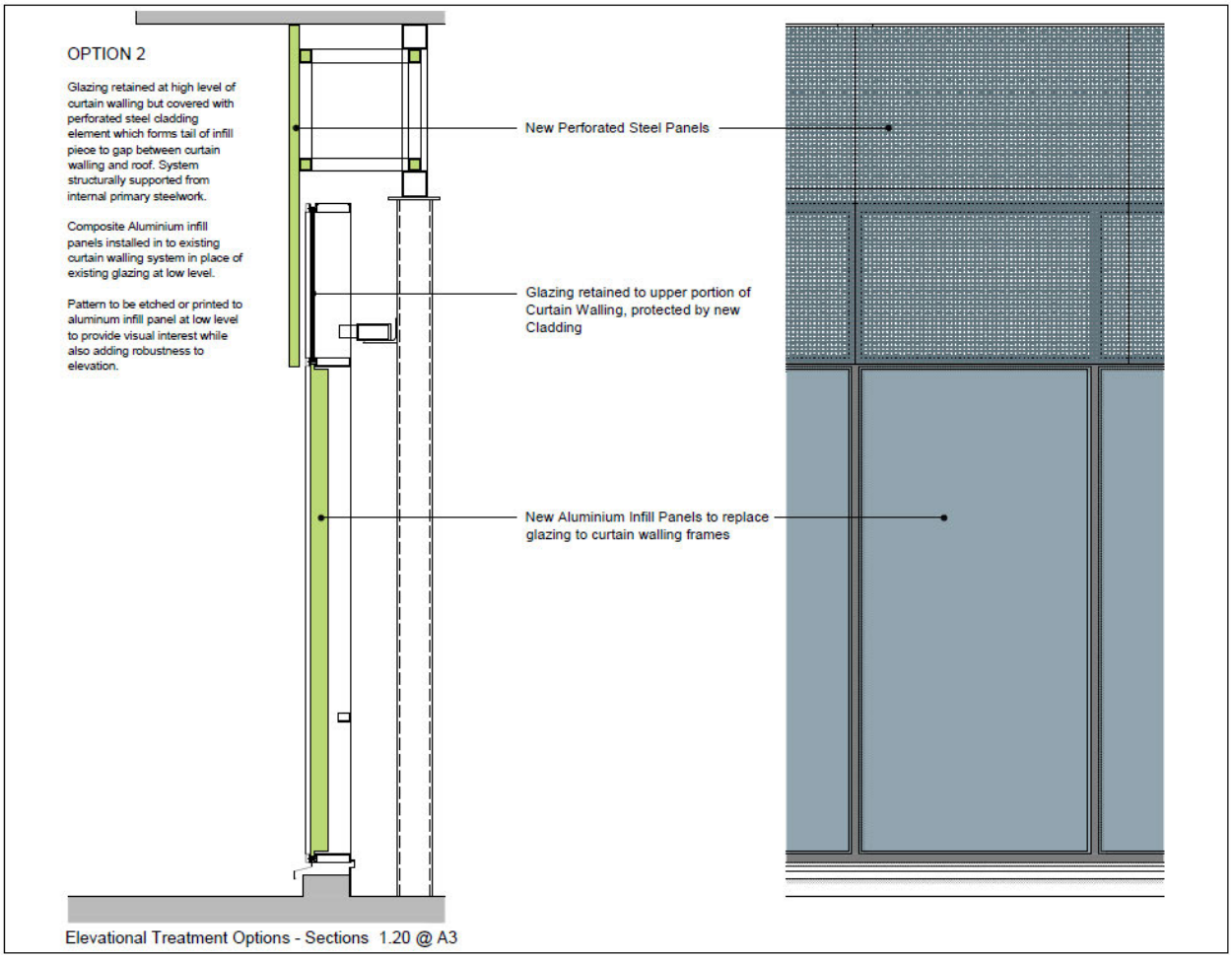
In this option, the existing Curtain walling removed and replaced with lightweight steel framed partition system, constructed to same height as existing Curtain Walling. Replacement external walls to be clad externally with Large Format Stone Tiles to match existing Staff Block. The gap between SFS walls and soffit to be infilled with Modular Louvre panels to maintain airflow in accordance with existing Fire Safety Strategy.

This represents the most extreme intervention, deprives the concourse level of a significant source of natural light, but would offer the more robust long term solution.



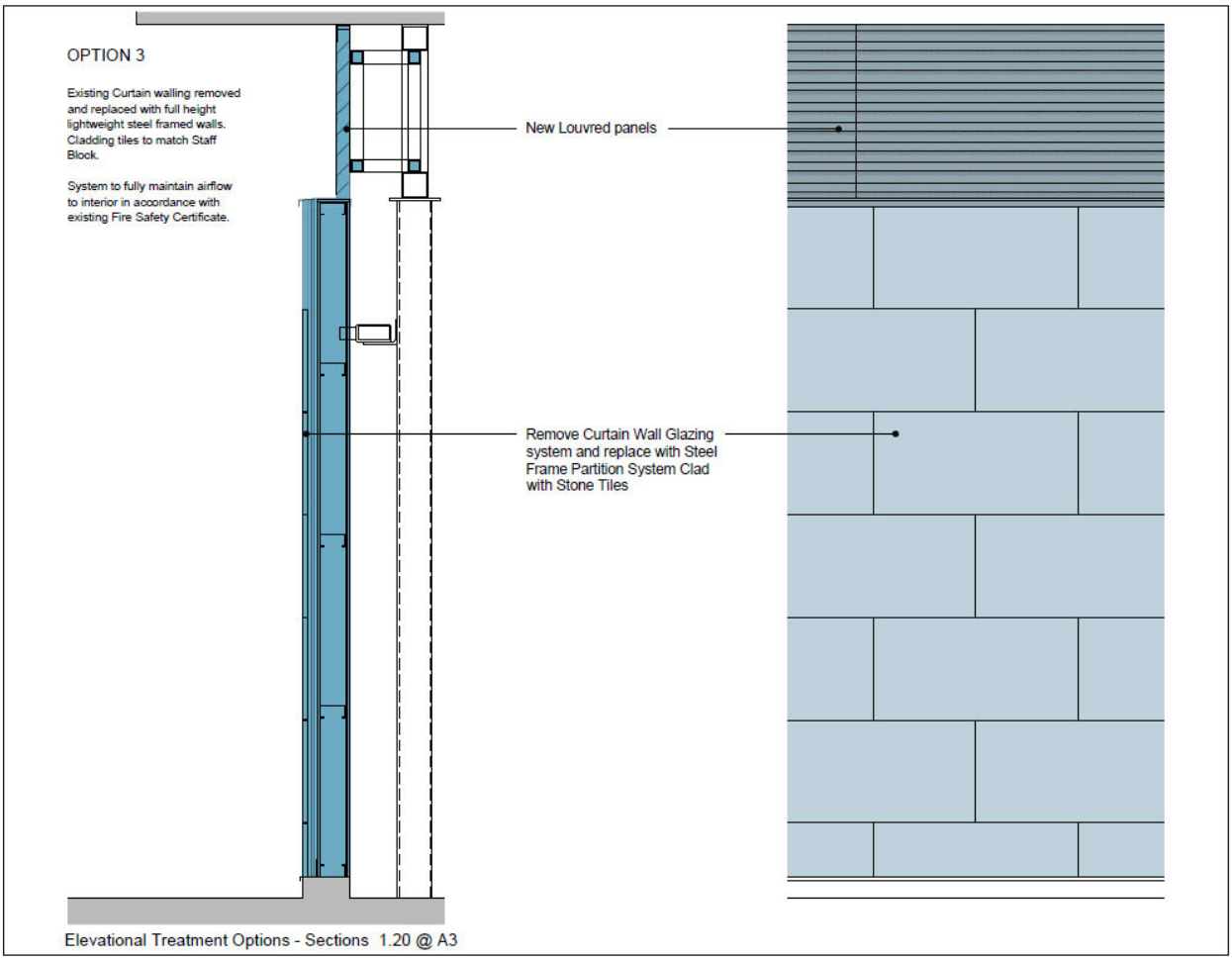
Elevational Treatment Option 01 (ref drawing no. 2101_SK_700)

Lightweight modular panelised cladding panels (combination of perforated, mesh, and solid panels) face fixed to existing curtain walling system in "brick bond" patterns, to provide combination of robustness, passive security through transparency, and visual interest. The gap between Curtain Walling Frames and soffit to be infilled with Modular Louvre panels to maintain airflow in accordance with existing Fire Safety Strategy.



Elevational Treatment Option 02 (ref drawing no. 2101_SK_701)

Existing Curtain walling frames retained, existing glazing removed to height of first mullion just above head height. The existing glazing is then to be replaced with Aluminium infill panels with etched external finish fixed into the existing curtain walling system in place of glass at low level. Perforated steel cladding system provided at high level to protect high level glazing retained, and to infill gap between curtain walling and soffit.



Elevational Treatment Option 03 (ref Architectural Scoping Drawing no. 2101_SK_150 and drawing 2101_SK_702)

Option 03 is the option reflected in the “Base Build” scope of works, and in the Order of Magnitude Cost Report.

In this option, the existing Curtain walling removed and replaced with lightweight steel framed partition system, constructed to same height as existing Curtain Walling. Replacement external walls to be clad externally with Large Format Stone Tiles to match existing Staff Block. The gap between SFS walls and soffit to be infilled with Modular Louvre panels to maintain airflow in accordance with existing Fire Safety Strategy.

Stakeholder Review

A Stakeholder Review meeting was held on 15.04.2021 where CPA introduced the option study exercises outlined at item A, B, C and D above. Key Stakeholders in attendance are listed as follows:

Joy Murray, Irish Rail – CCE B&F Manager
Paul Stanley, Irish Rail – RU Operations
Gerry Kennedy, Irish Rail – CCE M&E Manager
Gerard Lynch, Irish Rail – CCE B&F Regional Manager

Key decisions made include the following:

Accessibility Options

In addition to outlining operational solutions, the Design Team presented 5 no. ranked options for addressing accessibility issues at the station, as follows:

- Provision of Stairlift to platform 1 & 2
- Provision of additional lift shaft to serve Platform 1 & 2 within concourse building. Stairs reorientated to accommodate.
- Provision of New External Lift to East of Concourse serving Platforms 1 & 2.
- Provision of New External Lift to West of Concourse serving Platforms 1 & 2.
- Provision of 2 no. new lifts and linking gantry to East end of Platform 1 & 2 and car park respectively.

Following presentation of the above all IÉ stakeholders supported the concept that an additional lift is required to address Platform 1 & 2 accessibility issue, and that any additional lift would be ideally be located in a position internal to the building envelope, noting the greater protection this arrangement provides.

IÉ Stakeholders did not support operational solutions to Platform 1 & 2 Accessibility issue.

Operational Layout

Following presentation of the Drawings 2101_SK_140, 2101_SK_141, 2101_SK_145 and 2101_SK_146 provided in Volume 02, the Stakeholders confirmed they were satisfied with the adjusted fencing line to south of concourse as shown in Operational Diagram 01. CCE B&F, CCE M&E and RU confirmed they were satisfied with a “tag-on, tag-off” approach, removal of existing validation gates, and that ticket vending machines to be kept internal to the building.

Minutes of this Stakeholder meeting are provided at Appendix 3 of Volume 1

6 Accessibility Observations

Some high level observations in respect of station accessibility as considered against CCE-TMS-312, Version 1.1 – Design Guidance Document for Accessibility of Railway Stations.

6 Accessibility Observations

Basis of Analysis:

In accordance with our scope to review the existing accessibility infrastructure throughout Kishogue Station, we have reviewed the existing stairs providing access to the platforms. Whilst the station was completed as a building structure in 2008 it was never commissioned into the rail network and therefore we must treat our review of the accessibility infrastructure as if this were a new station being brought forward to the CRR. As a result we have not considered the possibility of seeking any derogations from the CRR within our analysis and subsequent recommendations.

Further to the exercise carried out in in Section 4 above in respect of Platform 1& 2 accessibility issues, the following represents a preliminary high level overview of some accessibility observations.

- Access to and from Platform 3 is challenging for a mobility impaired passenger. The current installation is not Part M compliant. Previous structural provision for a future passenger lift has been made at platform 3. In the event that Platform 3 is commissioned, it is recommended that a lift be provided to Platform 3. A potential location for this proposal is illustrated in drawing 2101_SK_105 provided at Volume 2.

- Until such point as the future use of Platform 3 is clarified, proposals to accommodate a lift at Platform 3 are not reflected in the Base Build cost, rather it is listed in the The Order of Magnitude Cost Report, prepared by ORHT at Appendix 1 as an option cost.

- Commentary on the remedial works required to render the sanitary facilities compliant with Part M is detailed in the Architectural drawings 2101_SK_550 & 2101_SK_551 provided at Volume 2.

The following records high level observations in respect of station accessibility as considered against the main relevant headings of CCE-TMS-312, Version 1.1 – Design Guidance Document for Accessibility of Railway Stations.

a. Car Parking
b. Set-down and Pick-up Points
c. Locating and Approaching the Station
d. Unobstructed Progress
e. Doors
f. Lighting
g. Floors
h. Furniture
i. Signs
j. Announcements
k. Ticket Sales Points
l. Lifts
m. Ramps
n. Steps and Stairs
o. Ramps
p. Platforms
q. Seating, Waiting Rooms and Shelters
r. Toilets

The following information is derived from requirements set out in CCE-TSM-312 for Kishoge Train Station. This application relates to the refurbishment of the existing train station, comprising of one terminal

building above four platforms. The building is existing, and the aim here is to highlight that any refurbishment carried out incorporates the guidance set out in CCE-TSM-312.

a. Car Parking

No significant works are proposed to the main car park. However, it is recommended that the number of available designated parking spots is reviewed, and a sufficient number of designated parking spots are provided.

It is recommended that the kerbing within the carpark will be upgraded at the drop off zone such that it provides suitable crossing points and where applicable dished kerbing should be provided. The designated parking spots should be accessible to the building.

A stepped approach from the car park to the building terminal has been unavoidable, however, the proposal to provide a dual entry lift at car park level will ensure occupants arriving will have a means to access the terminal building and vice versa.

The number of designated parking spaces required is set out in TGD M 1.1.5, in the absence of a specific number of designated spaces being provided by the Local Authority, it is recommended that a minimum of 5 % of the total number of spaces provided should be designated parking spaces.

For markings on new designated spaces on ground level will display the symbol of access. It is proposed that existing lighting to the exterior or the building is to be fully refurbished.

b. Set-down and Pick-up Points

The setting down and pick up locations at road level are under review as to whether they can be improved given that these are beyond the boundary site, further clarification is required. It is recommended that the kerbing at the drop off zone such that applicable dished kerbing should be provided.

c. Locating and Approaching the Station

When approaching the Station from the road level, the tiles/pavement slabs require refurbishing. Alighting from the train, approaching the station from the platform area on Platform 3 requires resurfacing and the remaining platforms require further review. Platform 4 is proposed to be provided with dropped kerbs such that entry from the car park will be more accessible for those with limited mobility, the provision of a dual entry lift is also proposed for access to and from Platform 4. The ramp access from Platform 3 is required to have gradient of not more than 1:20, this is thought to be the case however, this should be reviewed as part of Phase 2.

d. Unobstructed Progress

It is proposed that the ticket hall is to undergo extensive refurbishment, the floor within the building to be replaced and upgraded. The ticket turnstiles to be removed and replaced with touch pads. It is recommended that these touch pads are provided with sufficient width capacity for any occupants that may require the use of a wheelchair to pass through unassisted.

e. Doors

All doors to be assessed at Phase 2 in respect of compliance with Code of Practice Guidance minimum clear widths. Commentary is provided on existing doors to sanitary facilities in Architects drawing 2101_SK_550 and 2101_SK_551.

f. Lighting

All lighting on site to be replaced, the lighting within the staff area to be retained if possible. Please refer to recommendations from MEP

g. Floors

All floors within the building are in need of replacement and repair. Slip resistance properties appear deficient and requires review. Please refer to Architects base build scope.

h. Furniture

Platform seating to be instated in compliance with guidance.

i. Signs

New signage is required, and it should be implemented throughout the site.

j. Announcements

All PA systems on site require repair or replacement, please refer to comments provided from MEP. These will be designed to PRM TSI: 4.2.1.1, TGD M: 1.6.6.

k. Help Points

Help points to be designed in accordance with PRM TSI: 4.4.1

l. Ticket Sales Points

The ticket sales points within the terminal building are existing and will require a cosmetic upgrade. They are required to be easily identifiable with universal symbols and signs, be unobstructed and facilitate a mobility impaired passenger.

m. Lifts

The lifts require a full refurbishment, please see recommendations set out in MEP scoping speadsheets.

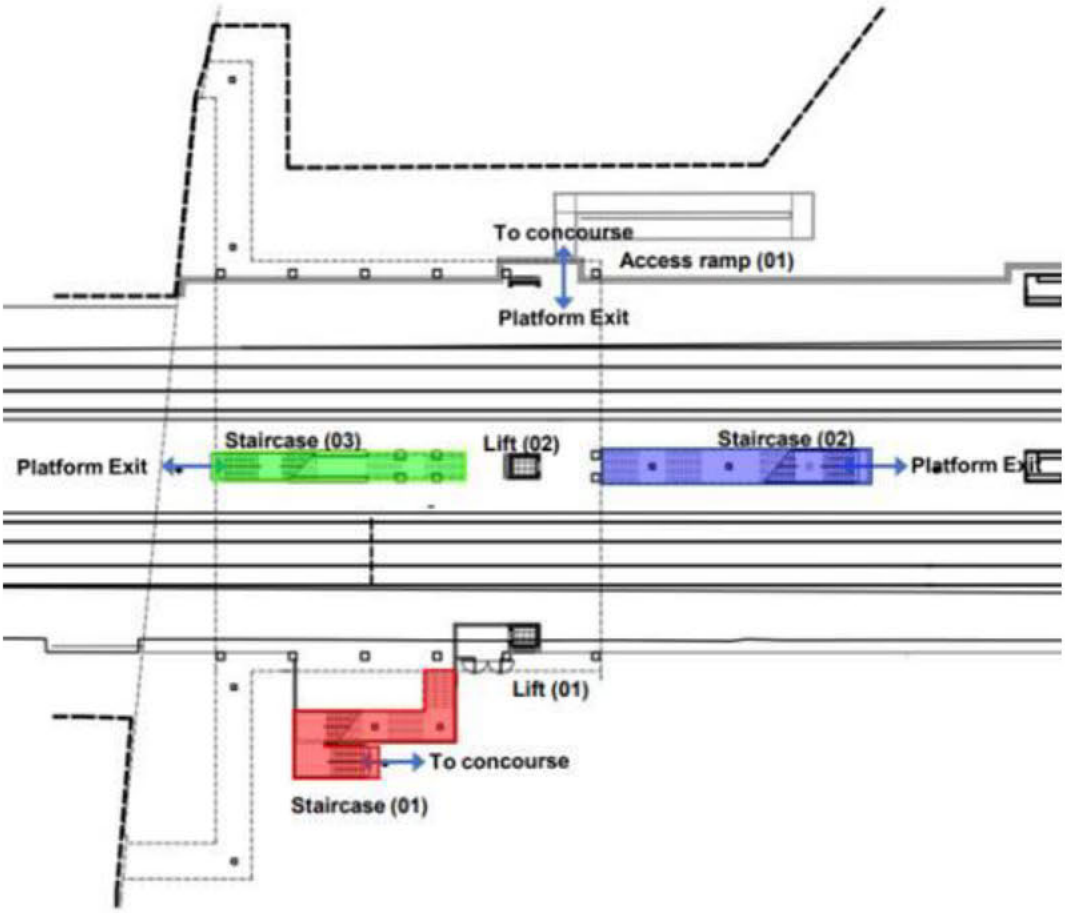
n. Ramps

Ramped access is provided to/from Platform 3, a gradient of not more than 1:20 is recommended, level landings are provided between each of the ramp flights, the level surface of these area require resurfacing. As this is an existing ramp it is expected that the ramp meets the gradient recommendations, however, this should be investigated further at Phase 2.

o. Steps and Stairs

In accordance with our scope to review the existing accessibility infrastructure throughout Kishogue Station, we have reviewed the existing stairs providing access to the platforms. Whilst the station was completed as a building structure in 2008 it was never commissioned into the rail network and therefore we must treat our review of the accessibility infrastructure as if this were a new station being brought forward to the CRR. As a result we have not considered the possibility of seeking any derogations from the CRR within our analysis and subsequent recommendations.

Whilst any works relating to DART+ are outside the scope of this report, for clarity and ease of cross reference we have aligned our stair numbering with that outlined in TTA JV | DP-04-23-ENG-BU-TTA-01169-v01-S3-APPENDIX-03 as shown below.



As presented in the below table, the most onerous criteria regarding the geometry of a stair is derived from PRM TSI: 4.2.1.2.2. This standard required a minimum width between handrails of 1600mm. This minimum width also meets the minimum criteria set out in Part B and Part M of the current Building Regulations Technical Guidance Documents. TGD B provides us with our maximum limit of the width between handrails of 1800mm.

In light of the above we now have a clear range which we must adopt throughout.

Minimum clear width between handrails = 1600mm
Maximum clear width between handrails = 1800mm

Observations:

Steps and stairs	Standard	Width between handrails		Stair 01	Stair 02	Stair 03
	PRM TSI: 4.2.1.2.2	Minimum width (mm) between handrails	1,600 mm	< 1,200 mm non-compliant	< 1,300 mm non-compliant	< 1,200 mm non-compliant

	TGD-M:2003 Section 1.1.3.5 Item (a)	Minimum width (mm) between enclosing walls, strings or upstands	1,200 mm	If the measurement between the handrails meet the minimum requirement in Section 1.1.3.5 Item (n) of TGD part M. We would assume that the minimum width between enclosing walls, strings or upstands is met		
	TGD-M:2003 Section 1.1.3.5 Item (n)	Minimum width (mm) between handrails	1,000 mm	> 1,000 mm Compliant	> 1,000 mm Compliant	> 1,000 mm Compliant
	TGD B – Table 1.5	Minimum width (mm) of escape stairs	5 mm/person where more than 220 occupants are expected			
	TGD B	Maximum width (mm) between handrails	1,800 mm	< 1,200 mm Compliant	> 1,200 mm Compliant	< 1,200 mm Compliant
	TGD K	Minimum width (mm) between handrails	No maximum stated (refer to Part M, and Part B)	n/a	n/a	n/a

Recommendations:

- It is our opinion that Stair 01 does not meet the requirements set out by the PRM TSI. We propose that the central handrail is removed and provide new handrails at each side of the stairwell to provide a maximum width of 1800mm to meet the PRM TSI requirements and remain compliant with all other relevant Building Regulations detailed above.
- It is our opinion that Stair 02 does not meet the requirements set out by the PRM TSI. We propose that the central handrail is removed and provide new handrails at each side of the stairwell to provide a maximum width of 1800mm to meet the PRM TSI requirements and remain compliant with all other relevant Building Regulations detailed above.
- It is our recommendation elsewhere in this report that Stair 03 is to be reconfigured / re-built, and as such the width of the stairs will be suitably increased to meet the acceptable limits outlined above.
- Steps and stairs are to be resurfaced and provided with the necessary nosings and tactile hazard surfaces. The landings are required to be level and unobstructed.

p. Escalators and Moving walkways

Not applicable

q. Platforms

Guidance set out in the Code of Practice requires further investigation

u. Seating, Waiting Rooms and Shelters

Each platform is required to be provided with a waiting area, with a minimum of one area with seating facilities and space for a mobility impaired passenger.

r. Toilets

All sanitary facilities are under review; however, guidance recommends that a provision should be included, refer to TGD G: 2.2. It is recommended that the sanitary facilities are to be refurbished and updated in-line with current recommendations. See assessment of sanitary facility compliance in Architects drawing 2101_SK_550 and 2101_SK_551.

7 Statutory Consents

7 Statutory Consents

A conclusive statement on Statutory Consents can be provided once the preferred options are identified, and the scope of the project is more clearly defined. Currently a number of options have been identified to address the Platform 1&2 Accessibility issues, the Elevational Treatment, and the Platform 4 access issues. Taken in combination, these various options constitute a matrix of possible final configurations of the project, upon which it is premature to comment conclusively in respect of Statutory Consents.

The Design Team has identified and assessed solutions for each of these issues and made their recommendations. Once the Client preference is identified a more firm understanding on the overall project scope can be identified and a conclusive statement on Statutory Consents can be provided.

Planning Permission:

The Kildare Route Project and subsequently Kishogue Station received panning consent via a Railway Order, under the Transport (Railway Infrastructure) Act, 2001. The Railway Order application for the Kildare Route Project was submitted to the Minister for Transport on the 5th October 2005. Following consideration and an oral hearing, the Railway Order was approved on the 5th December 2006.
The original permission to construct Kildare Route Project [Railway (Kildare Route Project) Order 2006 SI 596/2006] states that the order will not come into effect until eight weeks after the Order was made, the 30th January 2007. There is no record of a notice issued to An Bord Pleanála for commencement, however it seems to be accepted that it came into effect on the 29th January 2007. The Railway Order time for completion period ran seven years from the date it came into effect, to the 29th January 2014.

The station building and platforms was constructed between 2008 and 2009, with reaching substantial completion in late 2009. The construction of Kishogue Station was completed within the original Railway Order period.

A car park to the south of the station building was included within the original Railway Order. Due to legal issues this was not progressed during the construction of Kishogue Station.

Applications were made to An Bord Pleanála to extend the Railway Order construction period. Approval was given and the time for completion extended to the 27th January 2019. The car park was designed, tendered and constructed between 2018 and 2019.

The station building, platforms and car park were constructed under four separate contracts:

Contract 1 - KRP Site 2 Kishogue Station: o Construction of Platforms 1, 2 & 3 and Station Building

Contract 2 - Kishogue Station Down Side Platform & Access: o Construction of Platform 4

Contract 3 - Kishogue Station Interconnector Platform Pedestrian Ramp: o Construction of Pedestrian Ramp to Platform 3

Contract 4 - Kishogue Station Car Park: o Construction of Station Car Park (south of station).

Kishogue Station did not open for passenger services and has remained closed since. The station building was clad in temporary panels to prevent access. The station is maintained, but it had suffered from lack of use, reduced maintenance and vandalism.

The briefing and Safety File information provided make it clear the construction of the station and subsequently the car park has been carried out in accordance with the approved plans and sections for the Kishoge Station.

The current scope of proposed works would not be classed as exempted development (not requiring a section 5 submittal).

We understand that the Client preference is to make an application for a Section 5 declaration, engaging with the local authority to seek confirmation that an application for a full planning application is not required.

Currently it would seem likely that the scope of elevational treatments in combination with additional vertical transport elements (stairs and lift shafts external to the concourse building), canopies etc would constitute a material change and as such would require an application for Planning Permission. As of yet this position cannot be conclusive and requires assessment with the local authority when the project scope is defined in Phase 2 of the process.

Fire Design

We understand that the installation of Platform 4 has not been included within the existing Fire Safety Certificate, and that typically such an installation considered in isolation is beyond the requirements set out for a FSC. However, the inclusion of the lift serving Platform 4 will come under a material alteration to the existing FSC.

The current scope of proposed works would require an amendment to the existing Fire Safety Certificate.

At Phase 2 the more defined scope of the project will allow a conclusive statement on the mechanism to regularise the Platform 4 installation, and any proposed material changes in respect of Part B compliance to be provided.

Disability Access Cert (DAC)

A Disability Access Certificate is required for new buildings other than dwellings and certain other works (as set out in Article 20 D (1) of SI 351 of 2009) to which the requirements of Part M of the Building Regulations apply. In general, a DAC is required for works requiring a Fire Safety Certificates including all new buildings, extensions, some material alterations and certain material changes of use.

An application for a Disability Access Certificate (DAC) will be required for the proposed scope of works.

Building Control - BCAR

The Building Control (Amendment) Regulations 2014 (S.I.9 of 2014) will apply to the new works. To ensure that ‘the building or the work’ are carried out in accordance with the legislation, the Design Certifier and Assigned Certifier roles will be required.

Safety Approvals

Authorisation is required from the Commission for Railway Regulation (CRR) prior to placing new or modified rolling stock or infrastructure into service. This requirement may come from the Irish Railway

Safety Act 2005, or the EU Interoperability Directive. Guidance on the APIS process is provided in Commission for Railway Regulation (CRR) guideline RSC-G-009. Iarnród Éireann Safety Management Standard "IM-SMS-014 Safety Approval of Changes in Plant, Equipment, Infrastructure and Operations (PEIO)" is a mandatory standard for works undertaken by IÉ.

The following specific activities are required:

- Prepare a Concept Stage application for Authorisation to Place in Service (APIS) to the Commission for Railway Regulation (CRR) for the project in accordance with the CRR Guidelines for the approval of new infrastructure works, in particular RSC-G-009 'Guidelines for the Process of Authorisation for Placing in Service of Railway Sub Systems'.

- Assist the Client in preparing an application to the Iarnród Éireann Infrastructure Manager Safety Approval Panel (IMSAP) for Certificate E in accordance with IM-SMS-014. An approved Certificate E is required at the end of Phase 1.

- Prepare a Detailed Design Stage application for Authorisation to Place in Service (APIS) to the Commission for Railway Regulation (CRR) for the project in accordance with the CRR Guidelines for the approval of new infrastructure works, in particular RSC-G-009 'Guidelines for the Process of Authorisation for Placing in Service of Railway Sub Systems'.

- Assist the Client in preparing an application to the Iarnród Éireann Infrastructure Manager Safety Approval Panel (IMSAP) for Certificates D and C in accordance with IM-SMS-014. An approved Certificate C is required at the end of Phase 2.

- Prepare Interim Operation and Operation Stage applications for Authorisation to Place in Service (APIS) to the Commission for Railway Regulation (CRR) for the project in accordance with the CRR Guidelines for the approval of new infrastructure works, in particular RSC-G-009 'Guidelines for the Process of Authorisation for Placing in Service of Railway Sub Systems'.

- Assist the Client in preparing applications to the Iarnród Éireann Infrastructure Manager Safety Approval Panel (IMSAP) for Certificates B and A in accordance with IM-SMS-014 – Safety Approval of Changes in Plant, Equipment, Infrastructure & Operations (PEIO).

Initial discussions have commenced between Iarnród Éireann and the Commission for Railway Regulation. Further discussions and an agreed way forward to be established in the next project phase.

8 Cost

Overview of Phase 1 Cost exercise

8 Cost

Approach at Phase 02.

We note that, as per NTA requirements, the preliminary cost estimate takes the form of a Feasibility Working Cost/Order of Magnitude Cost for the proposed works to the facility. The Order of Magnitude Cost, included at Appendix 1, is based on the core 'base build' scope of works, with order of magnitude costs identified 'below the line' for the various alternative cladding and accessibility options identified in the overall Appraisal Report.

The level of costing provided is commensurate with the current level of design. Currently the design package is at preliminary sketch level, with outline proposals to allow the Client to identify the preferred options to take forward. The level of detail upon which a detailed breakdown of costings could be based, does not yet exist. That detail can be added at the next Phase of activity, when the preferred options are identified and the design has progressed. To attempt to provide more detailed cost breakdowns at this early point in the process would lend individual costs a sense of accuracy that they do not merit and which could ultimately prove misleading.

We have identified what we consider an appropriate level of contingency at this initial stage of the process and would expect this allowance to reduce in future stages as the preferred options are identified allowing for further design development.

Detailed cost estimates will be prepared at the relevant stages as the design of the scheme develops and more detailed design is available.

We note that inflation from the base date (May 2021) is excluded from our costings and draw attention to the list of exclusions appended to same.

Costs included are for construction costs only. All costs exclude VAT.

9 Timeline

An indicative timeline to contractor mobilisation.

9 Timeline

The outline timeline below is an indicative interpretation of the Client timeline advised in the Kishoge Station Opening – Client Requirement Specification.

This timeline is based on the initial Phase 1 understanding of the project scope and recognises that this element cannot be formalised until the project scope is defined, with preferred options selected.

Project Milestones	**Timeline**
Complete Appraisal Report	May 21
Client Sign off and instruction to proceed with preferred options	2 weeks
Complete preliminary design & working cost estimate	10 weeks
Client Sign off and instruction to proceed	2 weeks
Prepare and submit application for Planning Permission	6 weeks
Prepare and submit application for Fire Safety Cert & DAC	6 weeks
Receive statutory consents	8-12 weeks
Complete detailed and tender design	10 weeks
Client Sign off and instruction to proceed	2 weeks
Prepare & Issue ITT	4 weeks
Tender Returns	6 weeks
Tender Reporting & Award	4 weeks
Contractor Mobilisation	4 weeks

Following definition of the project scope at Phase 2 a formal Project Schedule can be developed. The project schedule is a key and vital tool in assisting the project manager to deliver the project on time, and within budget. The project schedule will establish goals to be worked towards, and will also assist in assigning the workloads of the individual project members.

A Project Schedule will be prepared at Phase 2, with the start dates, the finish dates and float identified for all activities.

10 Schedule of drawings

A schedule of all architectural drawings provided at Volume 2.

10 Schedule of drawings

All architectural drawings are to scale at A3, provided at Volume 2.

All drawing highlighted in blue form part of the anticipated “Base Build Scope”.

Survey
2101_SY_010: Existing Site Layout
2101_SY_100: Existing Platform Level
2101_SY_101: Existing Concourse Level

Accessibility Options Appraisal
2101_SK_100: Accessibility Study Option 01
2101_SK_101: Accessibility Study Option 02
2101_SK_102: Accessibility Study Option 02
2101_SK_200: Accessibility Study Option 02
2101_SK_103: Accessibility Study Option 04
2101_SK_104: Accessibility Study Option 05
2101_SK_105: Accessibility Study Platform 3
2101_Accessibility Study Table 001

Platform 4
2101_SK_140: Platform 4 Option 01
2101_SK_141: Platform 4 Option 01
2101_SK_145: Platform 4 Option 02
2101_SK_145: Platform 4 Option 02

Elevational Treatment
2101_SK_130: Elevation Treatment Scoping Plan
2101_SK_200: Elevation Treatment Scoping Elevation
2101_SK_700: Elevation Treatment Option 01
2101_SK_701: Elevation Treatment Option 02
2101_SK_702: Elevation Treatment Option 03

Operational Layout
2101_SK_150: Operational Diagram 01
2101_SK_151: Operational Diagram 02

Base Build Works
2101_SK_500: Building Fabric Platform Level
2101_SK_501: Building Fabric Concourse Level
2101_SK_502: Clean & Decorate Platform Level
2101_SK_503: Clean & Decorate Concourse Level

Sanitary Facility Compliance Study
2101_SK_550: Sanitaryware Compliance Study – Staff WC
2101_SK_551: Sanitaryware Compliance Study – Concourse WCs

11 Appendices

Appendix 1: The Order of Magnitude Cost Report, prepared by ORHT

Appendix 2: Client Requirement Specification

Appendix 3: Minutes of Stakeholder Review Meeting

Kishoge Station Opening

KISHOGE, CO. DUBLIN

Phase 02: Project Appraisal Report
Appendices

Appendix 1 - Order of Magnitude Cost Report

Prepared by O'Reilly Hyland Tierney & Associates

O'REILLY HYLAND
TIERNEY & ASSOCIATES

Feasibility Study

Kishogue Station Refurbishment

PREPARED FOR
Iarnrod Eireann

May 2021

QUALITY INFORMATION

Document Control

Version	Document Title	Prepared by	Reviewed By	Approved by	Date
V01	FS	DB	EW	PR	06/05/2021
V02	FS	DB	EW	PR	28/05/2021

Approved for issue

Paul Ryan 28 May 2021

Prepared for:

Iarnrod Eireann Kishogue Station Refurbishment

TABLE OF CONTENTS

INTRODUCTION

O'Reilly Hyland Tierney have been appointed by the Iarnrod Eireann to produce Feasibility Working Costs/ Order of Magnitude Cost for the proposed refurbishment of Kishogue Station in preparation for opening to the public.

The works comprise the upgrade and refurbishment of the existing vacant station with the addition of disabled access to the concourse area and platform levels. Included in this report is costs for the base build (works required to be undertaken to allow opening of the station), concourse level cladding options and accessibility options.

We note that inflation from the base date (30th April 2021) is excluded from our costings and draw attention to the list of exclusions appended to same.

Costs included are for construction costs only. All costs exclude VAT.

Costs included herein are based on the following assumptions:

1. Traditional procurement by competitive tender
2. Works executed as single building contract. Phasing excluded.
3. Vacant possession to building contractor for duration of works

EXECUTIVE SUMMARY

Project Cost Summary

Base Build Costs [redacted] (exclusive V.A.T.).

(cost includes for external wall option 3, accessibility option 2 and platform 4, option 1)

External Wall Treatment Options

Approximate Cost Increase / (Decrease) relative to Base Build Cost

Option 1 [redacted] (exclusive V.A.T.).

Option 2 (exclusive V.A.T.).

Option 3 (exclusive V.A.T.).

Accessibility Options

Approximate Cost Increase / (Decrease) relative to Base Build Cost

Option 1 [redacted] (exclusive V.A.T.).

Option 2 (exclusive V.A.T.).

Option 3 (exclusive V.A.T.).

Option 4 (exclusive V.A.T.).

Option 5 (exclusive V.A.T.).

Platform 3 Lift Option (exclusive V.A.T.).

Platform 4 Options

Approximate Cost Increase / (Decrease) relative to Base Build Cost

Option 1 [redacted] (exclusive V.A.T.).

Option 2 (exclusive V.A.T.).

BASE BUILD COST SUMMARY

CONSTRUCTION COSTS

BASE BUILD COSTS
Construction Costs (including cladding option 3, accessibility option 2 and platform 4, option 1)

Mechanical and Electrical Costs (as provided by Cundall) including allowance for M&E Contractors markup for overheads, profit and builders work in connection

[redacted]

Subtotal

Contingency @ 20%

Total (excluding of V.A.T.)

CLADDING OPTIONS COST SUMMARY

EXTERNAL WALL TREATMENT OPTIONS

APPROXIMATE NET INCREASE / (DECREASE) TO BASE BUILD COSTS

OPTION 1

Modular panelised mesh cladding panels to existing curtain walling with lightweight aluminium louvre to high level

Approximate Cost Increase / (Decrease) (exclusive of V.A.T.) [redacted]

OPTION 2

Replace glazed panels with aluminium infill panels to existing curtain walling with perforated steel panels to high level

Approximate Cost Increase / (Decrease) (exclusive of V.A.T.) [redacted]

OPTION 3

Remove existing curtain walling and replace with steel frame partition style system cladding with stone tile finish with lightweight aluminium louvre to high level

Approximate Cost Increase / (Decrease) (exclusive of V.A.T.) [redacted]

ACCESSIBILITY OPTIONS COST SUMMARY

ACCESSIBILITY OPTIONS

APPROXIMATE NET INCREASE / (DECREASE) TO BASE BUILD COSTS

ACCESSIBILITY OPTION 1

Fit stair lift to internal staircase 1, add glazed lobby to accommodate stairlift

Approximate Cost Increase / (Decrease) (exclusive of V.A.T.) [redacted]

ACCESSIBILITY OPTION 2

Install passenger lift in existing staircase 1, adjust staircore to accommodate passenger lift, move staircase to new location in existing staircore

Approximate Cost Increase / (Decrease) (exclusive of V.A.T.) [redacted]

ACCESSIBILITY OPTION 3

External platform at rear of concourse with passenger lift to track level, adjust external staircase to accommodate new platform passenger lift

Approximate Cost Increase / (Decrease) (exclusive of V.A.T.) [redacted]

ACCESSIBILITY OPTION 4

New passenger externally, adjacent to R136 to allow access to platforms 1 & 2

Approximate Cost Increase / (Decrease) (exclusive of V.A.T.) [redacted]

ACCESSIBILITY OPTION 5

Install steel gantry over tracks with passenger lifts at platform 4 and platform 1/2

Approximate Cost Increase / (Decrease) (exclusive of V.A.T.) [redacted]

ACCESSIBILITY OPTIONS

APPROXIMATE NET INCREASE / (DECREASE) TO BASE BUILD COSTS

Platform 3 Passenger Lift Option

External platform to side of concourse with passenger lift to track level

Approximate Cost Increase / (Decrease) (exclusive of V.A.T.)

[redacted]

PLATFORM 4 OPTIONS

PLATFORM 4 ACCESSIBILITY OPTIONS

APPROXIMATE NET INCREASE / (DECREASE) TO BASE BUILD COSTS

PLATFORM 4 OPTION 1

New staircase, demolish section of existing staircase, access gate, security fencing and blockwork at track level, structural alterations to lift shaft, adjustment of fencing for paid/ unpaid areas and new double sided lift car

Approximate Cost Increase / (Decrease) (exclusive of V.A.T.) [redacted]

PLATFORM 4 OPTION 2

New staircase, demolish section of existing staircase, access gate & access control, security fencing and blockwork at track level, adjustment of fencing for paid/ unpaid areas

Approximate Cost Increase / (Decrease) (exclusive of V.A.T.) [redacted]

DESCRIPTION OF WORKS

BASE BUILD COSTS

€ [redacted]

- **Frames**
  - Steel framing to canopies
  - Cladding supports to external wall cladding system
  - Treatment of existing steelwork as called up by the Structural Drawings
- **External Wall Completions**
  - Canopies to entrances to concourse, TER and electrical room door
- **Internal Wall Completions**
  - Allowance for steel mesh grilles to windows
  - Allowance for replacement of existing doors
- **Wall Finishes Internally**
  - Repainting internally throughout and replacement of any tiling
- **Floor Finishes**
  - Replacement of floor finishes to staff areas
  - Replacement of all internal and external tiles at concourse level
  - Replacement of all tiles to ramps and tactile pavings externally
- **Ceiling Finishes**
  - Replacement of existing suspended ceiling system
- **Building Fittings**
  - Allowance for signage package and miscellaneous fittings
- **Prepared Site**
  - Replace existing matwells with enlarged matwells
  - Clean and upgrade existing channel drain
  - New channel drain at lift
  - Replacement of channel drains at ramps
  - Replacement of nosings to external staircases
  - Power wash entire structure, including all staircases and ramps and roofs
  - Specialist cleaning/ polishing of balustrades and handrails
  - Adjust security fencing for paid/ unpaid areas
  - BWIC with replacement/ refurbishment of turnstiles
  - Replacement of broken glazed panels
  - Removal & Disposal of existing shelters at track level and making good
- **Site Structures**
  - Allowance for new shelters at track level in place of existing
  - Allowance for provision of seating
  - Allowance for bins
- **Site Enclosures**
  - Security Fencing
- **Roads Paths Pavings**
  - Replacement of existing tarmacadam surface at track level
  - Channel drains to platforms 1 & 2
  - Replacement of section of kerb
  - Line marking to carpark

- **Bathroom/ Kitchenette Refurbishment Works**
  - Refurbishment of staff and public toilets to comply with Part M
  - Refurbishment kitchenette
- **Mechanical and Electrical**
  - See Cundall Mechanical and Electrical costs breakdown
- **Allowance for BWIC and OH&P on above**
  - Allowance based on OMC stage costs
- **External Wall Option 3**
  - Demolition and disposal of existing curtain walling
  - Supply and installat full height light weight steel framed wall system
  - Cladding tiles to steel framed wall system to match Staff Block
  - Louvre infill panels above curtain wall system
- **Accessibility Option 2**
  - Lift to serve platforms 1 & 2 within concourse building
  - Staircase repositioned to accommodate lift installation
  - Lift lobby enclosure at track level
- **Platform 4 Option 1**
  - New Staircase
  - New access gate and blockwork wall at track level
  - Security Fencing at track level
  - Alterations to lift shaft
  - Adjust fencing at track level (paid/ unpaid)
  - Demolish section of existing staircase
  - New double sided lift car

[redacted]

Subtotal

Contingency @ 20%

Total (excluding V.A.T.)

DATA UTILISED FOR COSTS PRODUCTION

ORHT produced the costs included in the document based on the following information provided by the design team.

(1) Cullen Payne Architectural Draft Base Build Options package received 07.04.2021

(2) Cullen Payne Draft Accessibility Options package received 07.04.2021

(3) Cullen Payne Sanitary Facilities Part M package received 07.04.2021

(4) Cullen Payne updated Architectural package received 22.04.2021

(5) Cundall Civil and Structural matrix tracker and sketches received 09.04.2021

(6) Cundall revised Civil and Structural matrix tracker received 27.04.2021

(7) Cundall MEP & Lifts matrix tracker received 28.04.2021

(8) Cundall revised MEP & Lifts matrix tracker and budget costs received 28.04.2021

EXCLUSIONS

Exclusions and Notes

(1) Planning Levies, Fees and Charges.

(2) Professional Fees.

(3) Capital Contributions, Local Authority Contribution Fees or Charges.

(4) Fire Certificate requirements.

(5) Costs associated with archaeological supervision or discoveries.

(6) Inflation. Base date 30th April 2021.

(7) Abnormal costs in association with connections to existing services other than noted (local connections to all services assumed).

(8) Works to public road; works to public services.

(9) Works arising from surveys not yet carried out.

(10) Allowances for costs associated with track possessions, out of hours working, resident engineering staff on behalf of IE and associated disbursements / allowances for same.

(11) Costs associated with subsequent operational overheads to IE due to track possessions.

(12) Phasing of the works.

(13) All costs in association with Dart Plus.

(14) Tag on/ tag off equipment, pay stations, ticket machines and entrance barriers.

(15) Removal and disposal of contaminated materials.

(16) Abnormal costs in association with current Covid 19 pandemic and future restrictions on working conditions.

(17) Abnormal costs in association with Brexit.

(18) Works to carpark (other than noted).

ORHT O'REILLY HYLAND TIERNEY & ASSOCIATES

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Appendix 2 - Client Requirement Specification

Iarnród Éireann Infrastructure

KISHOGUE STATION OPENING

IARNRÓD ÉIREANN NEW WORKS

CLIENT REQUIREMENT SPECIFICATION

Revision History:

Version	Author	Review	Reason for Issue	Date

Table of Contents

1 Scope

This Client Requirement Specification (CRS) determines and documents Iarnród Éireann's end user requirements for the project and provides a foundation to develop the project scope of work. This CRS is for the Kishogue Station Opening.

2 Methodology

2.1 Client Description

The project is being sponsored by the Chief Executive of Iarnród Éireann, Mr. Jim Meade.

2.2 Project Title

Kishogue Station Opening.

2.3 Project Location

The proposed works are located at Kishogue Station at approx. 5¾MP on the Dublin to Cork railway line.

2.4 Project Background

As part of the Kildare Route Project [Railway (Kildare Route Project) Order 2006 SI 596/2006] a series of infrastructure improvements were made between Inchicore Depot and Cherryville Junction on the Dublin to Cork line. The works included the provision of additional tracks, signalling upgrades, bridge renewals, station upgrades and provision of two new stations at Fonthill Road and Kishoge.

As the overall project progressed to substantial completion in 2009, the station was completed and handed over from the Contractor to Iarnród Éireann on the 7th May 2009. The Kildare Route Project received its New Works Assessment Letter of Acceptance on 31st December 2010. However, Fonthill West and Kishogue Stations were excluded and did not receive acceptance to go into operation.

The station was not opened for passengers use or train service but secured from public access and monitored with a limited maintenance plan implemented.

In the time since its completion, the station building and facilities has had limited maintenance and suffered from vandalism damage. B&F and the RU do not view the current condition as "*ready to open*", and some remedial works are required to enable this to occur.

2.5 Project Aims and Objectives

The primary objective of the project is open the station for operational railway services.

This will be achieved as follows:

- Determine the requirements for opening the station from relevant IÉ stakeholders;
- Undertake surveys of the existing station building fabric, mechanical and electrical equipment to determine their condition;
- Recommend remedial works from surveys;
- Prepare working cost estimate and programme for undertaking remedial works;
- Review planning documentation and determine if planning consent is required for alterations;
- Review safety approval documentation and determine if Safety Approval Panel or Commission for Railway Regulation consent is required;
- Prepare tender documentation for a Contractor to implement repairs/renewal works;
- Procure a Contractor to carry out works as required;
- Carry out works to enable the station to come into operation.

The project will be delivered by New Works. It is envisaged that a mixture of internal resources and external consultants will be required to deliver the preliminary design including New Works Mechanical, Electrical, Architectural and Structural internal resources and a multi-disciplinary consultant.

2.6 Scope of Works

Kishogue Station has not been used nor maintained in the standard way for nearly 10 years. The project will address the following issues:

- Address building fabric issues such as water damage, bird infestation issues, badger tunnelling subsidence issues.
- Undertake works to address significant vandalism damage such as broken glass, graffiti, damaged building services.
- Undertake works to replace stolen services throughout the station (e.g. cables, light fittings).
- Undertake works to the ticket hall space corresponding with current operational requirements.
- Complete the installation of services in the station car park.
- Review and address any issues with statutory approvals and safety approvals.

The followings project phases are to be included within the Scope of Works:

- <u>Phase 1:</u>
  - Appoint design consultant;
  - Review the surveys and inspections;

- Procure and undertake surveys by external resources;
- Undertake review of providing secondary access to the island platform for persons with reduced mobility.

- Phase 2:
  - Prepare preliminary design for remedial works and alterations;
  - Preliminary list of remedial works and equipment to be replaced;
  - Provide working cost estimate.
  - Provide planning and regulatory consent opinion.

- Phase 3:
  - Consultation with Planning Authority;
  - Submission of Section 5 application or Planning Application if required;
  - Submit application for Fire Safety Certificate and Disability Access Certificate;
  - Commence application for completing the Safety Approvals Process.

- Phase 4:
  - Prepare detailed and tender design with specification for issue;
  - Update working cost estimate.

- Phase 5:
  - Undertake works required;
  - Gain Safety Approval to put station into Operation.

- Phase 6:
  - Project Close out & review

2.7 Requirements

Correspondence with main stakeholder and a meeting with same was held on 23rd March, 8th July and 15th July 2020 where the requirements for each of the following stakeholders were discussed:

- Buildings & Facilities Manager - South;
- Signal, Electric & Telecoms - Telecoms;
- Railway Undertaking – Mainline;
- Buildings & Facilities – M&E Manager.

The requirements listed below were discussed at a high level. It is noted that these requirements have not been considered in detail and need further works:

- Condition of the station building;
- Condition of the existing M&E equipment;
- Criteria for station operations.

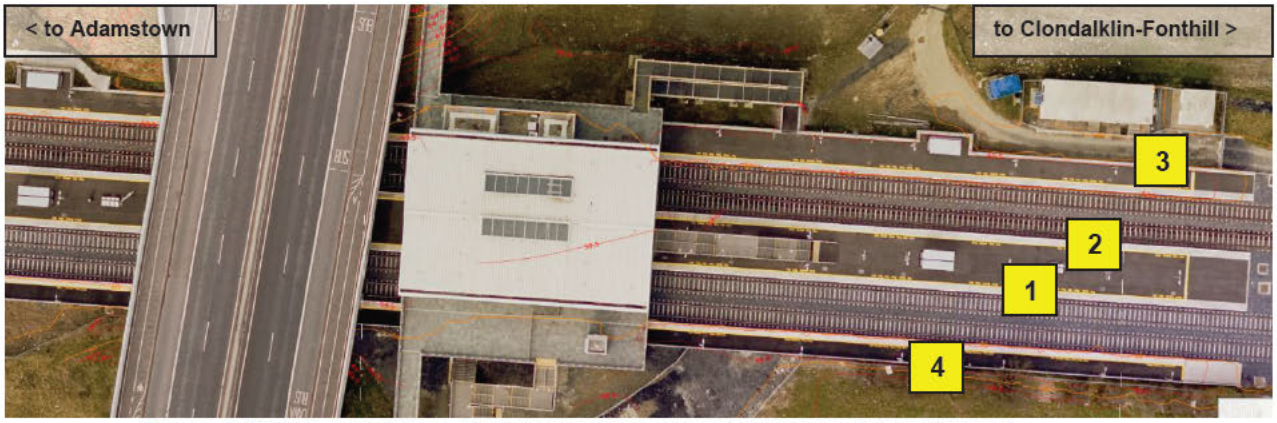

Figure 1: Station Aerial View. Platform naming convention (as per station signage).

2.7.1 Building & Facilities – Buildings & Structures

The overall station structure and fabric is in a moderate condition however a deep clean and remedial works are required. A building survey of the station was carried out in January 2020 and a structural inspection was carried out in August 2018. Recommendations in these reports have not been acted upon to date due to the disused condition of the station and lack of funding. The following requirements have been developed in consultation with the Buildings and Facilities (B&F) department.

Table 1 Building & Facilities – Buildings & Structures Requirements

Ref.	Requirement Type	Description
1.	B&F - General	- Deep clean required in all areas. - Removal of bird droppings, vandalised equipment and minor vegetation required.
2.	B&F - Platforms	- Inspect surface and repair any surfacing issues. - Repair animal burrows in platform surfacing of Platform 4
3.	B&F - Stairs	- Inspect stairs. Where required, repair or replace nosings and other finishes on all stairs.
4.	B&F - Floor Finishes	- Inspect floor finishes (internal and external). - Repair or replace external paving and tiling around the station exterior which is currently uneven - Provide larger matwells at station building entrances.
5.	B&F - Building Structure	- Inspect primary and secondary structural elements (steel and concrete) - Inspect and repair structural corrosion and fire protection systems.
6.	B&F - Building Fabric	- Inspect existing building fabric. - Considering the station is intended to be unmanned, alternatives to the glazed curtain wall system are to be considered that will provide a robust solution. - A gap currently exists between the station building curtain wall and the roof. Solution to issues associated with this gap to be determined. Issues include: • Birds gaining access to the station through the gap. • Repeated activation of the fire detection and intruder alarm system due to birds/fumes. - Investigate and find solution to the likelihood of condensation build-up within the station as experienced in similar conditions at Fonthill Station. - Evidence of water ingress and damage to electrical equipment with the electrical rooms. Water ingress issue to be resolved.

Ref.	Requirement Type	Description
7.	B&F - Building Fitout	- Inspect all doors including automated doors. Repair or replace defective doors. - Recertify roof fall arrest system for building, ticket office and TER. - Upgrade signage and wayfinding signage to latest standard. - Provide larger matwells at station building entrances
8.	B&F - Drainage and water systems	- Survey drainage and water systems. Repair any issues identified.
9.	B&F - Additional structures	- Canopy required at top of external stairs providing access to the island platforms. Objective: Prevent water ingress into the station building. - Canopy required at concourse level above lift door of lift serving Platform 4 (note: no canopy required at platform level).

2.7.2 Building & Facilities – Mechanical & Electrical

The Building and Facilities Department (Mechanical and Electrical section) undertook an initial condition survey of the station in June 2020 and have provided a schedule of works and cost estimate for replacing assets that have been damaged, removed or are life expired. An extract from this is provided in Appendix A where a summary of the schedule is provided. Further intrusive surveys are required to confirm assumptions made in the initial survey.

It is noted in that much of the M&E equipment on site is obsolete or has been damaged due to vandalism or water ingress. The requirements below have been developed through engagement with the Building & Facilities Mechanical & Electrical Department.

Table 2 Building & Facilities – M&E Requirements

Ref.	Requirement Type	Description
10.	B&F (M&E) - General	- All station services and containment require inspection, replacement and / or recertification. - If this station is not manned, then the existing gate line should be removed. - The complete station must be monitored with IP CCTV at all times. It shall be capable of connection to IÉ network for remote monitoring. - Fire detection system to be linked to the station TER for connection IÉ network for remote monitoring system. - A Fire Access Panel for Fire Service is required in the concourse to aid locating the source of the alarm.
11.	B&F (M&E) - Lifts	- It shall be possible for the lift fault report centre to review lift assets remotely. - Lifts must be monitored with IP CCTV at all times - A lift passenger call system must be fitted to each lift, this system will be required at this location and all calls routed to Heuston or a location that is manned. To be agreed with the RU. - Assuming the station is unmanned, passenger access to the lifts to be controlled. - All lifts must be enclosed and weatherproof.
12.	B&F (M&E) - Operational requirements	<u>Operational requirements:</u> - All lifts must be checked daily as per EN 81 and no lift asset should in service unless it is checked daily. - Lifts must be secured start/ finish of each shift and defects found must be reported immediately.

2.7.3 Signal, Electric & Telecoms - Telecoms

A representative from Telecoms noted that significant elements of the existing CCTV, CIS and PA will need to be replaced due to combination of obsolescence and vandalism.

A detailed survey of Telecoms equipment and components is required to determine the extent of the replacement works.

2.7.4 Railway Undertaking / Operational Requirements

The station was originally intended to be a manned station. The current proposal is that the station will be unmanned once opened. Requirements associated with this change other operational requirements are listed below.

Table 3: Railway Undertaking / Operational Requirements

Ref.	Requirement Type	Description
13.	Operational - General	- All four platforms are to be brought back in to use. Access to all four platforms will be required from the station building. - Initially, the island platforms 1 and 2 are to be used for services between Portlaoise-Heuston and Hazelhatch-Grand Canal Dock. - The station furniture (bins, shelters & seats) is to be installed on all four platforms however. - Platforms 3 and 4 are required where mainline services become degraded and need for de-train passengers from a crippled train or emergency services access to a train.
14.	Operational – Station Staffing	- The station is to open on an unmanned basis. - Station facilities are to be provided for a security guard. This will include necessary welfare facilities and CCTV monitors will have to be installed to enable monitoring of the CCTV within the station. - The completed station shall be future-proofed so that the ticket office could be opened in the future with minimal works.
15.	Operational – Revenue control	- Ticket validation poles may be more appropriate instead of ticket gates if the station is unmanned long term. - There is no objection to moving the Ticket Vending Machines from the concourse to external location if required, once shutters are provided.
16.	Operational – Station modifications	- Where there are gaps in the internal stair balustrades, these should be closed off for security purposes. - A CIS panel to be provided at concourse level to advise passengers of the next services and platform. - The area under the stairs adjacent to the car park and Platform No. 4 shall be fenced off to prevent access and congregating. - Existing public toilets not to be brought into use, proposed use as store instead.

17.	Operational – Mobility impaired access	- The only access/egress for mobility impaired passengers to and from platforms 1 and 2 is via a lift. A risk of a mobility impaired passenger being unable to use the lift due to damage or fault has been identified. A study is to be undertaken to identify options and associated costs to mitigate this risk.
18.	Operational – Access to Platform 4 from Car Park	- At present, passengers from the car park can use a lift or stairs to access the concourse level or access platform 4 directly. Trespass on the railway at this location is considered to be high risk. To reduce the risk of trespassers entering from the car park, access to platform 4 shall be curtailed. Passengers accessing from the car park should be directed through the concourse level. This will require a revised stair/lift arrangement from the car park, similar to current layout at Clondalkin-Fonthill station or an equivalent effective proposal.

2.7.5 Survey Requirements

A detailed review of existing surveys and undertaking additional surveys is required to determine the exact condition of the station and M&E equipment and assess the workload for renewal or replacement.

Further meetings and site inspections are required with relevant stakeholders to determine the full list of project requirements. The next project meeting is to determine:

- A list of inspections required;
- Scope of inspections of station & equipment;
- Programme and resources for inspections;
- Criteria for remedial works or equipment replacement;
- Outline budget for remedial works and M&E equipment.

2.8 Project Construction Methodology

In general, standard equipment shall be specified and standard methods of construction shall be used. No novel or complex equipment or construction methods are envisaged. As an existing station, the planned works are upgrades to the existing infrastructure in general.

2.9 Quality & Safety Standards

- All works shall be in accordance with Iarnród Éireann standards, or deviations shall be subject to formal derogation.
- All works shall be in accordance with Commission for Rail Regulation guidelines.

- All works shall be in compliance with the Current Building Regulations and Iarnród Éireann structural standards.
- All works shall comply with Planning Authority Permissions and instructions.
- CIE/Iarnród Éireann Procurement standards shall be followed.

2.10 Environmental Considerations

The project shall comply with Iarnród Éireann Environmental Policy.

Surveys and design shall incorporate measures to reduce waste and reuse equipment on site where possible. Design teams shall follow Environment Protection Agency guidelines for "*Designing Out Waste*".

Surveys shall be specified to identify hazardous materials and appropriate disposal measures shall be implemented.

Waste arising from this project shall be classified and disposed of in accordance with applicable legislation and EU Directives.

2.11 Project Risks

A risk register will be developed with the stakeholders to identify risks and appropriate mitigation measures. The risk register will be managed and developed throughout the project in consultation with the stakeholders.

A non-exhaustive list of high-level risks are provided below. These risks will be assessed and control measures put in place during Phase 1.

Table 4 List of High Level Project Risks

Ref.	Risk:	Description:	Consequence:
1.	Railway Order – planning risk.	As the station never opened with the Kildare Route Project, full planning permission may be required.	Delay to project. Additional design fees. Planning conditions may alter the station.
2.	Safety Approval Process	As the station never opened with the Kildare Route Project, further approvals from IMSAP & CRR may be required for APIS and Std 14.	Delay to project. Additional design fees. Additional costs to resolve issues.

Ref.	Risk:	Description:	Consequence:
3.	Public Building Certificates – Fire Cert & DAC	As the station never opened with the Kildare Route Project, Fire Cert and DAC may not have been procured, further approvals from Local Authority may be required.	Delay to project. Additional costs to resolve issues.
4.	Discovery of unknown conditions in existing structures.	The full condition of the existing building structures are yet to be understood. Unforeseen conditions may be encountered with respect to the layout, structural integrity, water proofing, site services, structural corrosion etc.	Additional costs to resolve issues. Additional costs due to bringing non-compliant elements
5.	Discovery of unknown conditions in existing M&E equipment.	The full condition of the existing building structures are yet to be understood. Unforeseen conditions may be encountered with respect to mechanical, electrical and telecoms equipment.	Additional costs to resolve issues.
6.	Changes in materials and equipment standards and procedures	Mechanical and Electrical equipment advances and changes in B&F M&E requirements and procedures may have changed since the construction of the station.	Additional costs to resolve issues. Additional costs due to new M&E requirements.
7.	Operational railway – interface with live track	It is likely that the work will have to be carried out on platforms and station building, adjacent to and over live track. There is a risk of issues in managing the interface with CCE and resources.	Delays to the project. Additional requirements / scope creep. Additional costs.

Ref.	Risk:	Description:	Consequence:
8.	Unknown Stakeholders	In a station environment, there are many stakeholders. These are not always easy to identify and engage with at the project commencement. There is a risk that they may only be identified and engaged with at a later stage.	Delays to the project. Changes in scope. Additional costs.
9.	Utilities	Risk of delays and complications in connecting new utilities and in connection with existing utilities.	Delay to the project. Additional costs in terms of capital contributions / diversion costs.
10.	Financial	The required budget may exceed available funding. The available project budget has not been defined.	All requirements may not be possible to be delivered. The project may become unfeasible.

2.12 Project Assumptions and Constraints

a) Stakeholder input shall be provided by B&F, M&E and RU representatives for the duration of the project.
b) Adequate funding shall be made available to develop further phases of the project at future Board meeting(s).
c) There are no interfacing projects at the station that will impact on this project.
d) The station will open in accordance with its design and construction as intended under the Kildare Route Project Railway Order.
e) The facility will be maintained by the CCE Building & Facilities department on completion.

2.13 Preliminary Estimates

As the exact scope of the works required has yet to be defined, it is not possible to provide a total project cost. However, it is estimated to be in the range [redacted]

This initial estimate excludes undertaking significant works as described in Section 2.7.4 items 17 and 18. An estimated cost range to address mobility impaired secondary access to Platforms 1 and 2 (for example adding an extra lift) and providing separate access to platform 4 is to be determined.

2.14 Programme

The following milestones are forecast. These are contingent on a number of factors including:

- Iarnród Éireann stakeholder department process requirements in a timely fashion;
- Changes in requirements are not introduced;
- Assumptions within this document are correct.

Project Milestones	Target date
Sign off Client Requirement Specification (CRS)	Aug-20
Board Approval to progress project	Oct 20
Appoint Consultant	Nov 20
Complete Feasibility & Options	Feb 20
Complete preliminary design & working cost estimate	Apr 21
Complete detailed and tender design	Jun-21
Issue ITT	Jul-21
Seek Board approval to progress construction stage	Oct-21
Award Main Contract	Nov-21
Commence Construction	Jan-22

Depending on the final construction scope and phasing required, it is expected that the construction stage will be completed 6 – 8 months after approval has been granted.

2.15 Business / Corporate Plans & Governance

The opening of the station makes use of a valuable station asset and car park. The opening will provide a vital mainline and commuter railway services for the proposed Clonburris SDZ.

The utilisation of this station offers opportunities for new passenger flows and provision of park and ride facilities.

2.16 Document Acceptance

The undersigned agree that the requirements contained in this Customer Requirement Specification shall be adopted for the project including project scope generation, design and construction. If there is an element of this specification that cannot be reasonably implemented, then the parties shall agree an alternative solution.

Project Sponsor	Title	Signature	Date
Jim Meade	*Chief Executive*		
Project Stakeholders			
Billy Gilpin	*Director, Railway Undertaking*		
Pat Casey	*Passenger Services Manager Mainline*		
Joy Murray	*CCE, Building and Facilities Manager*		
Gerry Kennedy	*CCE M&E Manager*		
Éamonn Balance	*Chief Civil Engineer*		

Appendix 3 - Minutes of Stakeholder Review Meeting

Cullen Payne Architects

Stakeholder Meeting Report 001

Project name:	**2101: Kishogue Station Opening**	
Venue:	Microsoft Teams	
Date:	15 April 2021	
Present:	Ollie Tierney, Irish Rail	IR(OT)
	Owen McKiernan, Irish Rail	IR(OM)
	Joy Murray, Irish Rail – CCE B&F Manager	IR(JM)
	Paul Stanley, Irish Rail – RU Operations	IR(PS)
	Gerry Kennedy, Irish Rail – CCE M&E Manager	IR(GK)
	Gerard Lynch, Irish Rail – CCE B&F Regional Manager	IR(GL)
	Derry Kearney, Cundall	CD
	Hannah Brooker, Cundall	CD
	Darren Kelly, Cundall	CD
	Paul Ryan, O'Reilly Hyland Tierney	ORHT
	Colin Byrne, O'Reilly Hyland Tierney	ORHT
	Darran Egan, Cullen Payne Architects	CPA
	Ruairi Gaffney, Cullen Payne Architects	CPA
	Niall Cullen, Cullen Payne Architects	CPA
Circulation:	All present plus:	
	Declan McCabe, Irish Rail	IR
	Will Dolan, Cundall	CD
	Ger Doyle, Cundall	CD
	Suzanne Comerford, Cundall	CD
	Shane Blighe, Cullen Payne Architects	CPA
	Declan Burke, O'Reilly Hyland Tierney	ORHT

Item	Minute	Action
1.0	**Introductions**	
1.1	All were introduced.	
2.0	**Definition of Task**	
2.1	CPA noted that a copy of presentation material would be circulated following the meeting.	CPA
2.2	Referring to the CRS, CPA introduced the Design Team Phase 01 activities as follows: - To establish the extent of building fabric cleaning, repair, and replacement required. - To review Accessibility issues associated with Platforms 1 & 2. - To review access arrangements to Platform 4. - To propose options for treating the elevations to address issues of vandalism and access by birds.	CPA & DT

Item	Minute	Action

3.0 **Accessibility Options Appraisal**

3.1 In addition to outlining operational solutions, CPA presented 5 no. ranked options for addressing accessibility issues at the station, as follows:

1) Provision of Stairlift to platform 1 & 2
2) Provision of additional lift shaft to serve Platform 1 & 2 within concourse building. Stairs reorientated to accommodate.
3) Provision of New External Lift to East of Concourse serving Platforms 1 & 2.
4) Provision of New External Lift to West of Concourse serving Platforms 1 & 2.
5) Provision of 2 no. new lifts and linking gantry to East end of Platform 1 & 2 and car park respectively.

3.2 CPA outlined a scoring matrix used to assess options which scored proposals across 4 no. Criteria:

- User Experience
- Buildability
- Cost
- Risk

3.3 These criteria were considered from the Design Team perspective and were presented absent of IR Operational Input.

3.4 IR raised concerns about a stairlift compromising the width of fire escape route at stairs, does it require staff to be present, how it would be operated during evacuation, along with potential maintenance issues, citing recent negative experience at Mullingar station.

3.5 IR(JM) & IR(PS) flagged that Kishogue presents a particularly challenging environment, with vandalism and theft notable ongoing risks.

3.6 The meeting noted that the concept of a second lift at platform 1& 2 was supported by IR.

3.7 IR(GK) noted their strong preferences for solutions whereby lifts are located internally, within the building, noting the greater protection this arrangement provides.

3.8 CD observed that the transfer structure supporting the concourse building made internal lift solutions very difficult to construct.

3.9 All agreed provision of a back up means of universal access to platform 1 & 2 was extremely important. All IR stakeholders, JM, GK and PS, support installation of a second lift to platform 1&2 to achieve this objective.

Item	Minute	Action
3.10	IR requested that the design team add “Operational Experience” to the scoring matrix for assessing options.	CPA / CD
3.11	IR(PS) noted a lift outside the building envelope is less preferred, IR noted that option to provide a new lift to the west of the concourse building be explored further. This would be an independent structure but covered by a canopy to reduce water ingress.	ALL
4.0	**Platform 4**	
4.1	CPA introduced options for revised access arrangements to platform 4.	
4.2	IR agreed in principle with approach proposed.	
5.0	**Elevational Treatment**	
5.1	CPA presented 3 no. options of varying degrees of intervention to address the gap above the curtain walling, and to address the vulnerability of the existing glazing to vandalism.	
5.2	CPA noted that the original structure and its fire cert anticipate an airflow above the curtain walling. Any proposals to weather the gap above curtain walling would be required to maintain an airflow – failure to do so would necessitate mechanical smoke extract, new plant, new fire cert etc.	
5.3	IR(JM) reiterated the challenging context of Kishogue and the risks associated with providing any areas of unprotected glazing.	
5.4	IR(PS) noted that any Metal or Mesh cladding provided should be easily cleanable and ideally provide some level of transparency to facilitate passive security.	
5.5	IR(GK) confirmed they have no issues with incorporating louvres in the design solution. Approach would not be weathertight, but reduce rain ingress to station building.	
5.6	East Elevation discussed to leave as glazing, preference by IR(JM) for robust solution as other locations have issues with damage to glazing or glazing panels pushed onto track.	
5.7	CPA confirmed that a canopy at top of east stairs is included in the Base Build works.	
6.0	**Operational Layout**	
6.1	IR(PS) confirmed they were satisfied with the adjusted fencing line to south of concourse as shown in Operational Diagram 01.	
6.2	CCE B&F, CCE M&E and RU confirmed they were satisfied with a	

Item	Minute	Action
	"tag-on, tag-off" approach, removal of existing validation gates, and that ticket vending machines to be kept internal to the building.	
6.3	IR(PS) noted that customers route to the platform should still be taken through the building even with the removal of validation gates.	
7.0	**Building Condition & Base Build Works**	
7.1	CPA briefly outlined the current scope of architectural works required to facilitate the opening the station.	
7.2	Meeting noted CRS reference to converting public sanitary facilities to store rooms. CPA noted that this will will be reviewed in the context of Building Regs in due course.	CPA
7.3	IR(GK) noted preference to maintain the sanitary facilities, even if operationally IR choose to keep these facilities locked.	
7.4	IR(PS) noted that typically commuter stations within their network do not provide public WC facilities. Meeting noted that the Client preference is not to provide a public toilet at this location unless mandated by legal requirement.	
7.5	All agreed the requirement for enlarged mat wells, and the provision of canopies around all doors, with a larger canopy to be provided over the main stairs to the east of the concourse.	
7.6	CD summarised their findings from survey activities and tabled a summary of their Base Build recommendations. IR confirmed no further additions to be made by CCE M&E.	
7.7	CD outlined their observations on Vertical Transport.	
7.8	IR(GK) noted that if a summary spec of repair works required to the existing lifts to return them to their original state, then CCE M&E could include same as part of their upcoming 2021 Lift Works. CD to progress this.	CD
7.9	CD flagged the structural steel corrosion issue. IR(JM) & IR(GL) recommended that complete repair / remedial work be undertaken. Time to first maintenance intervention between 15 to 20 years for this element.	CD
7.10	ORHT noted that OMC pricing exercise was underway.	
10.0	**Next Steps**	
10.1	CPA tabled Phase 1 programme and noted that any Client feedback should ideally be forthcoming by 22.04.2021.	

Item	Minute	Action
10.2	IR noted they were happy for Design team to proceed on the basis of items discussed, and feedback provided during the meeting.	
10.3	IR(JM) noted that all stainless steel used should be marine grade 316.	
10.4	IR(GL) noted that cladding items proposed should have a 25 year life cycle.	
10.5	All agreed that the stairlift option would not be eliminated, and that the design team would continue to consider it while factoring in potential fire escape route, and maintenance issues.	DT
11.0	**AOB**	
11.1	IR confirmed that provision for Dart+ was not part of this project scope.	

Kishoge Station Opening

KISHOGE, CO. DUBLIN

Phase 02: Project Appraisal Report
Volume 02 - Schedules and Drawings

Issue 02 - 28th May 2021

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NTA Údarás Náisiúnta Iompair National Transport Authority

Rialtas na hÉireann Government of Ireland | Tionscadal Éireann Project Ireland 2040

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Prepared by Cullen Payne Architects

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- Item 2: B&F Platforms
- Item 3: B&F Stairs
- Item 4: B&F Floor Finishes
- Item 5: B&F Structure
- Item 6: B&F Building Fabric
- Item 7: B&F Building Fitout
- Item 8: B&F Drainage and Water Systems

CRS: Items 10-12 M&E Requirements
- Item 10: B&F (M&E) General
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- Item 12: B&F (M&E) Operational Requirements

CRS: Items 13-18 Operational Requirements
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- Item 16: Operational Station Modifications
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1 Drawings

Prepared by Cullen Payne Architects

All drawing highlighted in orange form part of the anticipated “Base Build Scope”.

Survey
2101_SY_010: Existing Platform Level Site Plan
2101_SY_100: Existing Platform Level
2101_SY_101: Existing Concourse Level

Accessibility Options Appraisal
2101_SK_100: Accessibility Study Option 01
2101_SK_101: Accessibility Study Option 02
2101_SK_250: Accessibility Study Option 02 Section
2101_SK_102: Accessibility Study Option 02
2101_SK_103: Accessibility Study Option 04
2101_SK_104: Accessibility Study Option 05
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2101_Accessibility Study Table 001

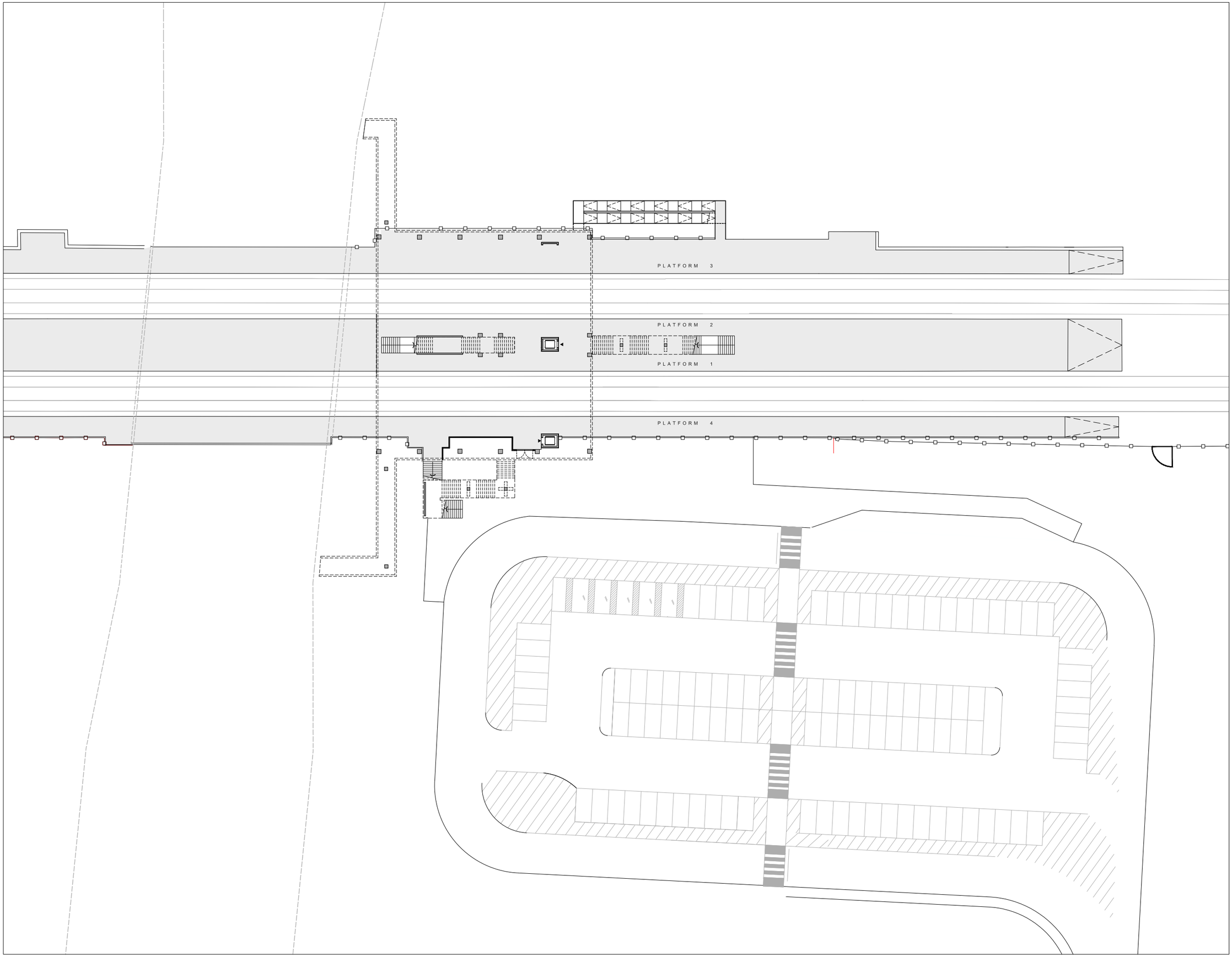
Platform 4
2101_SK_140: Platform 4 Option 01
2101_SK_141: Platform 4 Option 01
2101_SK_145: Platform 4 Option 02
2101_SK_145: Platform 4 Option 02

Elevational Treatment
2101_SK_130: Elevation Treatment Scoping Plan
2101_SK_200: Elevation Treatment Scoping Elevation
2101_SK_700: Elevation Treatment Option 01
2101_SK_701: Elevation Treatment Option 02
2101_SK_702: Elevation Treatment Option 03

Operational Layout
2101_SK_150: Operational Diagram 01
2101_SK_151: Operational Diagram 02

Base Build Works
2101_SK_500: Building Fabric Platform Level
2101_SK_501: Building Fabric Concourse Level
2101_SK_502: Clean & Decorate Platform Level
2101_SK_503: Clean & Decorate Concourse Level

Sanitary Facility Compliance Study
2101_SK_550: Sanitaryware Compliance Study – Staff WC
2101_SK_551: Sanitaryware Compliance Study – Concourse WCs



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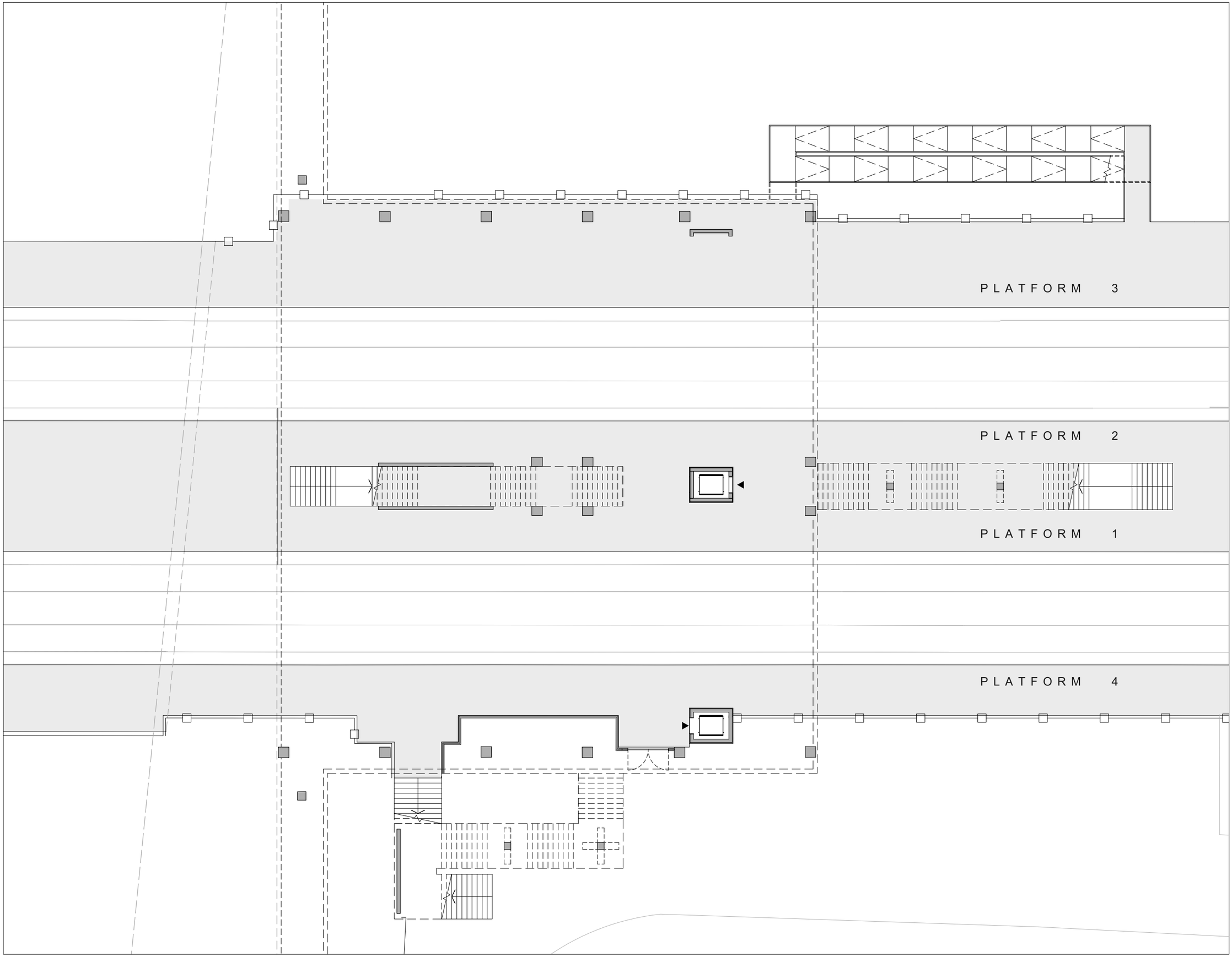
Kishoge Train Station

Drawing title
EXISTING
PLATFORM LEVEL SITE PLAN

Drawn	Date	Scale
RG	28.05.21	1.200

Drawing number
2101_SY_010

Revision
-



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Drawing title
EXISTING
PLATFORM LEVEL PLAN

Drawn	Date	Scale
RG	12.04.21	1.100

Drawing number
2101_SY_100

Revision
-

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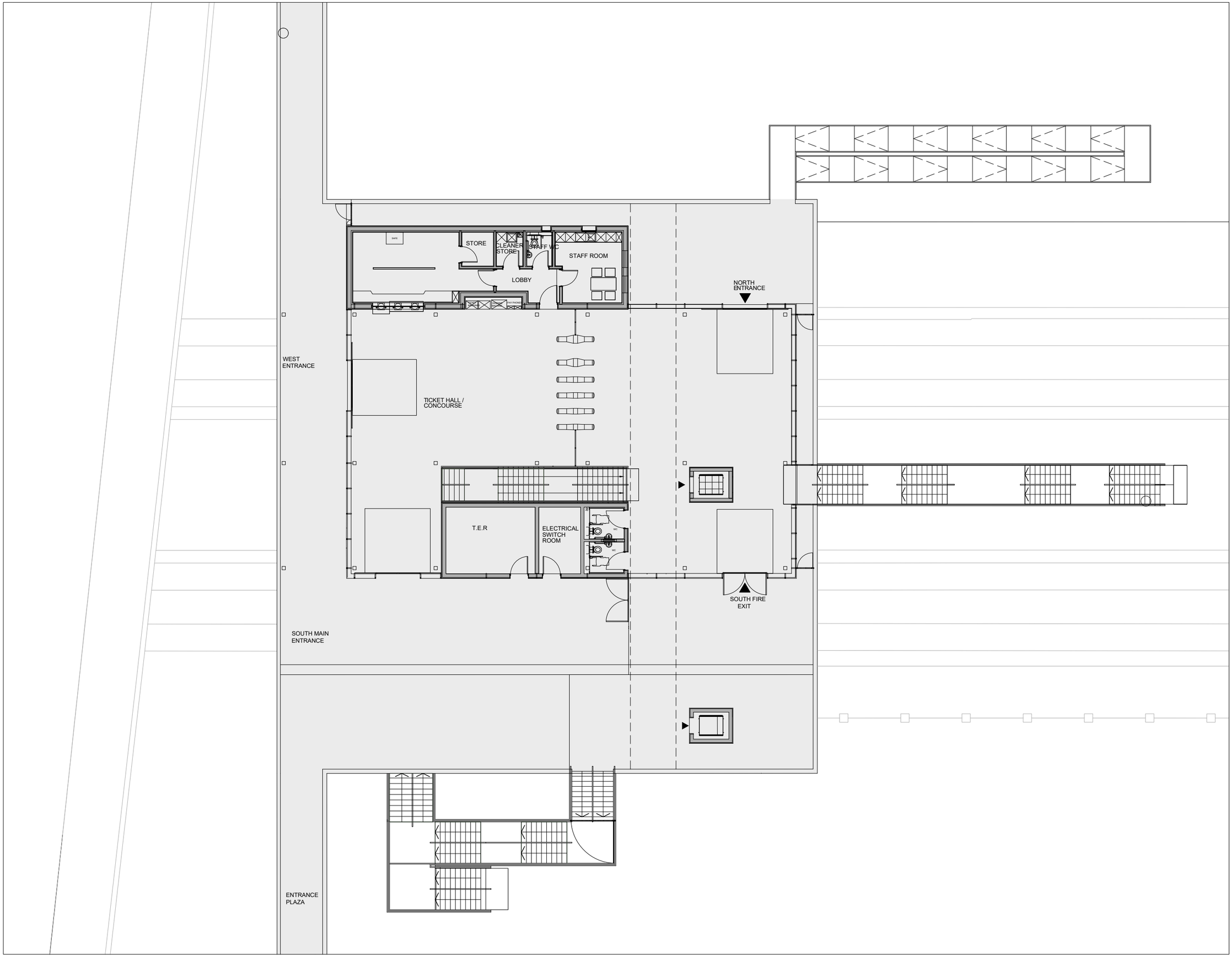

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Drawing title
EXISTING
CONCOURSE LEVEL PLAN

Drawn	Date	Scale
NC	14.04.21	1.100

Drawing number
2101_SY_101

Revision
-

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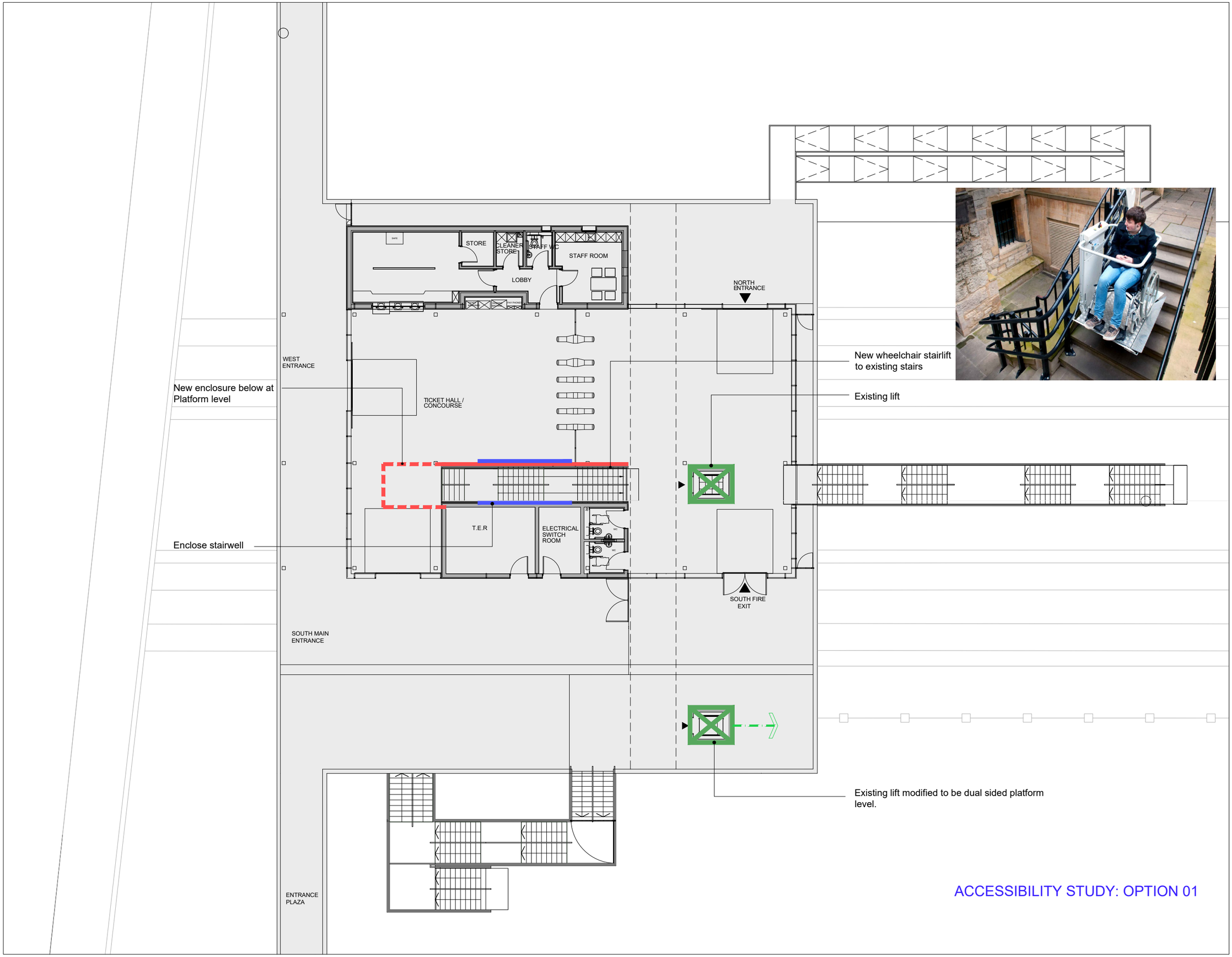

Rev	Date	Comment
C	-	-
B	-	-
A	26.04.2021	Lift to Platform 3 omitted

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Drawing title
ACCESSIBILITY OPTIONS APPRAISAL
ACCESSIBILITY STUDY OPTION 01

ACCESSIBILITY STUDY: OPTION 01

Drawn	Date	Scale
NC	14.04.21	1.100

Drawing number: 2101_SK_100

Revision: A

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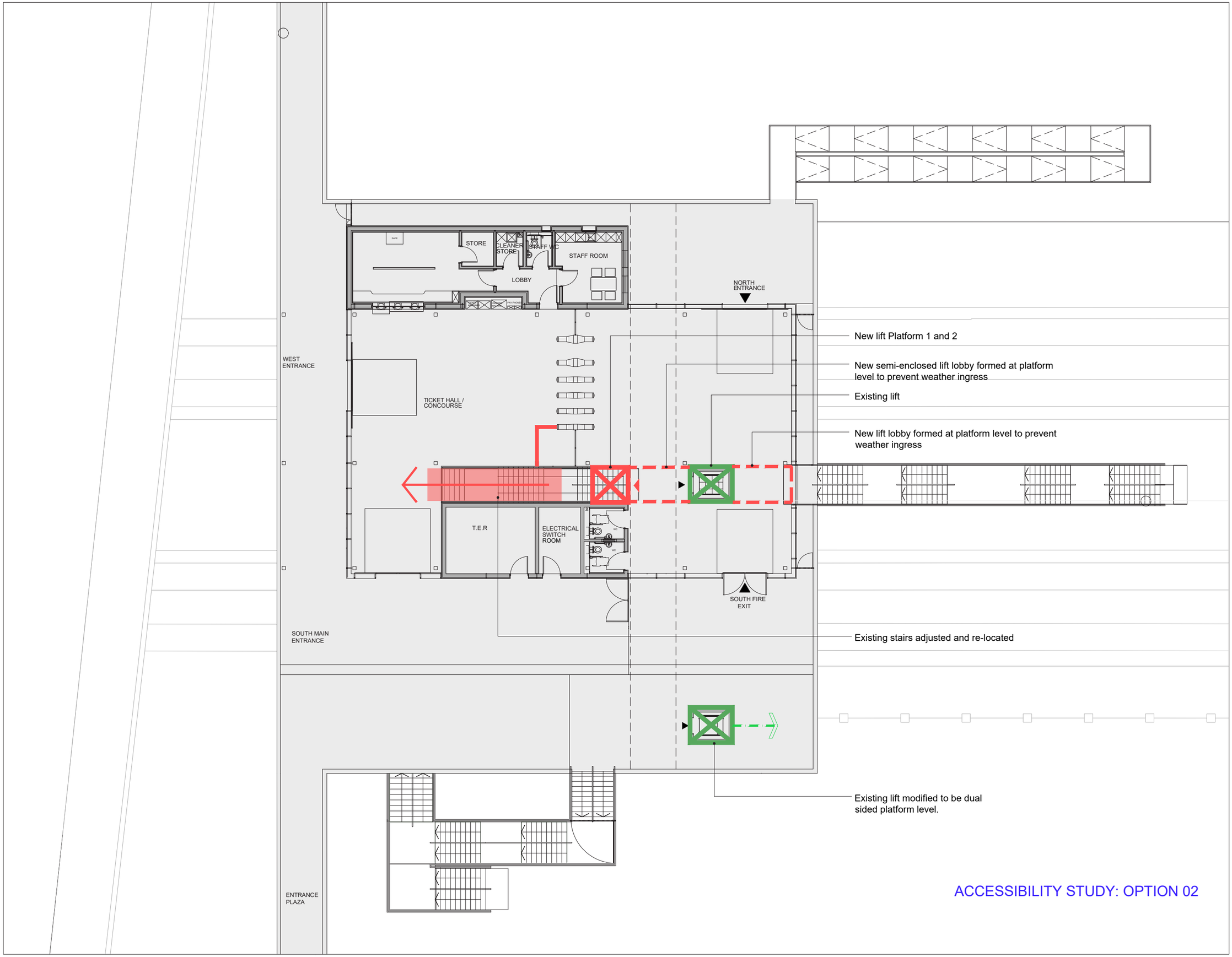

ACCESSIBILITY STUDY: OPTION 02

Rev	Date	Comment
C	-	-
B	26.04.2021	Lift to Platform 3 omitted
A	23.04.2021	General Update

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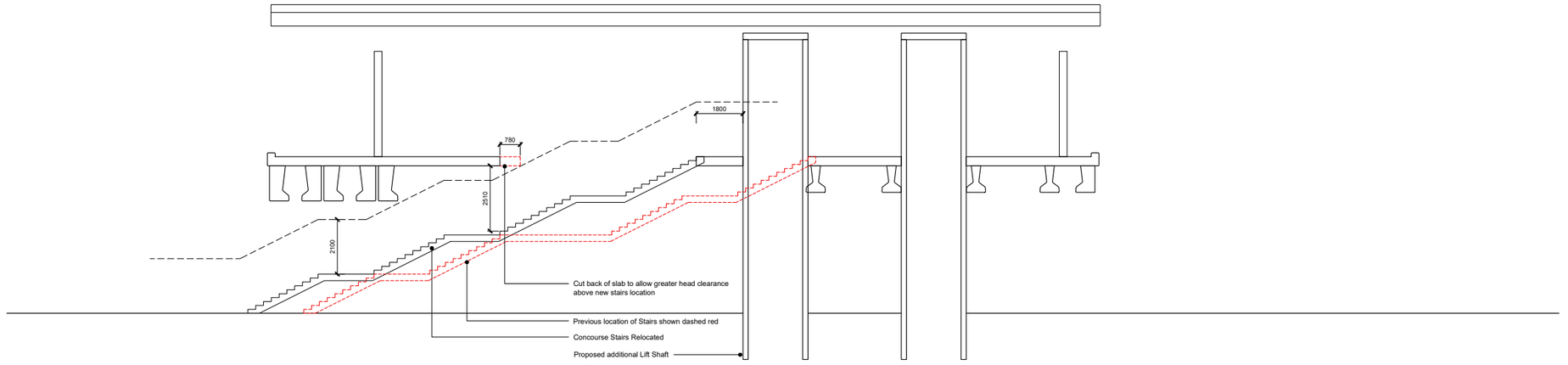
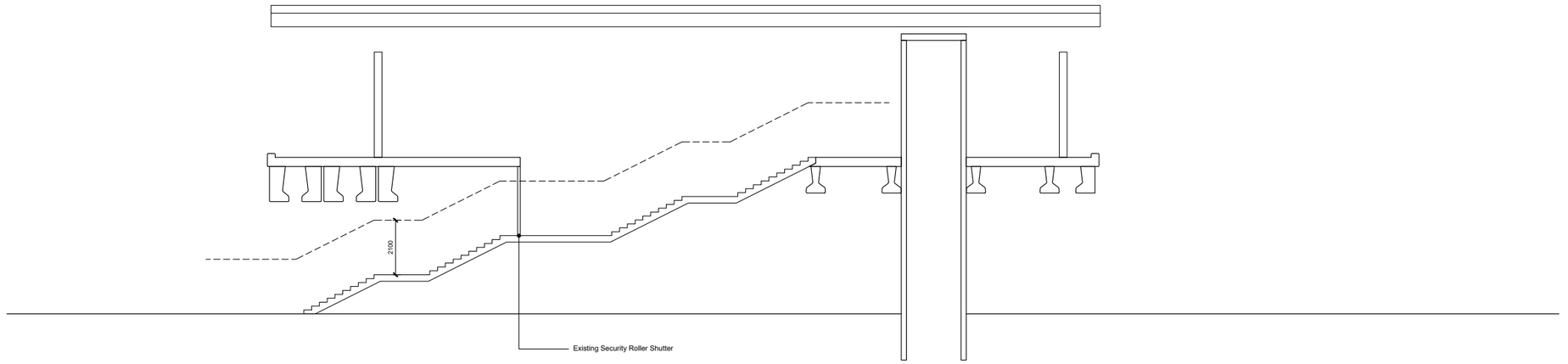
Drawing title
ACCESSIBILITY OPTIONS APPRAISAL
ACCESSIBILITY STUDY OPTION 02

Drawn	Date	Scale
NC	13.04.21	1.100

Drawing number: 2101_SK_101
Revision: B



PROPOSED SECTION CONCOURSE STAIRS 1.100



EXISTING SECTION CONCOURSE STAIRS 1.100

GENERAL NOTES

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LEGEND

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A	-	-

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Drawing title
EXISTING
PLATFORM LEVEL PLAN

Drawn	Date	Scale
RG	22.04.2021	1.100

Drawing number: 2101_SK_250
Revision: -

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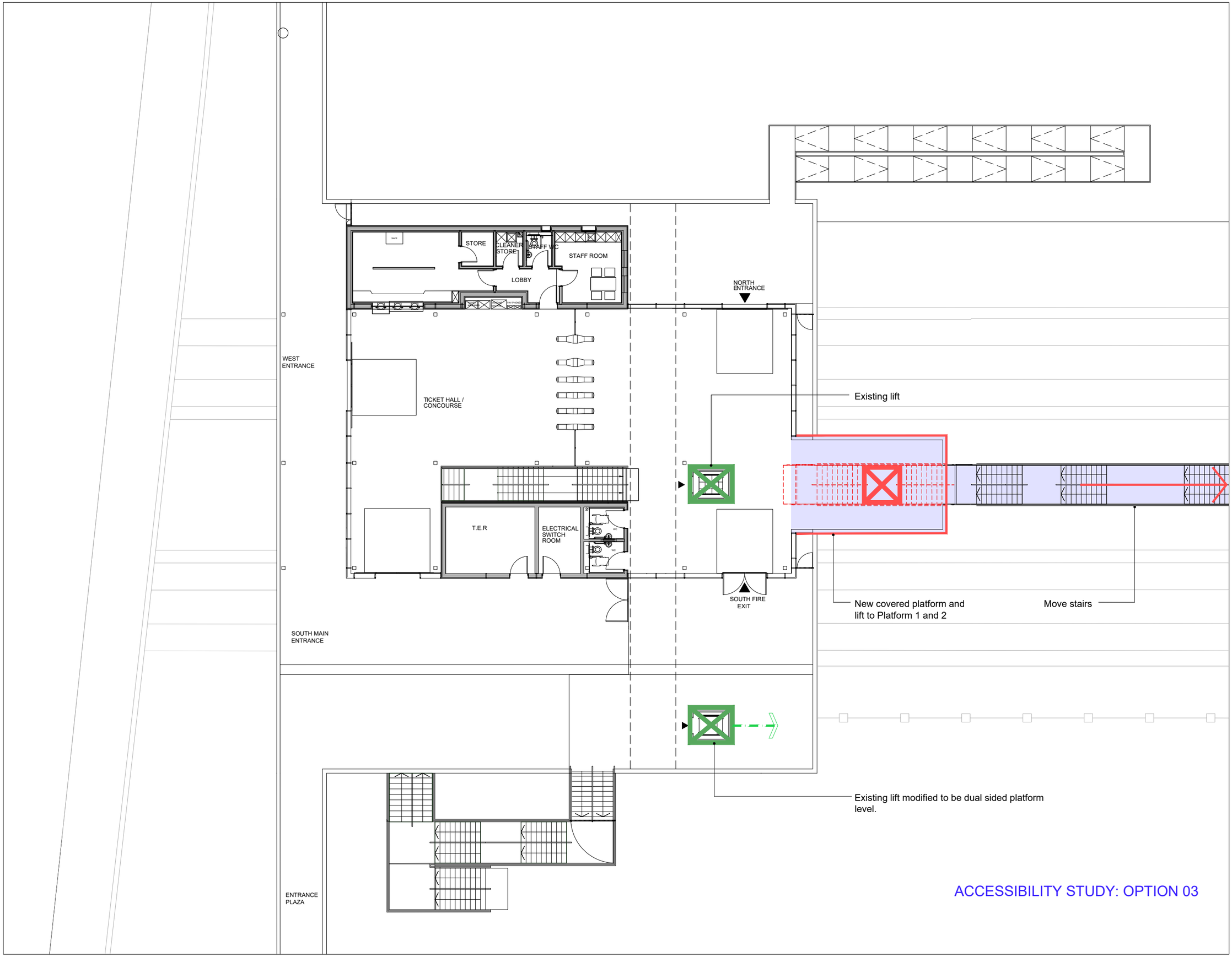

ACCESSIBILITY STUDY: OPTION 03

Rev	Date	Comment
C	-	-
B	-	-
A	26.04.2021	Lift to Platform 3 omitted

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Drawing title
ACCESSIBILITY OPTIONS APPRAISAL
ACCESSIBILITY OPTION 03

Drawn	Date	Scale
NC	14.04.21	1.100

Drawing number: 2101_SK_102

Revision: A

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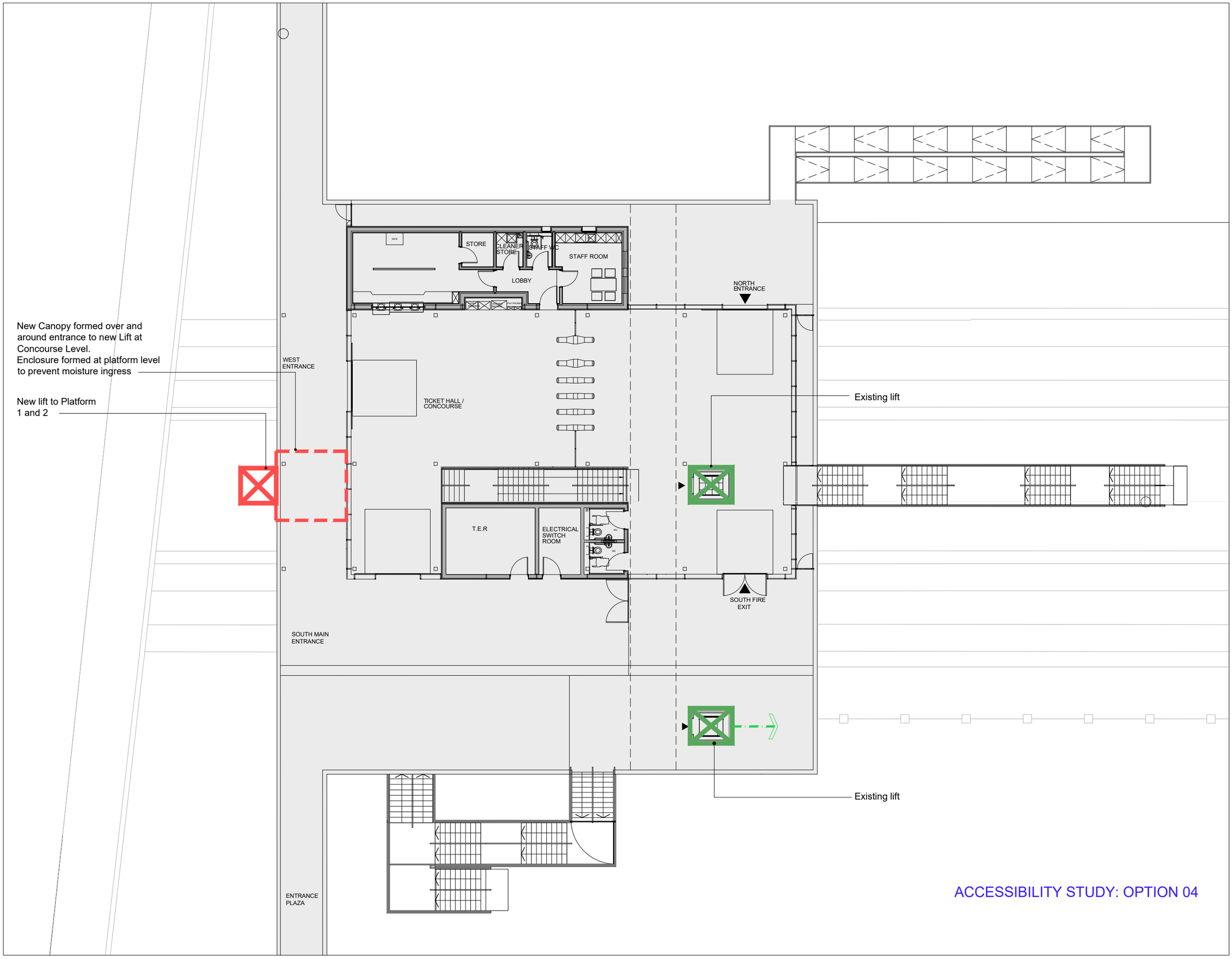

ACCESSIBILITY STUDY: OPTION 04

Rev	Date	Comment
C	-	-
B	26.04.2021	Lift to Platform 3 omitted
A	23.04.2021	Canopy Added to new Lift

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Drawing title
ACCESSIBILITY OPTIONS APPRAISAL
ACCESSIBILITY STUDY OPTION 04

Drawn	Date	Scale
NC	14.04.21	1.100

Drawing number
2101_SK_103

Revision
B

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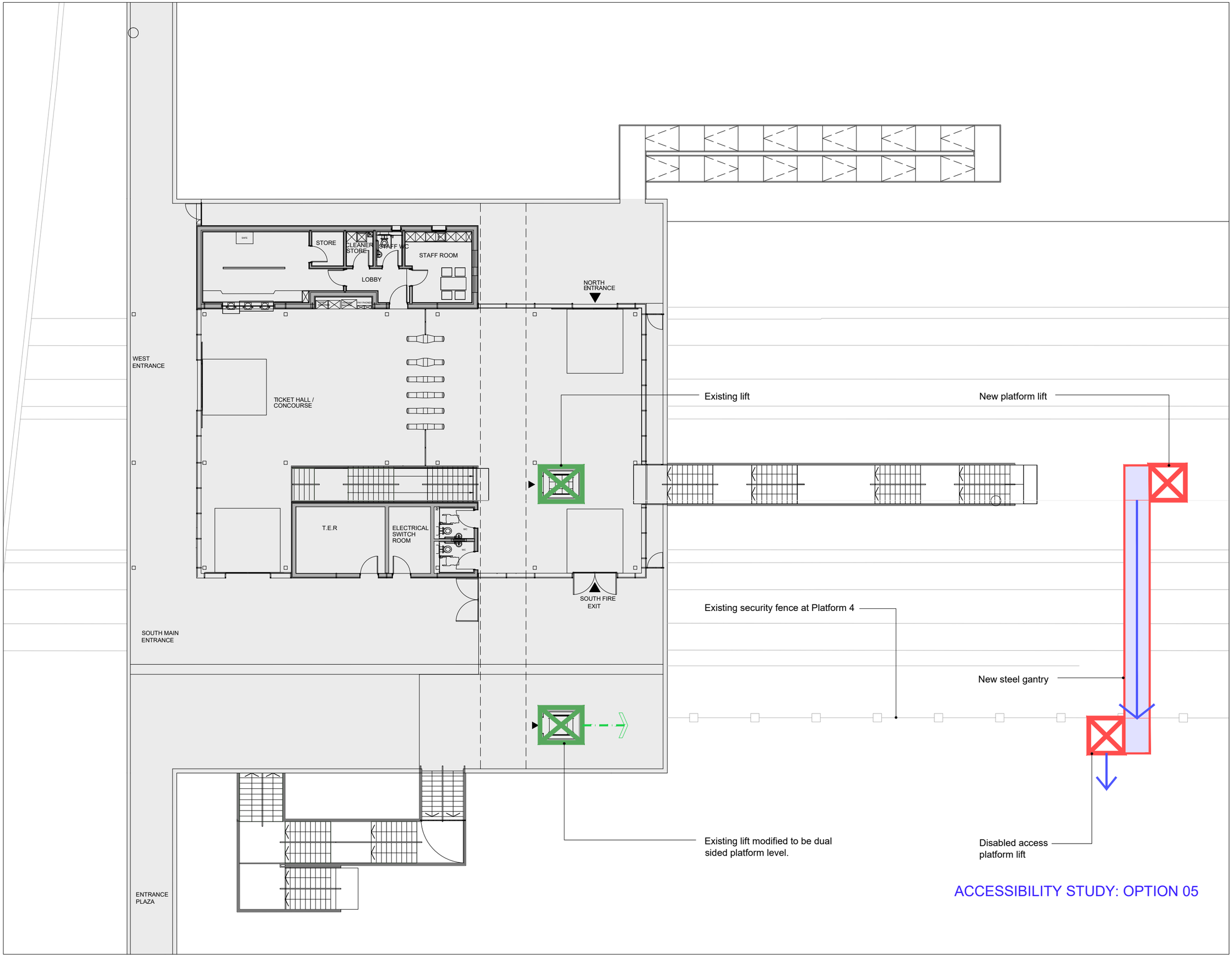

ACCESSIBILITY STUDY: OPTION 05

Rev	Date	Comment
C	-	-
B	-	-
A	26.04.2021	Lift to Platform 3 omitted

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Drawing title
ACCESSIBILITY OPTIONS APPRAISAL
ACCESSIBILITY STUDY OPTION 05

Drawn	Date	Scale
NC	14.04.21	1.100

Drawing number: 2101_SK_104
Revision: A

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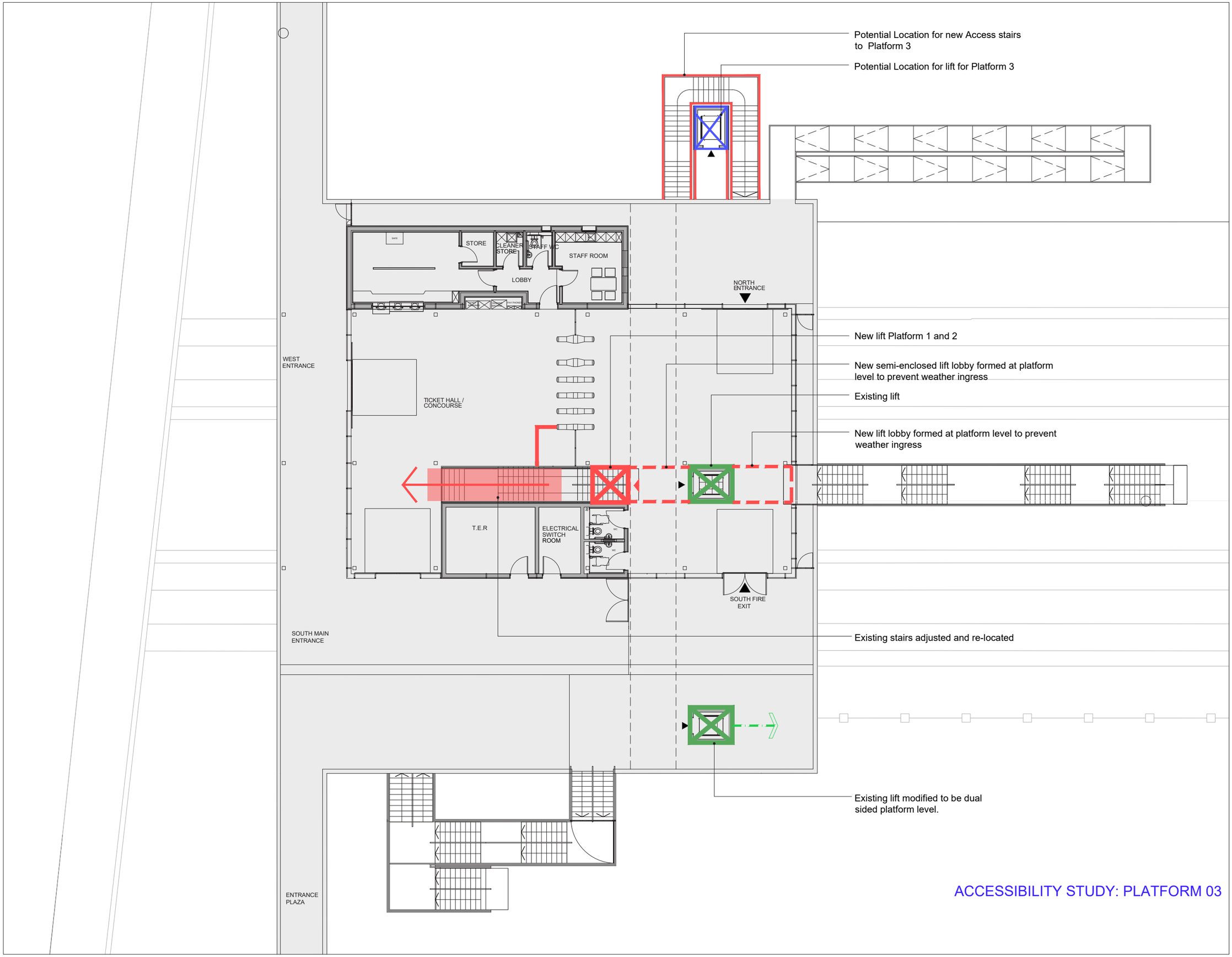

ACCESSIBILITY STUDY: PLATFORM 03

Rev	Date	Comment
C	-	-
B	-	-
A	20.05.2021	Revised to show platform 3 stairs

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Drawing title
ACCESSIBILITY OPTIONS APPRAISAL
ACCESSIBILITY STUDY PLATFORM 03

Drawn	Date	Scale
NC	18.05.21	1.100

Drawing number: 2101_SK_105

Revision: A

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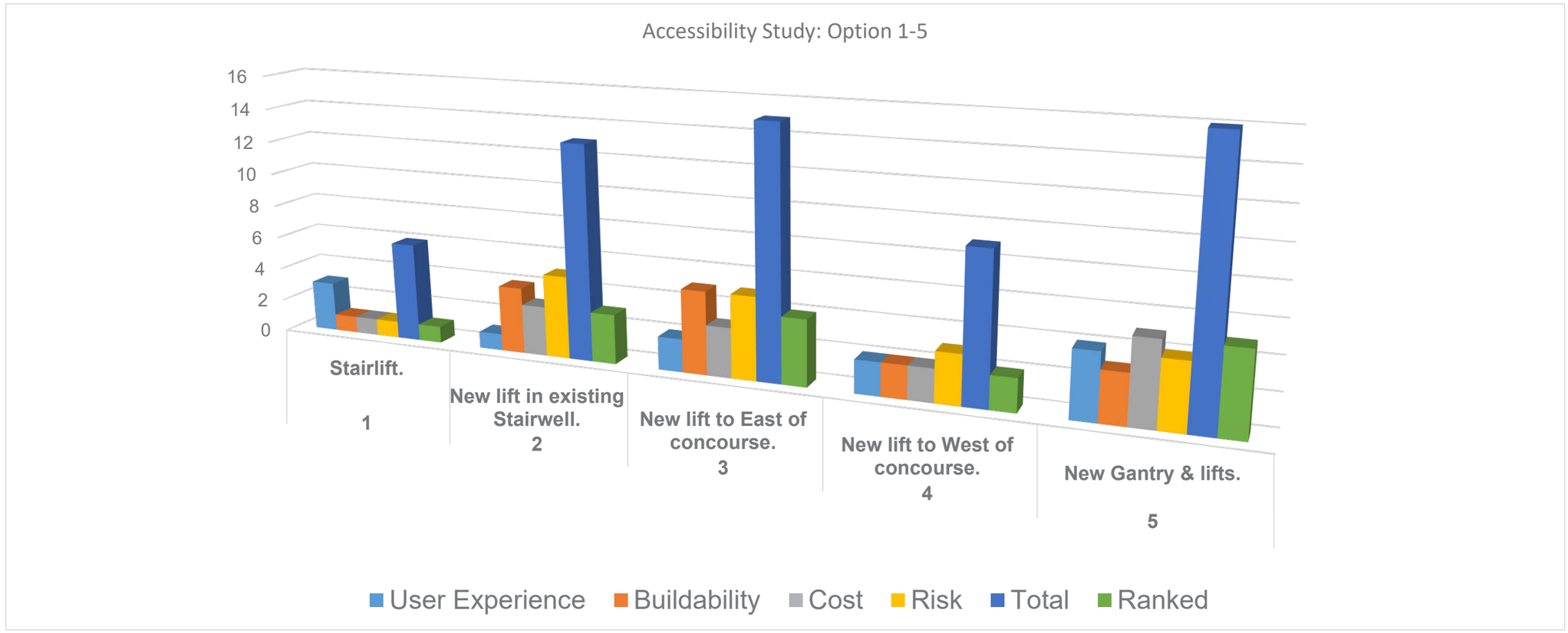
Accessibility Option Study
2101: Kishogue Station Opening

Issue 001 - 14.04.2021

Option	Description	User Experience	Buildability	Cost	Risk	Total	Ranked
1	Stairlift.	3	1	1	1	6	**1**
2	New lift in existing Stairwell.	1	4	3	5	13	**3**
3	New lift to East of concourse.	2	5	3	5	15	**4**
4	New lift to West of concourse.	2	2	2	3	9	**2**
5	New Gantry & lifts.	4	3	5	4	16	**5**



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PLATFORM 3

PLATFORM 2

PLATFORM 1

PLATFORM 4

Access to Platform 4 closed off with new Security Fence

New Blockwork wall

Lift Shaft broken out to provide 2 way Lift; Lift Access from Concourse Level

Lift Access to Concourse Level from Car Park

New Access Stairs Provided to Platform 04

New Security Fence provided

Existing Flight to Stairs Removed

Rev	Date	Comment
C	-	-
B	-	-
A	-	-

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Drawing title
PLATFORM 04 ACCESS STAIRS
PLATFORM LEVEL PLAN

Drawn	Date	Scale
RG	09.04.21	1.100

Drawing number
2101_SK_140

Revision
-

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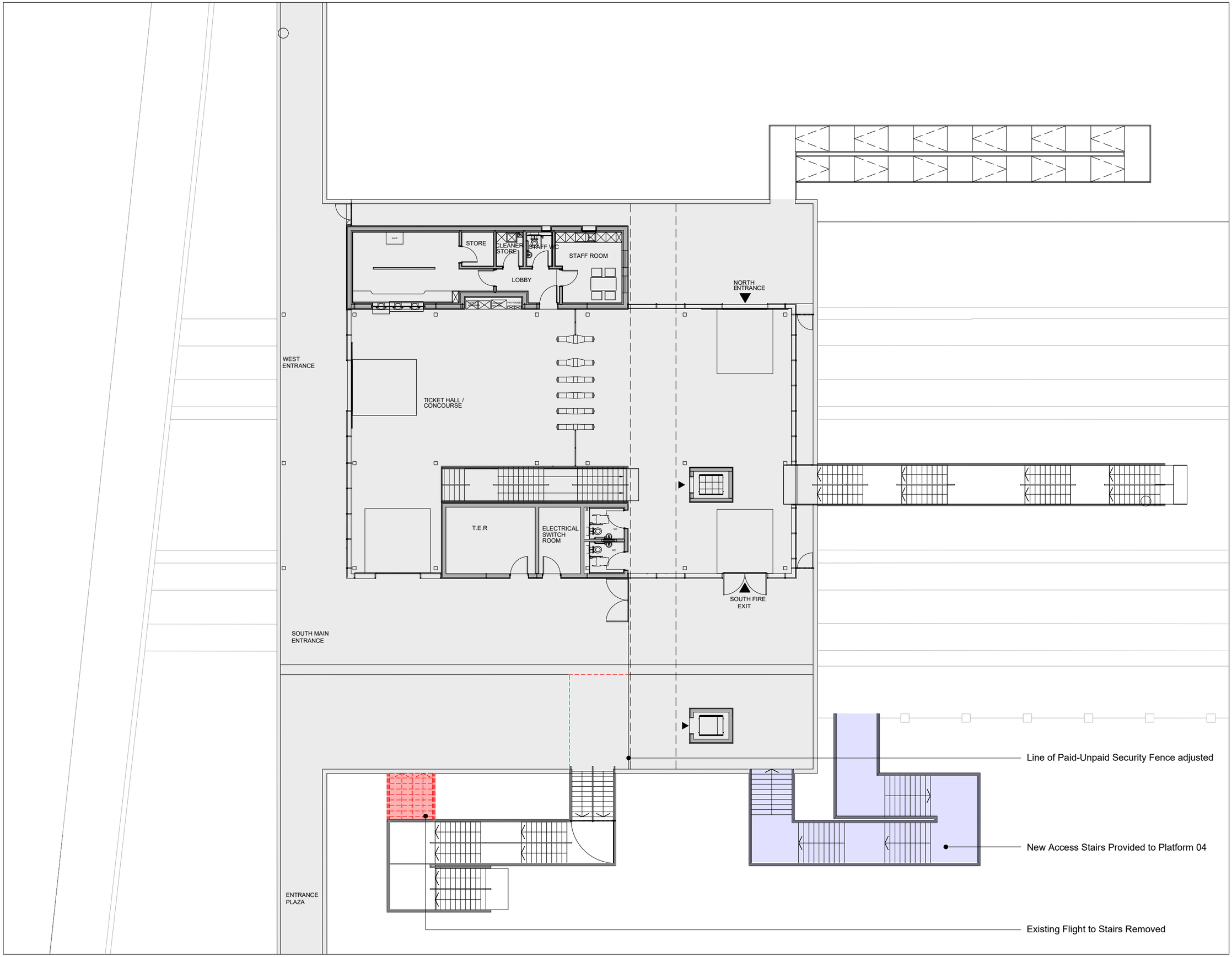

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B	-	-
A	-	-

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Project
Kishogue Train Station

Drawing title
PLATFORM 04 ACCESS STAIRS
CONCOURSE LEVEL PLAN

Drawn	Date	Scale
NC	09.04.21	1.100

Drawing number
2101_SK_141

Revision
-

GENERAL NOTES

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PLATFORM 3

PLATFORM 2

PLATFORM 1

PLATFORM 4

Access to Platform 4 closed off with new Security Fence

New demand controlled access gate to security fence

Existing Access gate to be removed shown dashed red

New Access Stairs Provided to Platform 04

New Security Fence provided

Existing Flight to Stairs Removed

Rev	Date	Comment
C	-	-
B	20.05.2021	Existing Access Gate removed
A	22.04.2021	Issued for comment

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Project
Kishoge Train Station

Drawing title
PLATFORM 04 ACCESS STAIRS
PLATFORM LEVEL PLAN
OPTION 2

Drawn	Date	Scale
RG	09.04.21	1.100

Drawing number
2101_SK_145

Revision
B

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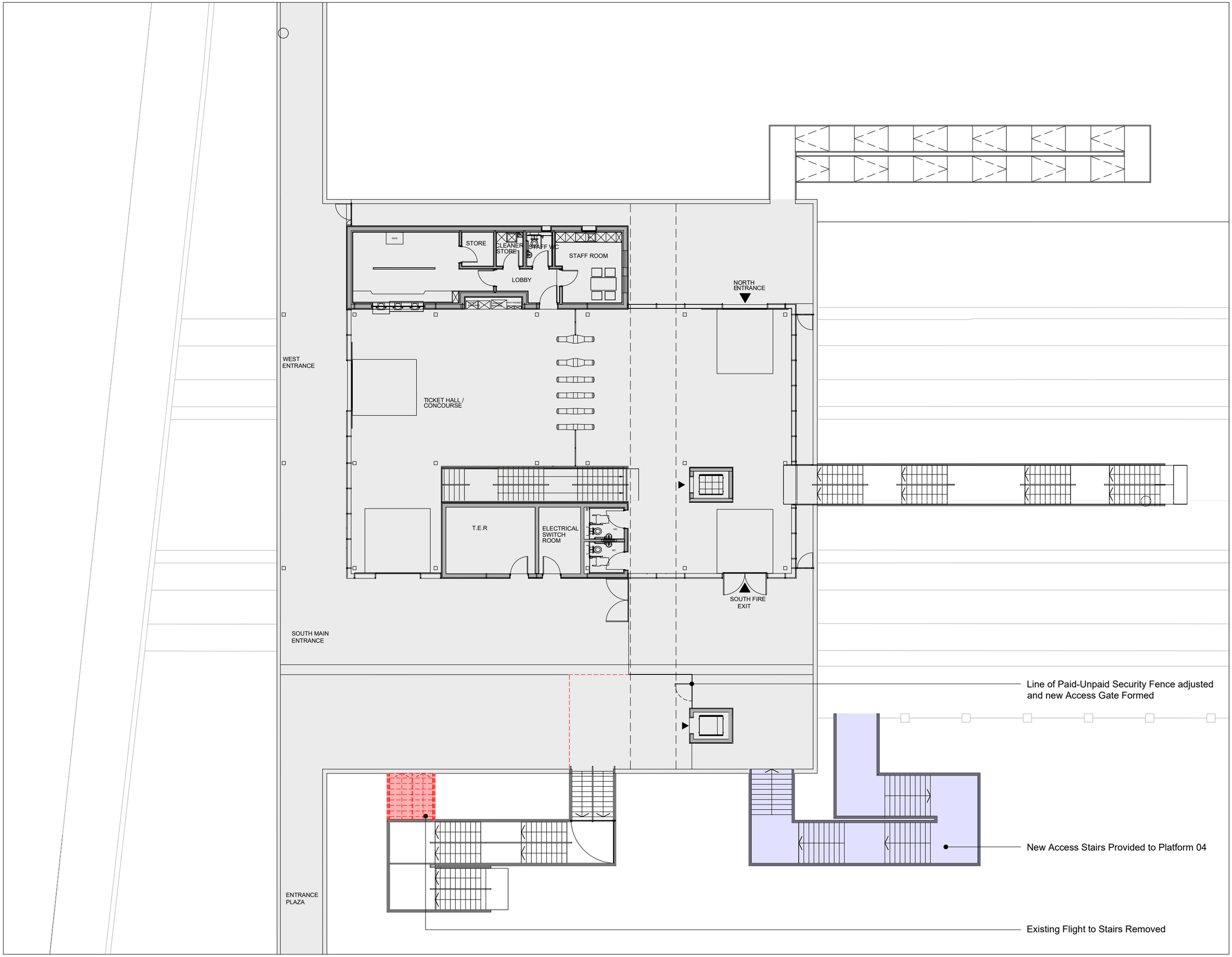

Rev	Date	Comment
C	-	-
B	-	-
A	26.04.2021	Access Gate added

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Drawing title
PLATFORM 04 ACCESS STAIRS
CONCOURSE LEVEL PLAN

Drawn	Date	Scale
RG	22.04.2021	1.100

Drawing number
2101_SK_146

Revision
A

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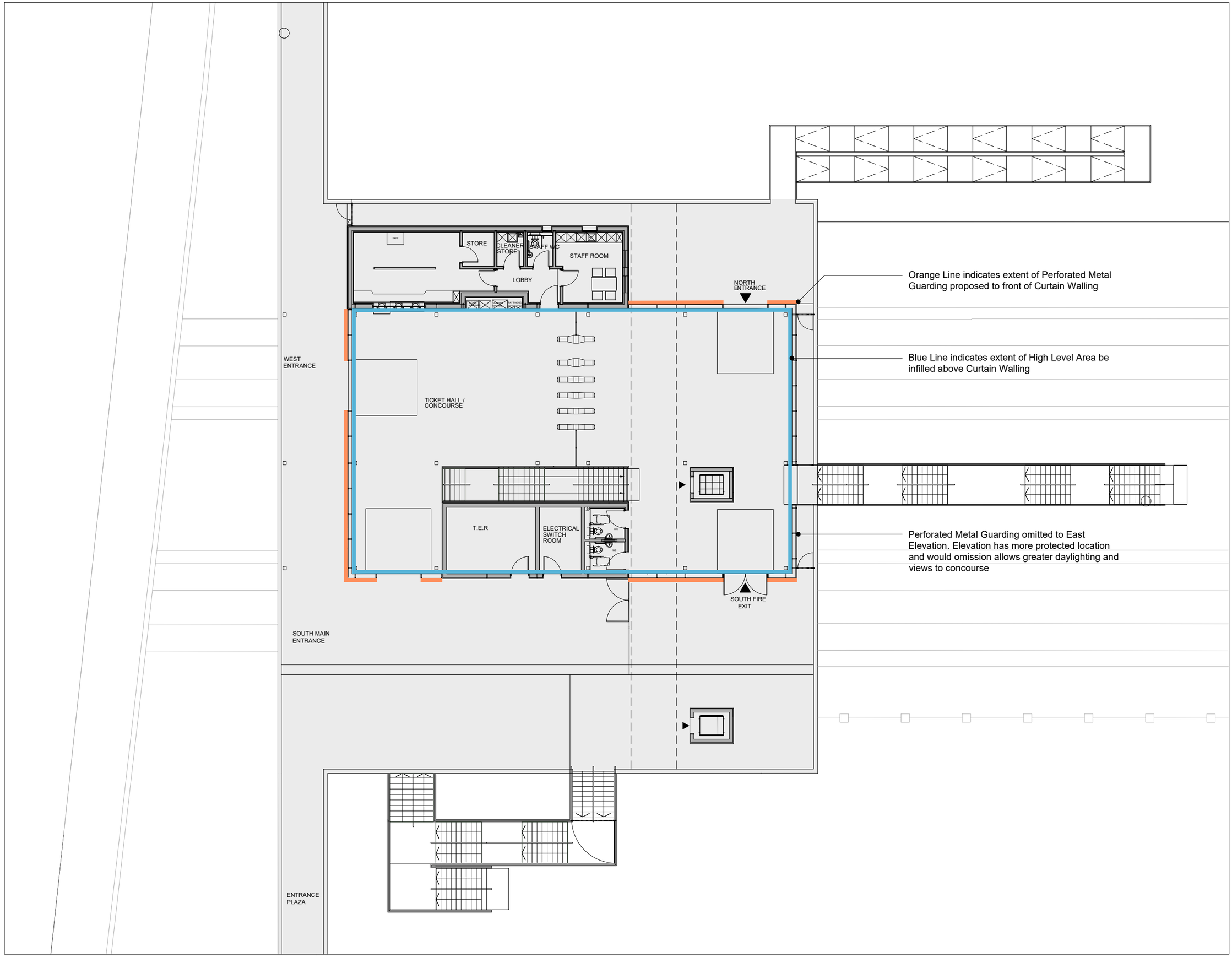
LEGEND

- Extent of Perforated Metal Guarding proposed to front of Curtain Walling
- Extent of High Level Area be infilled above Curtain Walling



Orange Line indicates extent of Perforated Metal Guarding proposed to front of Curtain Walling

Blue Line indicates extent of High Level Area be infilled above Curtain Walling

Perforated Metal Guarding omitted to East Elevation. Elevation has more protected location and would omission allows greater daylighting and views to concourse

Rev	Date	Comment
C	-	-
B	-	-
A	-	-

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Drawing title
ELEVATION TREATMENT SCOPING
CONCOURSE LEVEL PLAN

Drawn	Date	Scale
RG	15.04.2021	1.100

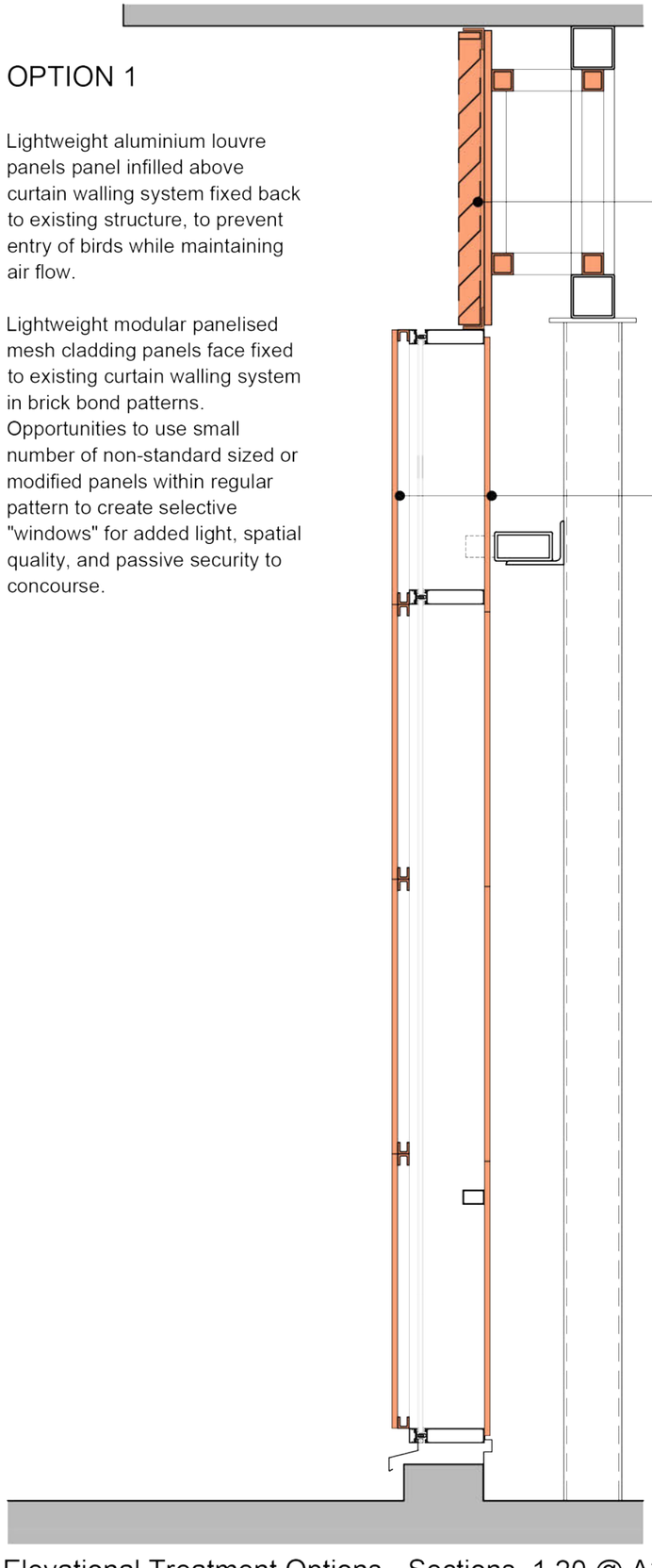
Drawing number
2101_SK_130

Revision
-

OPTION 1

Lightweight aluminium louvre panels panel infilled above curtain walling system fixed back to existing structure, to prevent entry of birds while maintaining air flow.

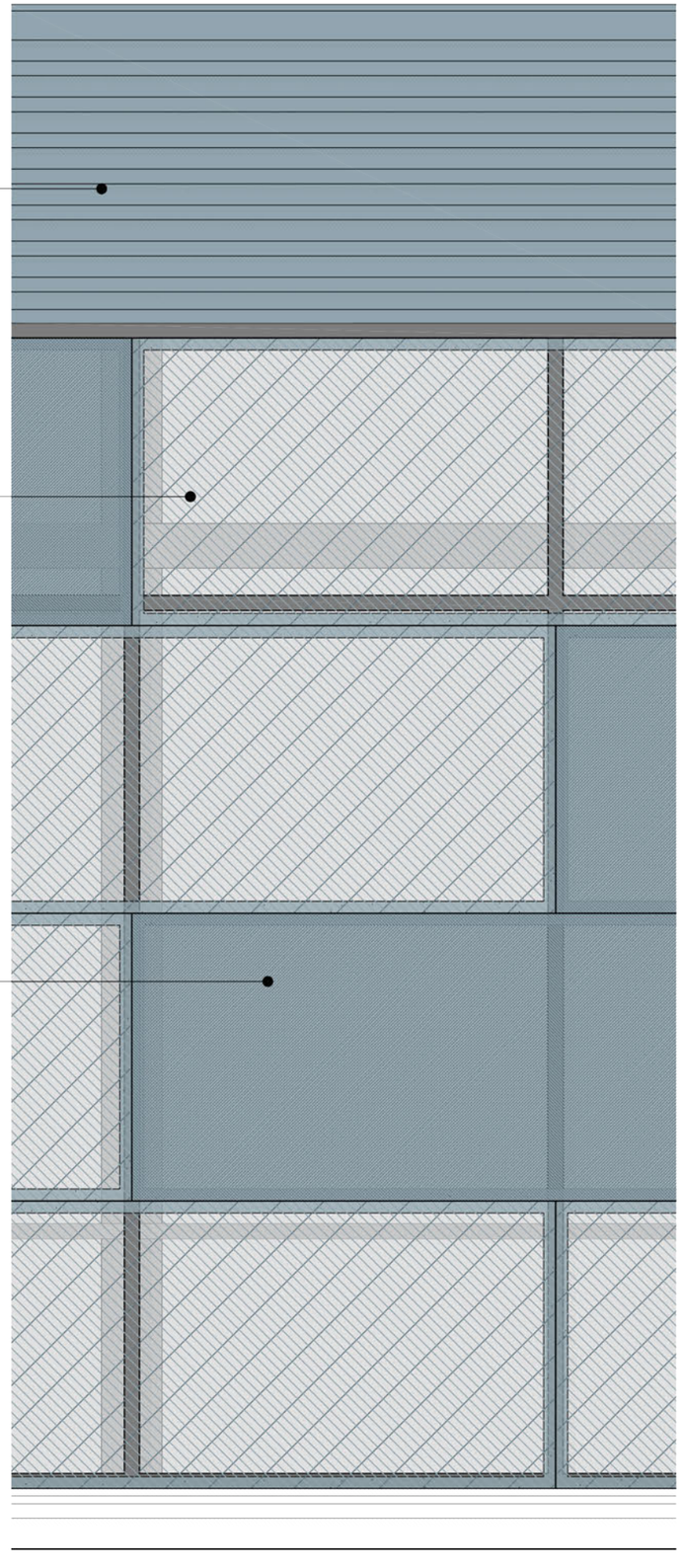
Lightweight modular panelised mesh cladding panels face fixed to existing curtain walling system in brick bond patterns. Opportunities to use small number of non-standard sized or modified panels within regular pattern to create selective "windows" for added light, spatial quality, and passive security to concourse.



New Louvred panels

New Lightweight Modular Mesh Cladding Panels

Solid, perforated, or heavier gauge mesh panels to be introduced in patterns within overall cladding



Elevational Treatment Options - Sections 1.20 @ A3

GENERAL NOTES

Rev.	Date	Comment
C	26.04.2021	General Update
B	23.04.2021	General Update
A	12.04.2021	General Update

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Project
Kishogue Train Station

Drawing title
Elevation Treatment
Option 01

Drawn	Date	Scale
RG	06.04.2021	1.20

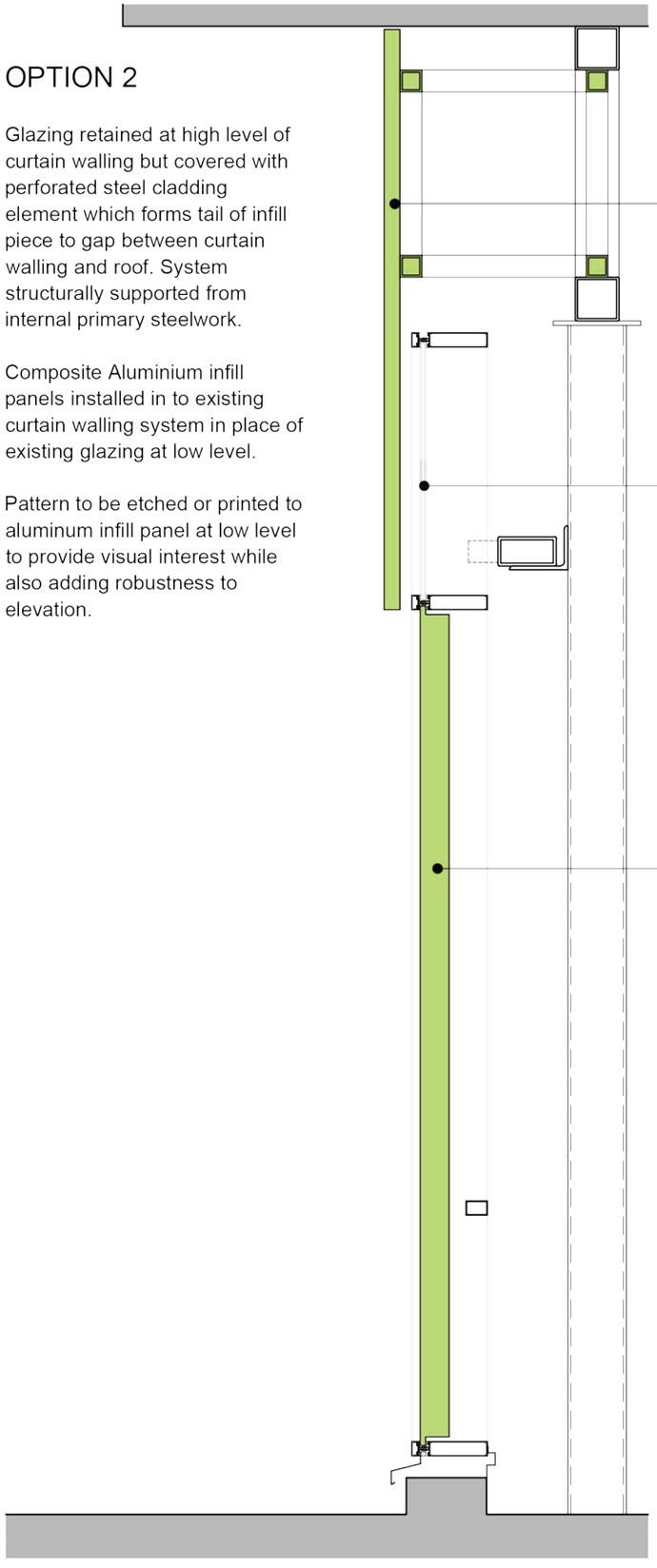
Drawing number: 2101_SK_700
Revision: C

OPTION 2

Glazing retained at high level of curtain walling but covered with perforated steel cladding element which forms tail of infill piece to gap between curtain walling and roof. System structurally supported from internal primary steelwork.

Composite Aluminium infill panels installed in to existing curtain walling system in place of existing glazing at low level.

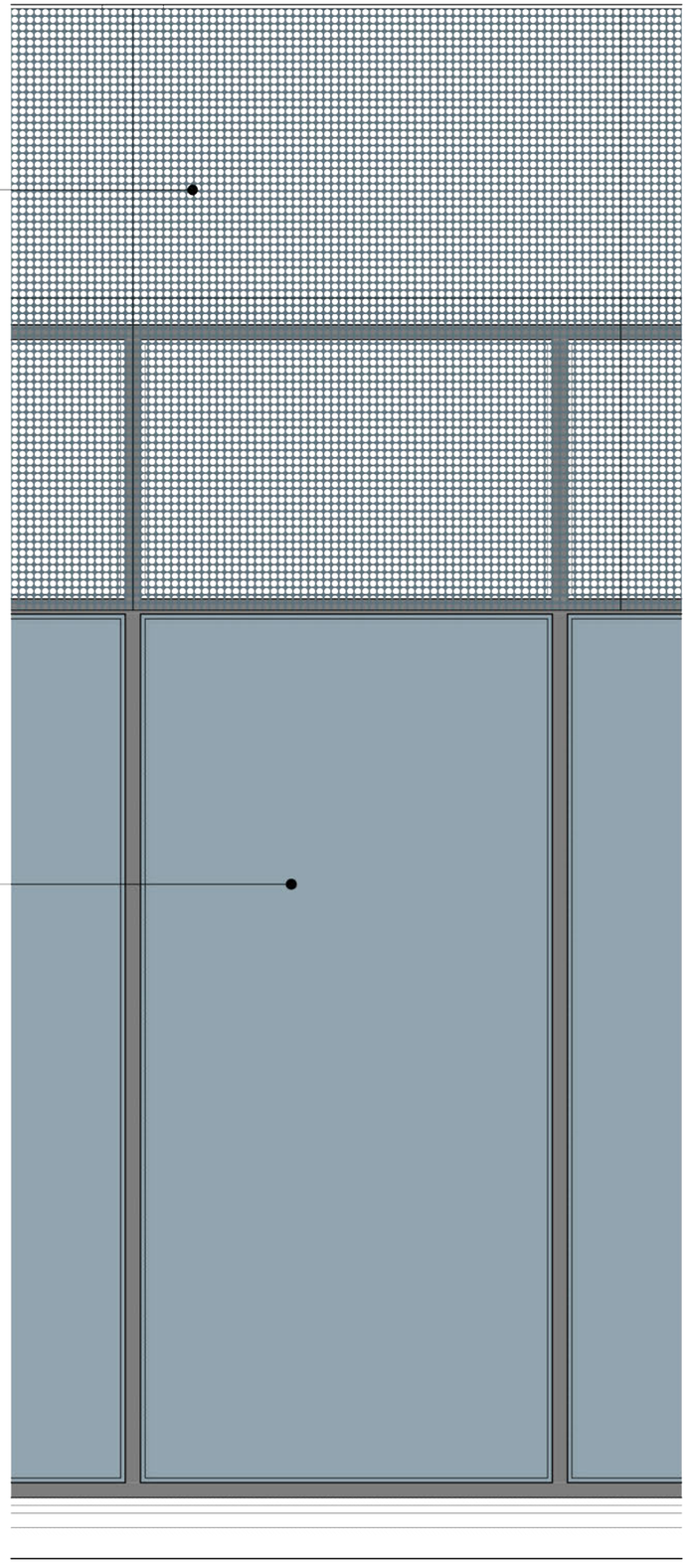
Pattern to be etched or printed to aluminum infill panel at low level to provide visual interest while also adding robustness to elevation.



New Perforated Steel Panels

Glazing retained to upper portion of Curtain Walling, protected by new Cladding

New Aluminium Infill Panels to replace glazing to curtain walling frames



Elevational Treatment Options - Sections 1.20 @ A3

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Rev	Date	Comment
C	26.04.2021	General Update
B	23.04.2021	General Update
A	12.04.2021	General Update

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Project
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Drawing title
Elevation Treatment
Option 02

Drawn	Date	Scale
RG	06.04.2021	1.20

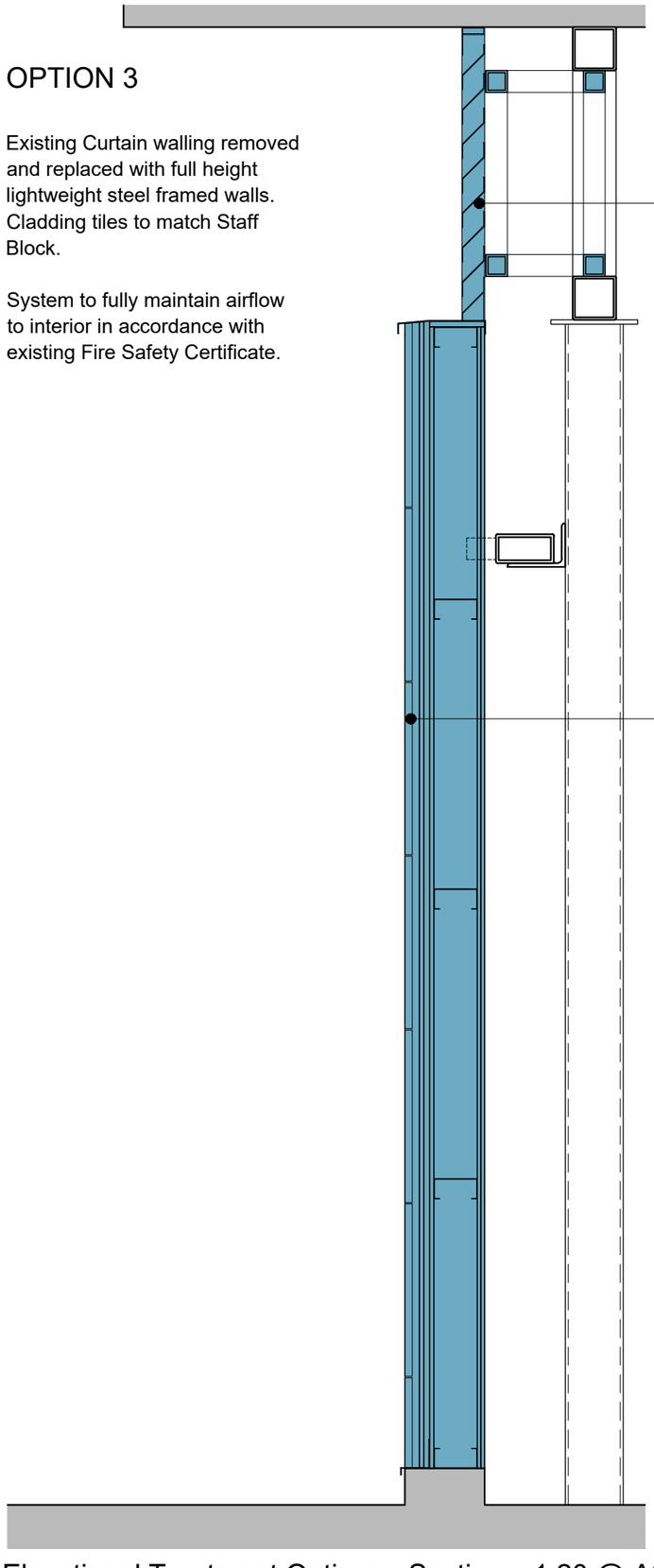
Drawing number
2101_SK_701

Revision
C

OPTION 3

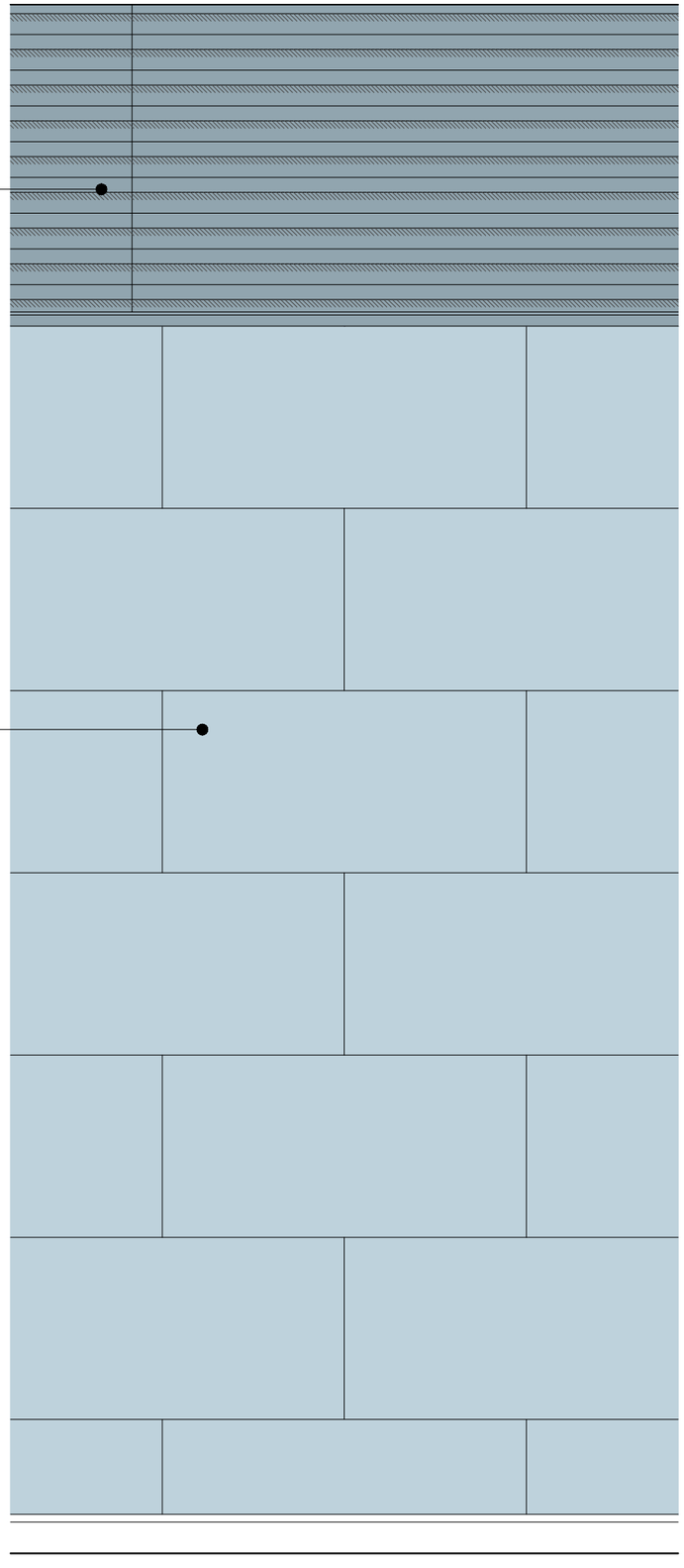
Existing Curtain walling removed and replaced with full height lightweight steel framed walls. Cladding tiles to match Staff Block.

System to fully maintain airflow to interior in accordance with existing Fire Safety Certificate.



New Louvred panels

Remove Curtain Wall Glazing system and replace with Steel Frame Partition System Clad with Stone Tiles



Elevational Treatment Options - Sections 1.20 @ A3

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C	26.04.2021	General Update
B	23.04.2021	General Update
A	12.04.2021	General Update

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Project
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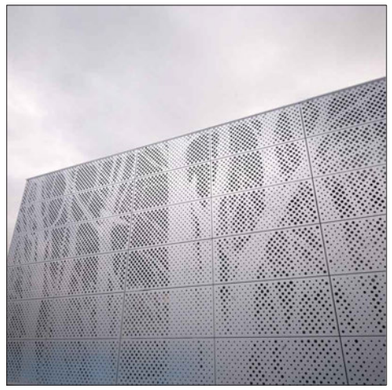
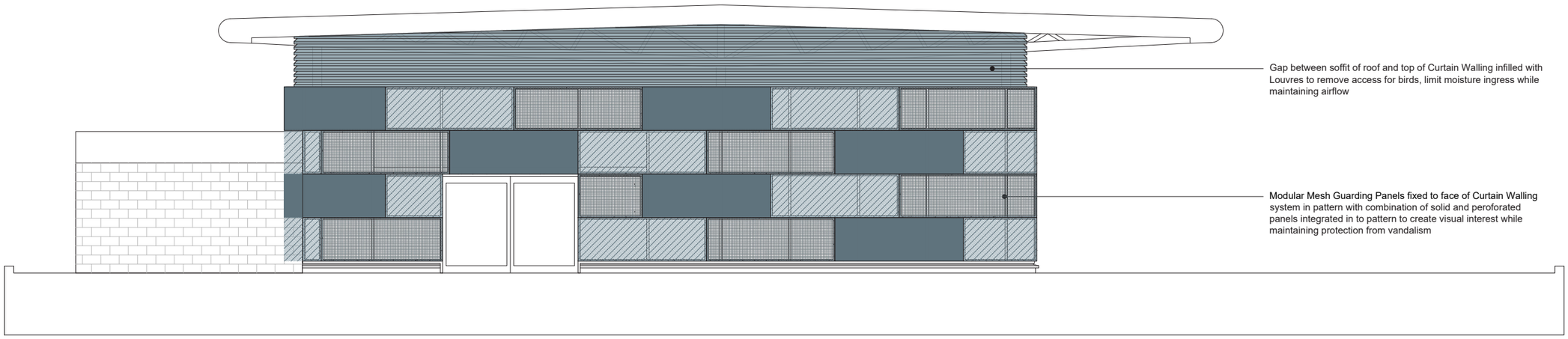
Drawing title
Elevation Treatment
Option 03

Drawn	Date	Scale
RG	06.04.2021	1.20

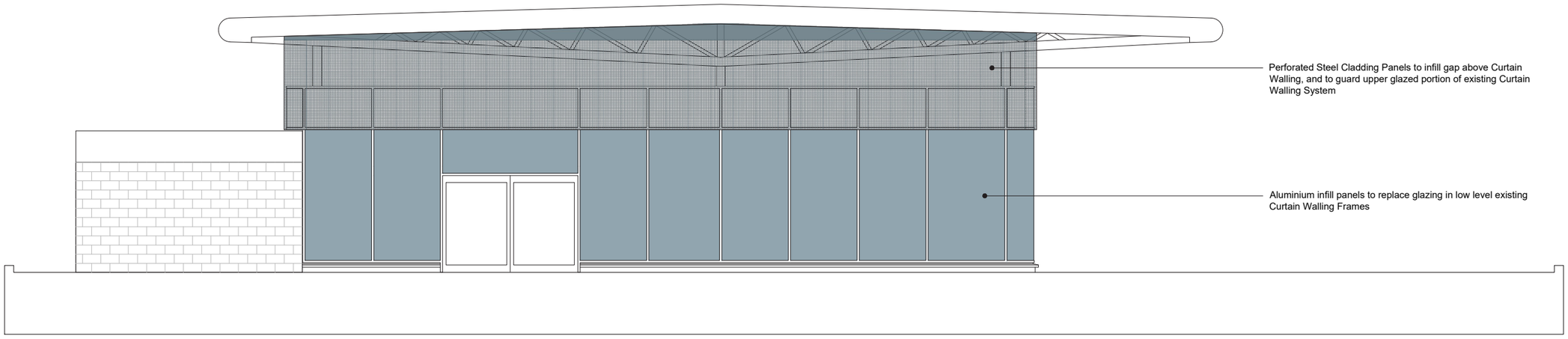
Drawing number
2101_SK_702

Revision
C

PROPOSED WEST ELEVATION - OPTION 01



PROPOSED WEST ELEVATION - OPTION 02

GENERAL NOTES

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Rev	Date	Comment
C	-	-
B	-	-
A	26.04.2021	General Update

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Drawing title
PROPOSED ELEVATIONS
WEST AND NORTH ELEVATIONS
OPTION 01

Drawn	Date	Scale
RG	09.04.21	1.50

Drawing number: 2101_SK_200
Revision: A

GENERAL NOTES

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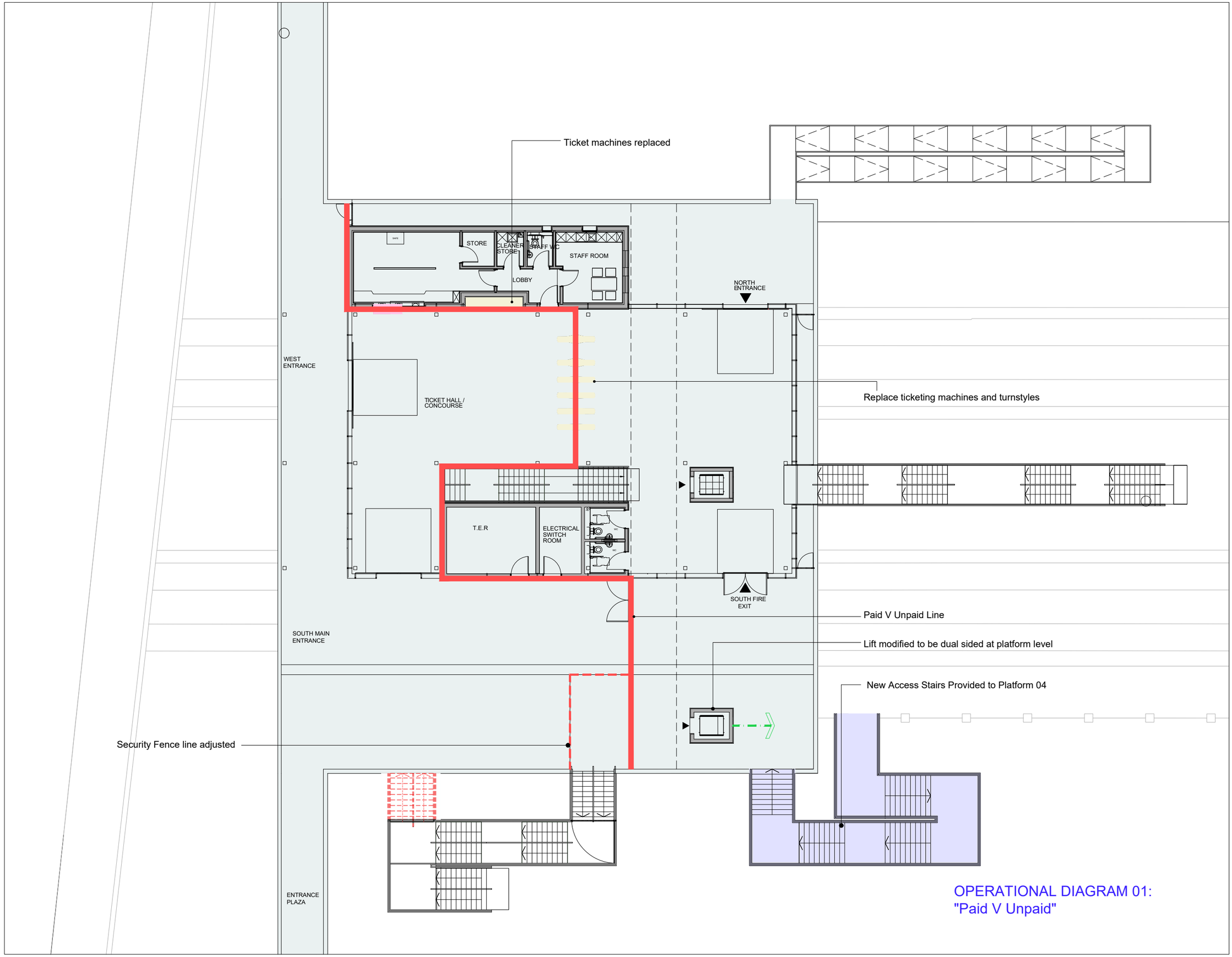

OPERATIONAL DIAGRAM 01:
"Paid V Unpaid"

Rev	Date	Comment
C	-	-
B	-	-
A	05.05.2021	General Update

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Project
Kishoge Train Station

Drawing title
OPERATIONAL DIAGRAM 01

Drawn	Date	Scale
NC	14.04.21	1.100

Drawing number
2101_SK_150

Revision
A

GENERAL NOTES

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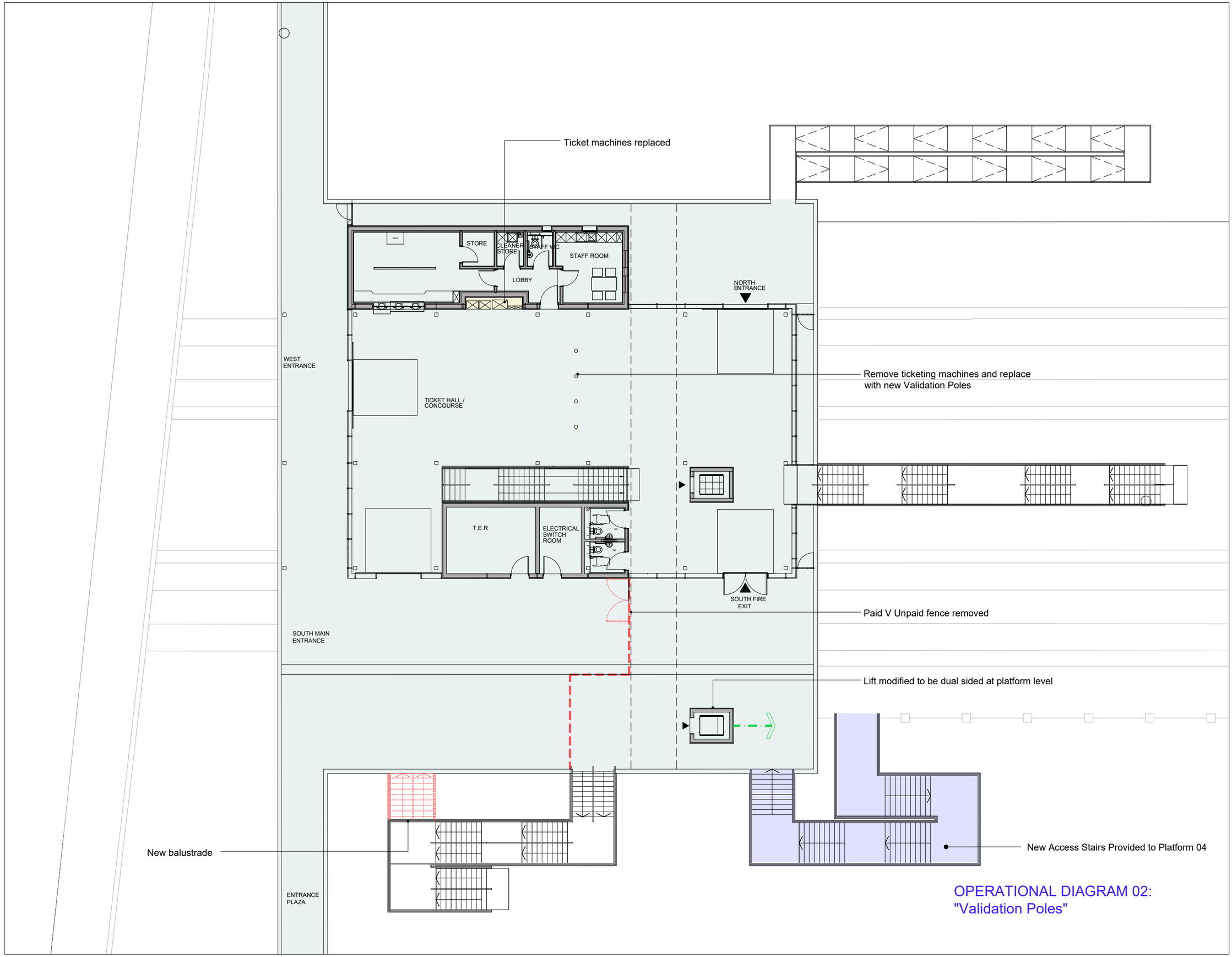

OPERATIONAL DIAGRAM 02:
"Validation Poles"

Rev	Date	Comment
C	-	-
B	-	-
A	05.05.2021	General Update

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Drawing title
OPERATIONAL DIAGRAM 02

Drawn	Date	Scale
NC	14.04.21	1.100

Drawing number
2101_SK_151

Revision
A

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LEGEND

New paving/nosings

PLATFORM 3

PLATFORM 2

PLATFORM 1

PLATFORM 4

New tactile paving

New colour contrast nosings

Resurface Platform 4

Remove existing continuous kerbs. New dished kerbing, make good affected finishes

Rev	Date	Comment
C	-	-
B	-	-
A	26.04.2021	General Update

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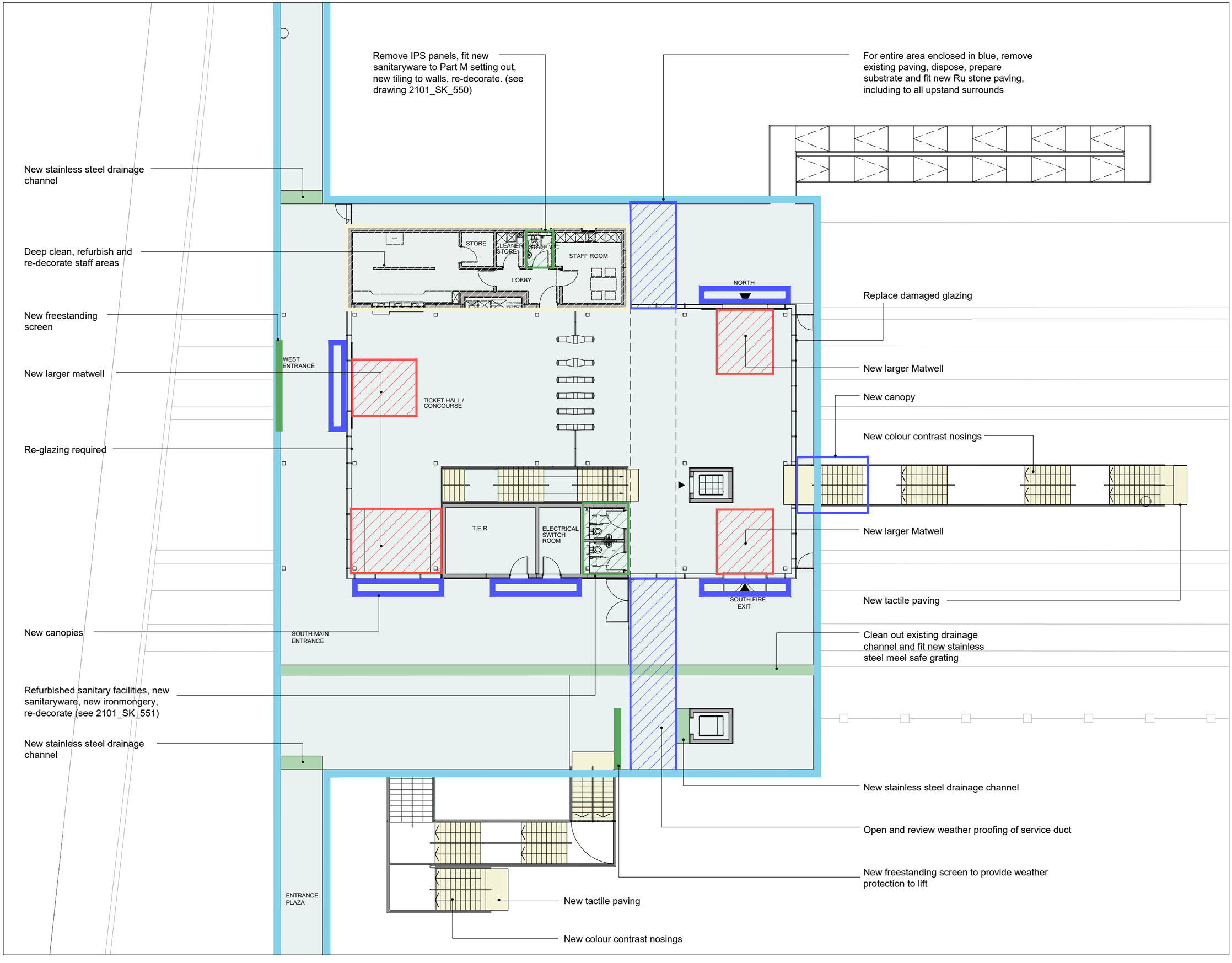
Kishogue Train Station

Drawing title
BASE BUILD WORKS
BUILDING FABRIC PLATFORM LEVEL

Drawn	Date	Scale
NC	26.04.21	1.100

Drawing number: 2101_SK_500
Revision: A



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LEGEND

- Area enclosed in Blue to have existing paving stripped back, deck prepped and new paving (R11) throughout, including upstands.
- New Matwell
- Weather proofing to service duct
- New paving/nosings
- New drainage channel

NOTE:

Full intensive power clean and general de-fouling work required before any strip out or demolitions works allowed
Full internal and external power washing required (all surfaces)
All surfaces to be treated with detergent, washed down and brushed clean
New shelters, bins and furniture to all platforms.

Rev	Date	Comment
C	-	-
B	-	-
A	26.04.2021	General Update

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Project
Kishogue Train Station

Drawing title
BASE BUILD WORKS
BUILDING FABRIC CONCOURSE LEVEL

Drawn	Date	Scale
NC	26.04.21	1.100

Drawing number: 2101_SK_501
Revision: A

All areas lined blue, to be stripped back, prepped and re-decorated

PLATFORM 3

PLATFORM 2

PLATFORM 1

New stainless steel balustrades here to match existing

PLATFORM 4

All areas lined Red, to receive specialist clear and polish of stainless steel balustrades

GENERAL NOTES

LEGEND

- Areas to receive specialist clean and polish of stainless steel balustrades
- Areas to be stripped back, prepped and re-decorated
- New stainless steel balustrades

NOTE:

Full intensive power clean and general de-fouling work required before any strip out or demolitions works allowed
Full internal and external power washing required (all surfaces)
All surfaces to be treated with detergent, washed down and brushed clean

Rev	Date	Comment
C	-	-
B	-	-
A	26.04.2021	General Update

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Project
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Drawing title
BASE BUILD WORKS
CLEAN AND DECORATE PLATFORM LEVEL

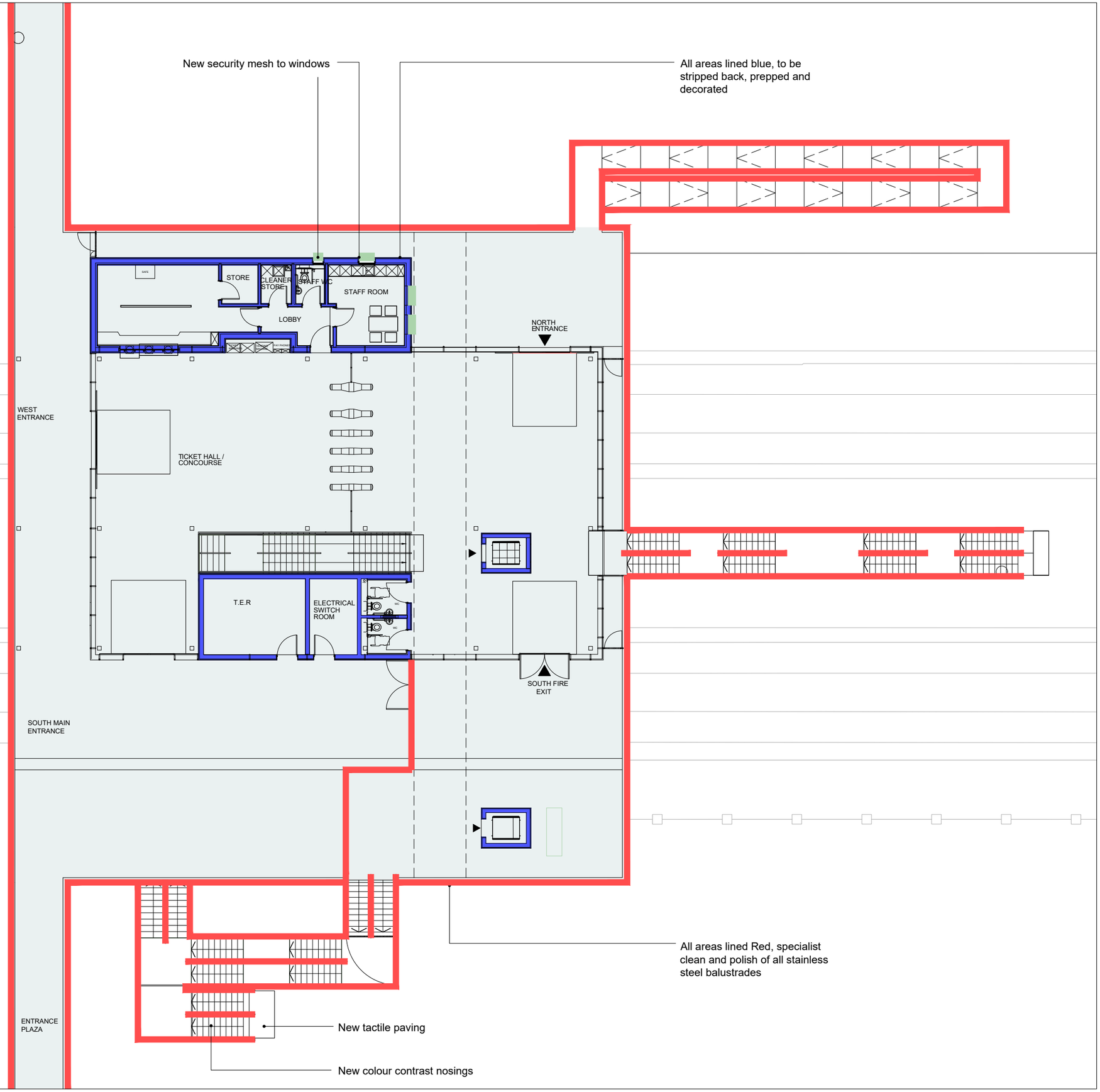
Drawn	Date	Scale
NC	26.04.21	1.100

Drawing number: 2101_SK_502
Revision: A

NOTE:

Full intensive power clean and general de-fouling work required before any strip out or demolitions works allowed.

Full internal and external power washing with detergent. All surfaces to be washed down and brushed clean.



GENERAL NOTES

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LEGEND

- Areas for specialist clean and polish of stainless steel balustrades
- Areas to be stripped back, prepped and re-decorated
- New security mesh

NOTE:

Full intensive power clean and general de-fouling work required before any strip out or demolitions works allowed
Full internal and external power washing required (all surfaces)
All surfaces to be treated with detergent, washed down and brushed clean

Rev	Date	Comment
C	-	-
B	-	-
A	26.04.2021	General Update

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Project
Kishogue Train Station

Drawing title
BASE BUILD WORKS
CONCOURSE LEVEL
CLEAN AND DECORATE

Drawn	Date	Scale
NC	26.04.21	1.100

Drawing number: 2101_SK_503
Revision: A

Area of IPS panel hatched orange, and associated grab rails require reinstatement. Condition generally appears to be reasonable.

Room could be brought significantly closer to compliance with TGD Part M 2000 by stripping out IPS panel, replacing WC with Closed Couple WC Pan

Finishes generally appear to be in reasonable condition.

Existing WC appears to be operational however deep clean required

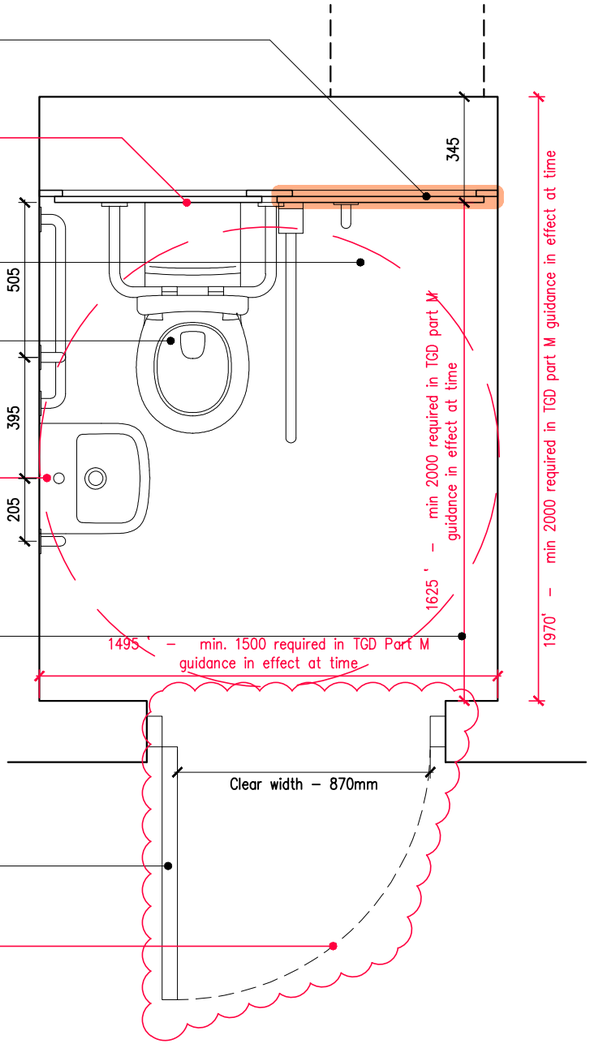
Position of sanitaryware not as per Part M requirements; Basin and grabrails to be remounted, tiling to be made good.

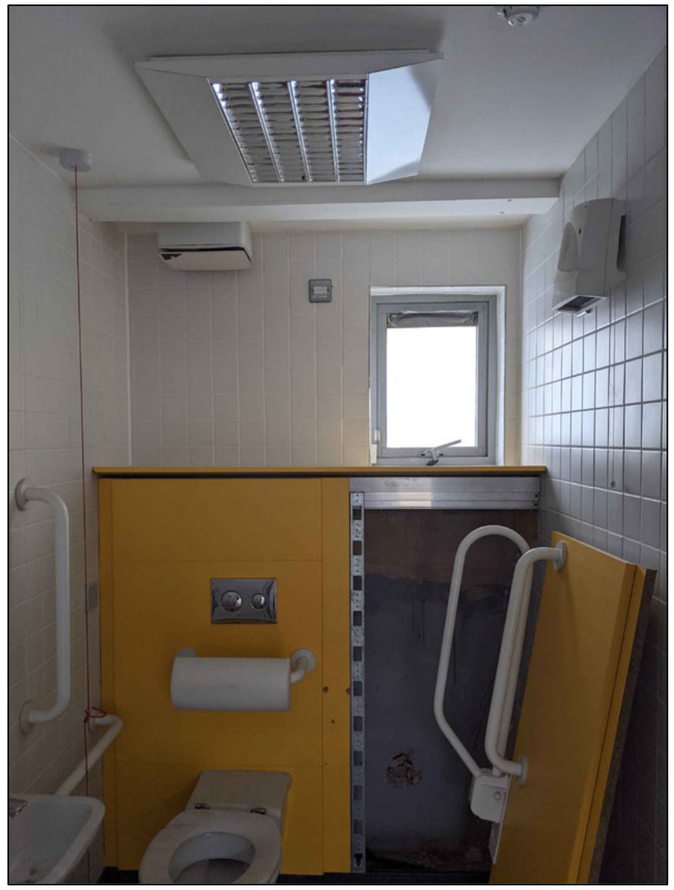
Dimensions of room in current arrangement not suitable for Accessible WC as per Part M 2000 (1500mm x 2000mm required)

Door feels 'heavy' calibration required at minimum, replacement may be required.

Door opens in to narrow circulation route to corridor. TGD Part M 2000, in effect at time of construction allowed door to open in to Room. Door to be rehung to open in to room to achieve greater compliance with guidance from time and avoid issues to circulation corridor.

Finishes generally appear to be in reasonable condition, however sufficient visual contrast does not appear to be provided between to the wall and sanitary fittings / Accessible furniture; Wall finish replacement to be considered unless testing can establish suitable Light reflectance Values are achieved.





As built WC to Staff Block 1.20 @ A3

Compliance issues noted in Red

GENERAL NOTES

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A	-	-

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Project
Kishogue Train Station

Drawing title
Sanitaryware Compliance Study
Staff Block WC

Drawn	Date	Scale
RG	07.04.2021	1.20

Drawing number
2101_SK_550

Revision
-

Area of IPS panel hatched orange, and associated grab rails require reinstatement. Condition generally appears to be reasonable.

WC requires further review and deep clean required at minimum

WC appears to be operational, deep clean required

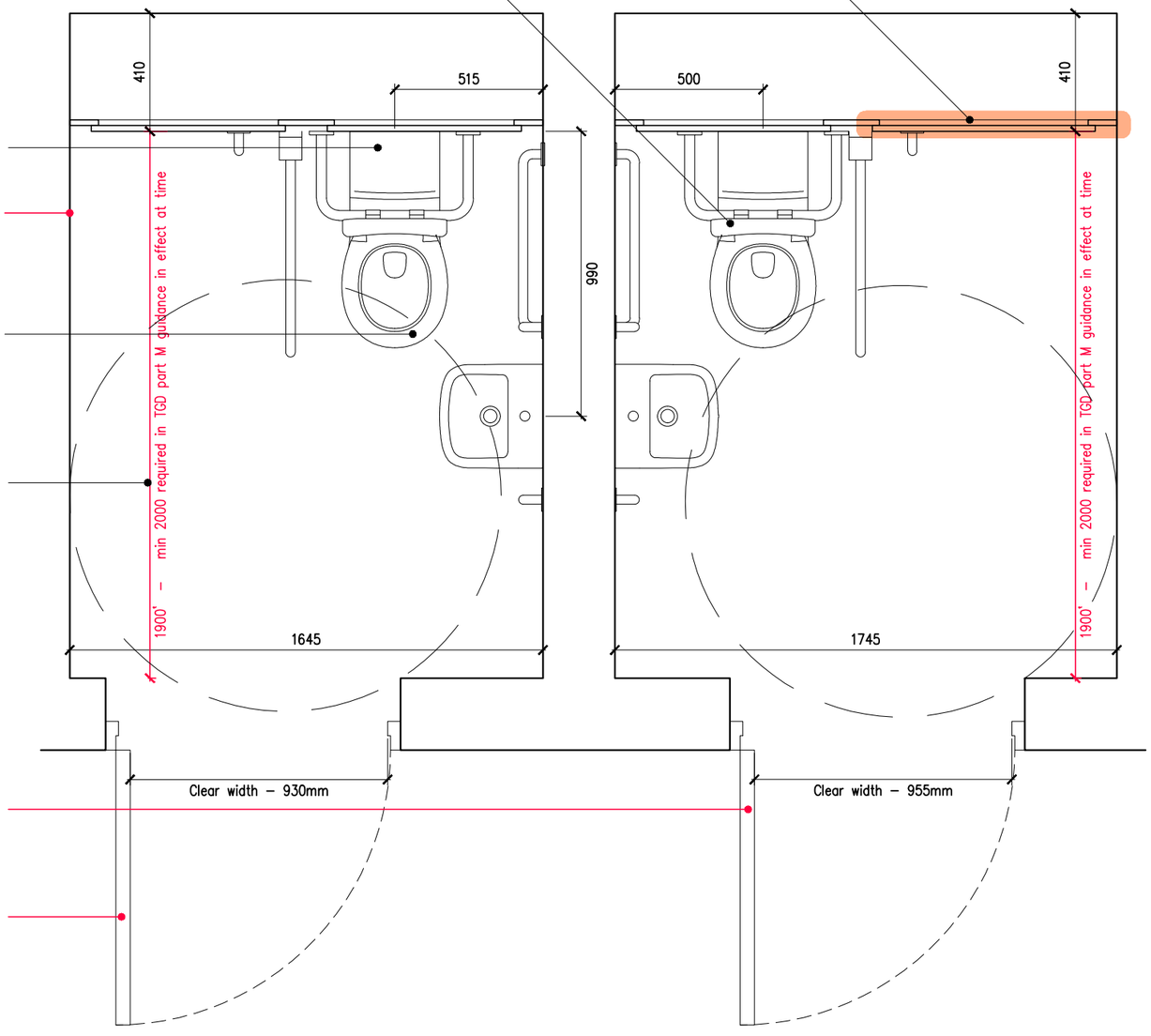
Finishes generally appear to be in reasonable condition, however further review of Light Reflectance Values of Wall finishes required as sufficient visual contrast may not be achieved between wall and sanitaryware

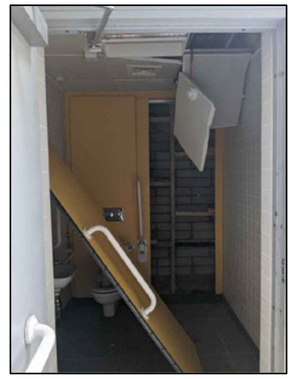
Setting out of Sanitaryware appears to be generally in compliance with Part M 2000, guirdance in effect at time of construction.

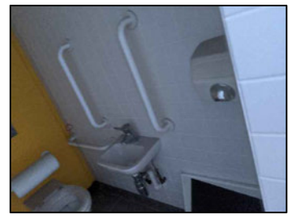
Dimensions of room in current arrangement not strictly suitable for Accessible WC as per Part M 2000 (1500mm x 2000mm required) however ample width provided to compensate for 100mm shortfall in length of rooms.

1 no. door should ideally be handed to suit greater range of different potential users

Doors feel extremely 'heavy'; calibration of closer required at minimum. New maintenance free hinges and door closer may be required to allow door to open with appropriate force required.







Public WCs 1.20 @ A3

Compliance issues noted in Red

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B	-	-
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Project
Kishogue Train Station

Drawing title
Sanitaryware Compliance Study
Concourse WCs

Drawn	Date	Scale
RG	07.04.2021	1.20

Drawing number
2101_SK_551

Revision
-

2 ‘Base Build Scope’

CRS: Items 1-0 Buildings & Structure Requirements
- Item 1: B&F General
- Item 2: B&F Platforms
- Item 3: B&F Stairs
- Item 4: B&F Floor Finishes
- Item 5: B&F Structure
- Item 6: B&F Building Fabric
- Item 7: B&F Building Fitout
- Item 8: B&F Drainage and Water Systems

CRS: Items 10-12 M&E Requirements
- Item 10: B&F (M&E) General
- Item 11: B&F (M&E) Lifts
- Item 12: B&F (M&E) Operational Requirements

CRS: Items 13-18 Operational Requirements
- Item 13: Operational General
- Item 14: Operational Station Staffing
- Item 15: Operational Revenue Control
- Item 16: Operational Station Modifications
- Item 17: Operational Mobility impaired access
- Item 18: Operational Access to Platform 4 from Car Park

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Architectural Scope

2101: Kishogue Station Opening

Issue 001 - 06.05.2021

Client Requirement Specification: Items 1-9 Buildings & Structure Requirements

	Description	Standard/ Condition	Base Build	Alternative Scope Option	Additional Commentary
			Design Team Recommendations		
Item 1: B&F General	Deep clean required in all areas. Removal of bird droppings, vandalised equipment and minor vegetation required.	Accumulation of dirt, litter, damaged items and general detritus present throughout. Presence of bird droppings throughout concourse area in particular. Damaged equipment and landscaping furniture present to concourse building. Moss, and vegetation present to stone paving throughout, with overgrown vegetation particularly present to drainage channels. Broken Glazing panes to curtain walling with glass shards to adjacent floor. Graffiti, and ancillary other staining present to walls throughout.	Floor Finish works set out in Architectural Scoping Drawings no. 2101_SK_502, 503: Full intensive power clean and general de-fouling work required to all areas prior to any strip out or demolitions works. Full Internal and External power washing required to all areas, including roof. All surfaces to be treated with detergent, washed down, and brush cleaned.	N/A	
Item 2: B&F Platforms	Inspect surface and repair any surfacing issues. Repair animal burrows in platform surfacing of Platform 4	Potholes and uneven areas of pavement resulting from burrowing damage present to Platform 4 particularly around Lift Area.	Platform works set out in Architectural Scoping Drawing no. 2101_SK_500: Platform 4 to be fully resurfaced. New tacitle pavings at landings to Stairs at Platform 1 / 2.	N/A	
Item 3: B&F Stairs	Inspect stairs. Where required, repair or replace nosings and other finishes on all stairs.	Grime and staining accumulated to handrails, balustrades, metalwork generally. Finish to stair treds uneven locally. Contrast nosings unevenly fitted and providing insufficient contrast on typical stair treads (only top and bottom of flights appear to provide suitable contrast). Uneven fitting of tactile pavings at stairs landings.	Works to Stairs described in Architectural Scoping Drawings no. 2101_SK_500, 501, 502, 503: New tacitle pavings at landings and new colour contrast nosings to all treads of all 3 no. sets of stairs to platform level. Existing Stainless Steel Balustrades to receive specialist cleaning and polishing treatment throughout. Gaps in ballustrades to internal stairs to be closed off.	N/A	
Item 4: B&F Floor Finishes	Inspect floor finishes (internal and external). Repair or replace external paving and tiling around the station exterior which is currently uneven Provide larger matwells at station building entrances.	Paving, both internal and external appears to lack appropriate slip resistance properties. Stone Paving stained, overgrown with moss, and uneven throughout, with damage to pavers locally. Suitable area of dished kerb to facilitate universal access not provided to car park drop off points. Existing Drainage channels at concourse level filled with overgrown vegetation. Existing mattwells insufficiently sized.	Floor Finish works set out in Architectural Scoping Drawings no. 2101_SK_500, 501: Area of existing continuous kerb to North of Car Park to be removed, replaced with accessible dished kerb. All effected adjacent finishes to be made good. New tacitle pavings at landings and new colour contrast nosings to all treads of all 3 no. sets of stairs to platform level. 3 no. new stainless steel drainage channels to be provided at Concourse level. Existing drainage channel to be cleaned out, Full extent of Stone paving at Concourse level including upstands to be stripped out, substrate prepared, and replaced with suitable Stone Paving. Weather proofing of 2 no. areas above service ducts to be reviewed prior to replacement of Stone Paving. 4 no. new enlarged matwells to be provided to entrances of Concourse building. Floor finishes to be replaced where required to staff areas.	N/A	

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Item 5: B&F Structure	Inspect primary and secondary structural elements (steel and concrete) Inspect and repair structural corrosion and fire protection systems.	N/A	Refer to Civil & Structural Report	N/A	
Item 6: B&F Building Fabric	Inspect existing building fabric. Considering the station is intended to be unmanned, alternatives to the glazed curtain wall system are to be considered that will provide a robust solution. A gap currently exists between the station building curtain wall and the roof. Solution to issues associated with this gap to be determined. Issues include: • Birds gaining access to the station through the gap. • Repeated activation of the fire detection and intruder alarm system due to birds/fumes. Investigate and find solution to the likelihood of condensation build-up within the station as experienced in similar conditions at Fonthill Station. Evidence of water ingress and damage to electrical equipment with the electrical rooms. Water ingress issue to be resolved.	Concourse building found with large quanities of bird droppings and fouling. Ongoing maintenance issue with exposure of lifts to moisture. Condensation build up requires further review Accumulation of damaged items and general detritus present throughout. Damaged equipment and landscaping furniture present to concourse building. Moss, and vegetation present to stone paving throughout, Graffiti, and ancillary other staining throughout.	Extent of treatment proposed to existing curtain walling set out in Architectural Scoping Drawing no. 2101_SK_150, with nature of works described in drawing no. 2101_SK_702: Elevation Option 3 Existing Curtain walling removed and replaced with lightweight steel framed partition system, constructed to same height as existing Curtain Walling. Replacement external walls to be clad externally with Large Format Stone Tiles to match existing Staff Block. Gap between SFS walls and soffit to be infilled with Modular Louvre panels to maintain airflow in accordance with existing Fire Safety Strategy. Full intensive power clean and general de-fouling work required to all areas prior to any strip out or demolitions works. Full Internal and External power washing required to all areas, including roof. All surfaces to be treated with detergent, washed down, and brush cleaned.	Alternative Option 01 as described in drawing no. 2101_SK_700: Lightweight modular panelised cladding panels (combination of perforated, mesh, and solid panels) face fixed to existing curtain walling system in "brick bond" patterns, to provide combination of robustness, passive security through transparency, and visual interest. Gap between Curtain Walling Frames and soffit to be infilled with Modular Louvre panels to maintain airflow in accordance with existing Fire Safety Strategy. Alternative Option 02 as described in drawing no. 2101_SK_701: Existing Curtain walling frames retained with Aluminium infill panels with etched external finish glazed in to system in place of glass at low level. Perforated steel cladding system provided at high level to protect high level glazing retained, and to infill gap between curtain walling and soffit. Steel cladding system to be fixed back to primary steel work with new steel frame.	
Item 7: B&F Building Fitout	Inspect all doors including automated doors. repair or replace defective doors. Recertify roof fall arrest system for building, ticket office and TER. Upgrade signage and wayfinding signage to latest standard. Provide larger matwells at station building entrances	Automatic door running gear to be replaced, but pending further survey activity in Phase 2, the door leaves would appear to be serviceable.	4 no. new enlarged matwells to be provided to entrances of Concourse building as set out in Architectural Scoping Drawing no. 2101_SK_501. Works required to Sanitary Facilities as set out in Drawing no. 2101_SK_550. Automatic door running gear to be replaced, but pending further survey activity in Phase 2, the door leaves would appear to be serviceable.		
Item 8: B&F Drainage and Water Systems	Survey drainage and water systems. Repair any issues identified.	Clogged gratings visible to surface water drainage channels. Some surface drainage channels appearing on As-Built information, were not actually installed.	Some additional surface water drainage channels recommended, not least in the threshold area of lift openings.		
Item 9: B&F Additional Structures	Canopy required at top of external stairs providing access to the island platforms. Objective: Prevent water ingress into the station building. Canopy required at concourse level above lift door of lift serving Platform 4 (note: no canopy required at platform level).	We would note that the additional of free standing screens would be of use in addressing this issue.	Floor Finish works set out in Architectural Scoping Drawings no. 2101_SK_ 501: 5 no. standard canopies to be provided to 4 no. entrances to Concourse building, and switch room door. 1 no. enlarged canopy above top half of eastern stairs to Platform 1/2. Screens. 2 no. freestanding screens to mitigate weather ingress at western entrance to concourse building, and platform 4 lift respectively.		

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Client Requirement Specification: Items 13-18 Railway Undertaking / Operational Requirements					
	Description	**Standard/ Condition**	**Base Build**	**Alternative Scope Option**	**Commentary**
			Design Team Recommendations		
Item 13: Operational General	All four platforms are to be brought back in to use. Access to all four platforms will be required from the station building. Initially, the island platforms 1 and 2 are to be used for services between Portlaoise-Heuston and Hazelhatch-Grand Canal Dock. The station furniture (bins, shelters & seats) is to be installed on all four platforms however. Platforms 3 and 4 are required where mainline services become degraded and need for de-train passengers from a crippled train or emergency services access to a train.	N/A	Base build scope addresses the bins, shelters and seats requirement for all four platforms.		
Item 14: Operational Station Staffing	The station is to open on an unmanned basis. Station facilities are to be provided for a security guard. This will include necessary welfare facilities and CCTV monitors will have to be installed to enable monitoring of the CCTV within the station. The completed station shall be future-proofed so that the ticket office could be opened in the future with minimal works.	N/A	Base build anticipates the deep clean, light touch renewal and full redecoration of the staff areas.		
Item 15: Operational Revenue Control	Ticket validation poles may be more appropriate instead of ticket gates if the station is unmanned long term. There is no objection to moving the Ticket Vending Machines from the concourse to external location if required, once shutters are provided.	N/A	Refer to Architectural Drawings 2101_SK_150 and 2101_SK_151 provided at Appendix 2 which illustrate the 'Paid V Unpaid' model and the "Validation Pole" operational layout.		Stakeholder meeting held 15.04.2021 noted the IE preference not to house ticket machines externally
Item 16: Operational Station Modifications	Where there are gaps in the internal stair balustrades, these should be closed off for security purposes. A CIS panel to be provided at concourse level to advise passengers of the next services and platform. The area under the stairs adjacent to the car park and Platform No. 4 shall be fenced off to prevent access and congregating. Existing public toilets not to be brought into use, proposed use as store instead.	Gaps to stairs ballustrades observed. Platform 4 access issued surveyed and noted.	Reference Architectural drawings 2101_SK_550 and 2101_SK_551 provided at Appendix 2 for survey and compliance commentary on exisitng sanitary facilities.		CRS note to lock sanitary facilities will be assessed against Part M obligations, and BS recommendations.
Item 17: Operational Mobility impaired access	The only access/egress for mobility impaired passengers to and from platforms 1 and 2 is via a lift. A risk of a mobility impaired passenger being unable to use the lift due to damage or fault has been identified. A study is to be undertaken to identify options and associated costs to mitigate this risk.	Design Team developed 5 no. design solutions as potential options to addressing accessibility issues to Platform 1&2. Drawings of these Accessibility Options can be found at Appendix 2. Together with the Design Team, the 5 options were discussed and ranked under the following criteria: User Experience Buildability Cost Operational Experience Risk	Option 2: Provision of additional lift shaft to serve Platform 1 & 2 within concourse building. Stairs reorientated to accommodate. Lift loading area to be sheltered with a lobby enclosure at platform level.	Option 1: Provision of Stairlift to platform 1 & 2 Option 3:Provision of New External Lift to East of Concourse serving Platforms 1 & 2. Option 4: Provision of New External Lift to West of Concourse serving Platforms 1 & 2. Option 5: Provision of 2 no. new lifts and linking gantry to East end of Platform 1 & 2 and car park respectively.	Access to and from Platform 3 is not satisfactory for a wheelchair user. Previous provision for a future passenger lift has been made at platform 3. In the event that Platform 3 is commissioned for more frequesnt use, it is recommended that a lift be provided.

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Item 18: Operational Access to Platform 4 from Car Park	At present, passengers from the car park can use a lift or stairs to access the concourse level or access platform 4 directly. Trespass on the railway at this location is considered to be high risk. To reduce the risk of trespassers entering from the car park, access to platform 4 shall be curtailed. Passengers accessing from the car park should be directed through the concourse level. This will require a revised stair/lift arrangement from the car park, similar to current layout at Clondalkin-Fonthill station or an equivalent effective proposal.	Free unobstructed access currently possible from car park to Platform 4 via stairs to south of concourse.	Existing Stairs to south Of Concourse modified with flight to Platform 04 removed and balustrades made good to mitigate unauthorised access. New Stairs provided provided as shown on architectural drawings no. 2101_SK_140, 141. Security line dividing paid/unpaid modified at concourse level as shown. New security fence and demand control access gate provided to south of Platform 4.	Alternative Scope Option developed, providing controlled access to Plafrom 4 with the use of demand controlled gates. Drawing 2101_SK_145 & Drawing 2101_SK_146 found at Appendix 2 describe an alternaitive option, avoiding the lift reconfiguration works, which proposes a seqence of Access Controlled gates to provide lift access to plafrom 4.	Alternative Scope Option was developed later in the Phase 1 process, missing the opportunity to present options at the stakeholder meeting 15.04.2021.

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Civil and Structural Tracker			Details	Standard/ Condition	Option 1 - Base Build Cundall Recommendation	Option 2	Option 3	Photograph
Item 1: B&F General	Deep clean required in all areas. Removal of bird droppings, vandalised equipment and minor vegetation required.	N/A	N/A	N/A	N/A	N/A	N/A	
Item 2: B&F Platforms	Inspect surface and repair any surfacing issues. Repair animal burrows in platform surfacing of Platform 4	Platform 4 repairs	Areas of holes/soft spots in platform 4 adjacent to lift core and areas of platform close to this		Repairs to affected section of platform - refer to Cundall sketch	N/A	N/A	 
Item 3: B&F Stairs	Inspect stairs. Where required, repair or replace nosings and other finishes on all stairs.	Handrail steelwork			All stripped back and repainted	N/A	N/A	
Item 4: B&F Floor Finishes	Inspect floor finishes (internal and external). Repair or replace external paving and tiling around the station exterior which is currently uneven. Provide larger matwells at station building entrances.	Deck waterproofing	Leaks in existing deck	Evidence of water coming through/staining to concrete on underside of deck, especially in service duct area	Take up existing tiles, flood test, identify areas where leaks are present, local repairs. Allow 30% area for repairs to waterproofing.	Take up existing tiles, install full new waterproofing system	N/A	
		Gullies in decks			Local repair/replacement of existing gullies. Allow 30% replacement.	Replace all gullies with new	N/A	
Item 5: B&F Building Structure	Inspect primary and secondary structural elements (steel and concrete). Inspect and repair structural corrosion and fire protection systems.	Concrete repairs generally	Concrete upstands around perimeter of station deck, platform 4	Small areas of concrete broken off, generally in areas where steelwork connects to concrete	Localised repairs to areas where concrete has broken off. Allow for 20 linear metres repairs to concrete upstand using high strength repair mortar.	N/A	N/A	 
		Concrete cracking to precast units		Small cracks identified in bottom of precast deck units	No works anticipated	N/A	N/A	
		Paint repairs to steelwork	Existing coating to steelwork at station level is not appropriate	Paint to external columns is flaking off significantly. Evidence of corrosion in areas of roof trusses/internal steelwork and plates at connections	Full strip back and recoating of all columns and roof trusses/steelwork including plates at connections. Refer to Cundall markups for example paint specification.	Full strip back and recoating of all columns. Patch repairs to roof trusses/other steelwork - allow for remedial works to 20% roof steelwork, including plates at connections. Refer to Cundall markups for example paint specification	N/A	 
		Footbridge steelwork	Bridges are composite steel and concrete structure	Condition of steelwork has not currently been inspected	Allow for inspection, and renewal of top coat of paint to steelwork	N/A	N/A	

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Civil and Structural Tracker			Details	Standard/ Condition	Option 1 - Base Build Cundall Recommendation	Option 2	Option 3	Photograph
Item 6: B&F Building Fabric	Inspect existing building fabric. Considering the station is intended to be unmanned, alternatives to the glazed curtain wall system are to be considered that will provide a robust solution. A gap currently exists between the station building curtain wall and the roof. Solution to issues associated with this gap to be determined. Issues include: • Birds gaining access to the station through the gap. • Repeated activation of the fire detection and intruder alarm system due to birds/fumes. Investigate and find solution to the likelihood of condensation build-up within the station as experienced in similar conditions at Fonthill Station. Evidence of water ingress and damage to electrical equipment with the electrical rooms. Water ingress issue to be resolved.	Cladding support	Additional cladding panels required to 'close' top of structure above glazing	Steelwork not currently present where required	New line of PFC spanning between existing roof members to support new cladding over full perimeter of building	N/A	N/A	
		Canopies	New canopies indicated over openings	Steelwork not currently present where required	New steel frames for canopy support to be independent of existing structure. Refer to Cundall markups			
Item 7: B&F Building Fitout	Inspect all doors including automated doors. Repair or replace defective doors. Recertify roof fall arrest system for building, ticket office and TER. Upgrade signage and wayfinding signage to latest standard.	Fall arrest system	Existing system for access to roof	Recommendations by Skyway to follow	Upgrades to existing system. Recommendations by Skyway to follow	N/A	N/A	
Item 8: B&F Drainage & Water Systems	Survey drainage and water systems. Repair any issues identified.	Drainage	Existing drainage for station level fixed to underside of deck. Existing platform drainage below ground.	No CCTV survey undertaken - assume acceptable condition	No works anticipated			

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Civil and Structural Tracker			Details	Standard/ Condition	Option 1 - Base Build Cundall Recommendation	Option 2	Option 3	Photograph
Item 9: B&F Additional Structures	Canopy required at top of external stairs providing access to the island platforms. Objective: Prevent water ingress into the station building. Canopy required at concourse level above lift door of lift serving Platform 4 (note: no canopy required at platform level).	Canopies	New canopies indicated over openings	Steelwork not currently present where required	New steel frames for canopy support to be independent of existing structure. Refer to Cundall markups			
		Additional opening to Platform 4 lift	Platform 4 lift to become dual-sided		Significant structural works. Openings to be formed at station and platform level in existing shaft wall. New lintels over required openings	N/A	N/A	
		Stair access to platform 4	Potential for revised stair access from station deck to platform 4 to provide separation of paid/unpaid zones		Support and foundations for new stairs. Assume precast concrete stairs.	N/A	N/A	
		Lift pit options - Platform 3	Lift required for platform 3	Previous scheme did not fully construct platform 3 lift	Lift proposals to Platform 3 not included in current Base Build Scope	Construct new lift outside of existing platform footprint Allow standard 1.8m lift pit. 250mm thick RC walls and capping slab. Allow 2m length RC slab to bridge to existing station deck.	Construct new lift where originally planned for on platform 3. Allow standard 1.8m lift pit. 250mm thick RC walls and capping slab. Allow for breaking through existing structure. Allowance should be made for disruption to rail services and track closure due to proximity.	
		New lifts to platform 1 & 2	Accessibility options still being explored					

Exclusions
Dart +
EV Chargers

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CUNDALL

MEP & Lifts Tracker			Details	Standard/ Condition	Option 1 - Base Build Cundall Recommendation	Option 2	Option 3	Photograph
Electrical Distribution								
Item 10: B&F (M&E) - General	All station services and containment require inspection, replacement and / or recertification.	Main ESB Switch Room	Located adjacent to platform 4	Appears In good condition	No works proposed			
Item 10: B&F (M&E) - General		Main ESB Switch Board	Main ESB Incomer 400A	Appears In good condition	Switchgear and main board to be tested and re-certified			
Item 10: B&F (M&E) - General	All station services and containment require inspection, replacement and / or recertification.	Main Station Switch Room	Located in main station south entrance.	Water ingress has led to a build up of water below the raised access floor. In our opinion the water ingress appears to be caused from driving rain through the switch room door and a louvre above the switchroom door.	See Architectural an C&S schedules for proposed solutions which include a canopy outside of the switchroom and the TER.	In addition to architectural and C&S proposal leak detection could be install to provide early warning of water ingress within the switch room. This could be connected to the security panel for remote monitoring or a new Digi dialler could be installed.		
Item 10: B&F (M&E) - General	All station services and containment require inspection, replacement and / or recertification.	Main Station Distribution Board	Form 4 board manufactured by Parkmore MDB has an incoming isolator size of 250A Board was installed in 2008/9	MDB appears to be in a good condition with no visual evidence of corrosion. There is no visual evidence of moisture or condensation on the switchgear. The main digital meter appears to be operating.	Retain the main station board. The appointed contractor should engage a panel manufacturer to survey, test and recommission the board and update panel charts and labelling in line with the station remedial works.	Replace the board with a new board which will include a manufacturers warranty and reduce the risk of possible future maintenance issues.		
Item 10: B&F (M&E) - General	All station services and containment require inspection, replacement and / or recertification.	Sub Distribution Boards	Located in the station switch room	Appear to be in good condition with no visual evidence of corrosion. There is no visual evidence of moisture or condensation on the switchgear.	Retain sub boards. The appointed contractor should engage a panel manufacturer to survey, test and recommission the board and update panel charts and labelling in line with the station remedial works.	Replace the sub- boards with new boards to include a manufacturers warranty and reduce the risk of possible future maintenance issues.		
Item 10: B&F (M&E) - General	All station services and containment require inspection, replacement and / or recertification.	Sub Mains Cables - Main Switch room to Station Switch room	Sub Mains XLPE/SWA/LSF cables from ESB incoming room to the main station switch room.	Appear to be in good condition from our visual survey. Condition of underground sections unknown.	Appointed contractor to include for testing and re-certification of the existing cables.	If the cable is found to be damaged or fails any IS:10101:2020 electrical testing required for re-certification it will need be replaced.		
Item 10: B&F (M&E) - General	All station services and containment require inspection, replacement and / or recertification.	Sub Mains Cables - Feeding sub boards	Sub Mains XLPE/SWA/LSF cables from main station board to sub boards within the switchroom appear to run on tray below the raised access floor.	These cables have been submerged in water below the raised access floor in the station switch room for prolonged periods.	All cables below the raised access floor should be replaced, tested and certified by the appointed contractor.			
Item 10: B&F (M&E) - General	All station services and containment require inspection, replacement and / or recertification.	Final circuiting	A Mix of 1.5mm, 2.5mm and 4mm LSF singles throughout with XLPE/SWA/LSF/Cu cables for some services final circuits.	Internal cabling generally appears to be in acceptable condition. A number of external cables have been damaged or cut in sections and removed by vandals. Some cables may also have suffered from water ingress in external light fittings causing some local corrosion. Some armoured final circuit cables were also submerged in water below raised access floor in the station switch room.	Appointed contractor to include for testing and re-certification of all the existing cables. Damaged or cut or corroded cables should be stripped out and replaced. All cables passing through the raised access floor in the station switch room should also be replaced.	Complete rewire of all external services cabling if during appointed contractors intrusive survey, opening up and strip out works a significant quantity of cables are found to be corroded.	Complete rewire of the entire electrical installation	
Item 10: B&F (M&E) - General	All station services and containment require inspection, replacement and / or recertification.	Containment	300mm x 150mm 2 compartment metal trunking at HL serving lighting and general services. 150mm x 100mm 2 compartment metal trunking at HL serving ELV services. 100mm x 50mm metal trunking at HL serving ELV services. There are 20mm and 25mm metal conduit drops to final internal and external electrical points. There is 150m and 250mm heavy duty cable trays within the station switch room and TER room LL service void . There is also cable trays within service voids below surface finishes and lift service riser. There is a number of service ducts below surface finishes and in service voids between platforms.	Generally internal containment appears to be in good condition. A number of high level trunking support brackets adjacent to the facade in the southwest corner of the station are corroded along with a small section of trunking. The majority of the external exposed containment conduit and saddles appear to have some level of corrosion. The low level trays in the station switch room are corroded due to the water ingress below the raised access floor. The containment within internal staff area appears to be in good condition.	Replace all corroded high level containment brackets within the station estimated at 40% and 24m of trunking. Replace al exposed external containment. Replace all corroded containment below the raised access floor in the switchroom and TER.	Replacement of all containment throughout.		

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CUNDALL

MEP & Lifts Tracker			Details	Standard/ Condition	Option 1 - Base Build	Option 2	Option 3	Photograph
					Cundall Recommendation			
Item 10: B&F (M&E) - General	All station services and containment require inspection, replacement and / or recertification.	Basic electrical allowances (Small Power/Light Mechanical)	Sockets, fused connection units, isolation switches and cooker isolation switch and Air Conditioning controls located in ticket office, staff toilets and staff kitchen areas.	Services in the kitchen and Ticket office Appear to be in good working condition from our visual survey.	In our opinion these services can be retained, but all wiring should be re-tested and re-certify along with all associated devices and plant.			

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CUNDALL

MEP & Lifts Tracker			Details	Standard/ Condition	Option 1 - Base Build Cundall Recommendation	Option 2	Option 3	Photograph
General and Emergency Lighting								
Item 10: B&F (M&E) - General	All station services and containment require inspection, replacement and / or recertification.	Car park Lighting	There are 8m high poles installed in the car park for external lighting. The poles currently do not have any light fittings installed. There are a number of ducts underground for the installation of the cabling associated with the car park lighting	The lighting poles were only recently installed and appear to be in good condition. Cundall have carried out initial calculations to investigate if the current lighting pole arrangement would allow for the installation of an appropriate lighting design to provided the required lighting levels in line with the IR Lighting Design Guidance document 2019 and IS EN 12464-2, EN 13201-2:2015 / BS 5489-1:2020.	Install new light fittings mounted on the existing 8m poles in the carpark and the entrance road applicable for a heavy traffic carpark in accordance with IR Lighting Design Guidance document 2019 and IS EN 12464-2, EN 13201-2:2015 / BS 5489-1:2020. Carpark – 20 lux average, 0.25 uniformity. This complies with IS EN 12464-2 for parking areas – heavy traffic (20 lux average, 0.25 uniformity). Entrance Road – 17 lux average, 5 lux minimum. Terminal Approach – 20 lux average 3 lux minimum. These levels comply with lighting class P1 of Is EN 13201-2:2015 / BS 5489-1:2020 for subsidiary roads / pedestrian areas (15 lux average, 3 lux minimum). Path – 11 lux average, 2 lux minimum. This complies with lighting class P2 of Is EN 13201-2:2015 / BS 5489-1:2020 for paths (10 lux average, 2 lux minimum). We need to confirm if a Disability Access Certificate route is a requirement and if so the route would need to be clearly identified. If it is applicable, we will look at increasing the light levels across the disabled spaces to 20 lux minimum as per Part M of the building regulations.			
Item 10: B&F (M&E) - General	All station services and containment require inspection, replacement and / or recertification.	Platform Lighting	The platform lighting is a mixture of pole mounted and wall mounted fittings. The poles on the platform are 5m high. There are a number of ducts underground for the installation of the cabling associated with the platform lighting.	The lighting poles and mounting brackets appear in good condition although the platform but are not hinged for maintenance and the wall mounted platform lighting is also not accessible for maintenance without the use of a ladder or MEWP. Lighting was not operational during our survey. The lighting throughout did not appear to be LED.	Carry out lighting calculation to confirm existing pole layout meets required lighting levels in accordance with IR Lighting Design Guidance Summery Document 2019. Replace all existing fittings with new LED fittings. (Philips LumiStreet)	Carry out lighting calculation to confirm existing pole layout meets required lighting levels in accordance with IR Lighting Design Guidance Summery Document 2019. Replace all fittings with new LED fittings (Philips LumiStreet) and replace all existing lighting poles with hinged poles for ease of maintenance.	Retain and relamp existing fittings.	
Item 10: B&F (M&E) - General	All station services and containment require inspection, replacement and / or recertification.	Platform 3 - Accessibility Ramp Lighting	There are vandal proof surface mounted linear t5 fluorescent fittings mounted above the pedestrian ramp.	Appear to be in poor condition with signs of water egress. Supply cables have been cut and removed in sections by vandals.	Replace and rewire existing lighting installation to match existing installation with new IP65 rated vandal proof fittings. Additional metal protection will be required to protect cables.			
Item 10: B&F (M&E) - General	All station services and containment require inspection, replacement and / or recertification.	External pedestrian entrance area general lighting	There are a mix of surface mounted high bay lights under the station roof canopy, fitting mounted on poles fixed to pedestrian entrance bridge and wall mounted bulkhead fittings on the north façade.	They appear to be in relatively poor condition with signs of corrosion. Some fittings are not readily accessible for maintenance. The quantity of fittings at the south main entrance at the top of stairs 3 appears to be insufficient.	All existing external lights to be replaced with new IP65 rated vandal resistant fittings throughout and the installation of additional new fittings located to facilitate maintenance access and to provided appropriate lighting levels at the south entrance at the top of stairs 3 and pedestrian entrances bridges.	All existing external lights to be replaced with new IP65 rated vandal resistant fittings throughout in line with the existing lighting design layout with no new additional lighting designed.		
Item 10: B&F (M&E) - General	All station services and containment require inspection, replacement and / or recertification.	Platform and Public Concourse Emergency Lighting	There are 20W twin spot emergency light fittings installed along the platform on the 5m poles and surface mounted in the main concourse.	They appear to be in poor condition with signs of water egress. Fittings are likely to cause maintenance issue, battery not expected to last the required 3hour duration.	Review and updated current design to current IS 3217 2013 +A1:2017 and replace all existing fittings with new IP65 rated vandal resistant fittings throughout with new designed layout.	Replace and upgrade existing fittings as per the exiting design layout with new IP65 rated vandal resistant fittings throughout		
Item 10: B&F (M&E) - General	All station services and containment require inspection, replacement and / or recertification.	Directional Emergency Signage	Surface mounted box exits signs above exit doors and IP rated direction bulkheads along exit routes	Appear to be in poor condition with signs of water egress. Fittings are likely to cause maintenance issue, battery not expected to last the required 3hour duration.	Review and updated current design to current IS 3217 2013 +A1:2017 and replace all existing fittings with new IP65 rated vandal resistant fittings throughout	Replace and upgrade existing fittings as per the exiting design layout with new IP65 rated vandal resistant fittings throughout		
Item 10: B&F (M&E) - General	All station services and containment require inspection, replacement and / or recertification.	Internal Ticket Office and Staff Kitchen Lighting	Recess 600x600mm modular fittings with T5 fluorescent fittings in the ticket office and kitchen.	Appear to be in good condition from our visual survey. The lighting circuit power was off during our survey so we could not confirm lighting was operational.	Replace and upgrade existing fittings with new LED equivalent fittings due to the age of the fitting and advances in LED technology.	Relamp existing fittings.		

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MEP & Lifts Tracker			Details	Standard/ Condition	Option 1 - Base Build Cundall Recommendation	Option 2	Option 3	Photograph
Security								
Item 10: B&F (M&E) - General Item 16: Operational – Station modification	The complete station must be monitored with IP CCTV at all times. It shall be capable of connection to IÉ network for remote monitoring. Station facilities are to be provided for a security guard. This will include necessary welfare facilities and CCTV monitors will have to be installed to enable monitoring of the CCTV within the station.	Platform CCTV	There are pole mounted and wall mounted CCTV cameras installed on the platform.	Appears to be in poor condition with signs of vandalism and water egress. Technology is outed and at risk of becoming obsolete. Requirements for DOO monitors to be advised by IR.	Replace and upgrade with new Aviglion system throughout to IS BS 50132-7:2012			
Item 10: B&F (M&E) - General	All station services and containment require inspection, replacement and / or recertification.	Access Control	There is a ACTpro 4000 2 door controller and two ACTpro 1030e multiformat card readers installed in the station. There are also push to release exit buttons installed.	Appear to be in acceptable condition from our visual survey.	Existing system to be tested and recommissioned by specialist contractor.	Replace with new system to EN 50131		
P.A System								
Item 10: B&F (M&E) - General	All station services and containment require inspection, replacement and / or recertification.	Platform P.A System	The P.A speakers on the platform are mounted on 5m lighting poles. The speakers are connected to a mixture of long zone and short zone.	Appears to be in poor condition with signs of vandalism. Technology is at risk of becoming obsolete.	Replace and upgrade with new system in line with IR requirements and BS EN 50849:2017 and BS 6259:2015			
Item 10: B&F (M&E) - General	All station services and containment require inspection, replacement and / or recertification.	Station P.A System	Inside the station there are P.A speakers connected to short zone. There are also P.A speakers connected to the Fire Alarm system	Appears to be in poor condition with signs of vandalism. Technology is at risk of becoming obsolete	Replace and upgrade with new system in line with IR requirements and BS EN 50849:2017 and BS 6259:2015			
Voice Evacuation system								
Item 10: B&F (M&E) - General	All station services and containment require inspection, replacement and / or recertification.	Platform Voice Evacuation System	There are voice evacuation speakers mounted on the 5m lighting poles on the platform	Appears to be in poor condition with signs of vandalism. Technology is at risk of becoming obsolete.	Replace and upgrade with new system in line with IR requirements and BS EN 50849:2017, BS 6259:2015 and BS 5839-9:2011			
Fire Protection								
Item 10: B&F (M&E) - General	Fire detection system to be linked to the station TER for connection IÉ network for remote monitoring system. - A Fire Access Panel for Fire Service is required in the concourse to aid locating the source of the alarm.	Fire Detection system	There is a addressable L2/L3 fire alarm system installed in the station. Smoke detectors and break glass units are installed throughout the station. At automatic barriers and doors there are I / O units connected to the fire alarm system. The fire alarm panel is located in the ticket office.	The fire alarm system appears to be maintained and in operational condition. There is no remote repeater panel in the main concourse to aid fire fighter in locating the source of alarm. The system was not designed or installed to current IS 3218: 2013 +A1 :2019 standard. The fire alarm appears to be wired in a mix of PH120 and PH30 firetuf cable, this needs to be clarified further.	Replace all detector heads and install a new repeater panel inside the entrance of the main concourse within a vandal resistant enclosure. System to be linked to the station TER for connection to the IÉ network remote monitoring system. Recommission the system in line with the existing systems certification.	Replace all detector heads, install a new repeater panel inside the entrance of the main concourse within a vandal resistant enclosure. carry out all alterations required to meet current IS 3213: +A1 :2019 and recommission the system and rewire the complete installation.		
Disabled Refuge								
Item 10: B&F (M&E) - General	All station services and containment require inspection, replacement and / or recertification.	Disabled Refuge	Call station located at south entrance.	Call panel at station south main entrance is in poor condition.	Replace and upgrade with new system in line with IR requirements and BS 5839-9:2011			

Kishogue Station

Job No: 1028436
Issue: Rev- D
Date: 06/0452021

CUNDALL

MEP & Lifts Tracker			Details	Standard/ Condition	Option 1 - Base Build	Option 2	Option 3	Photograph
					Cundall Recommendation			
Disabled Toilet Call Alarm								
Item 10: B&F (M&E) - General	All station services and containment require inspection, replacement and / or recertification.	Disabled Toilet Call Alarm	Located in the disable toilets	Appeared to be in good condition and functioning.	Appointed contractor to test and recommission existing system. Confirmation required on weather the existing public toilet are to be retained when the station opens or decommissioned and used as a store.	Replace with new disabled call system		
CIS								
Item 16: Operational – Station modification	A CIS panel to be provided at concourse level to advise passengers of the next services and platform.	CIS (Customer Information Systems)	CIS help points poles are mounted on each platform with equipment rack located in the ticket office. Our understanding is that these incorporate, hearing induction loops, call refuge and customer display units. Further details required from IR on their functionality.	Poles appear in acceptable condition we could not determine if all cabling and power supplies were installed there was no information display panels or customer call panel fitted.	Install all required CIS equipment to be free issued by IR to the appointed contractor. Contractor to check presence of existing cabling, re-test cabling and commission.	Install all required CIS equipment to be free issued by IR to the appointed contractor. Contractor to install new power supply and data cabling if required.		
EV Chargers								
Item 10: B&F (M&E) - General	Irish Rail advised that EV chargers are a likely requirement.	EV (Electric Vehicle) Charging Points	Surface mounted box exits signs above exit doors and IP rated direction bulkheads along exit routes			The EV chargers will be public charging points located in the public carpark. The EV charging points will be supplied and installed by ESB ecars. The chargers will be owned and managed by ESB ecars. Trenching and ducting will need to be provided for the new ESB supply for the charging points. The ESB will advise further on this route a design stage but an allowance will be allowed in the mean time.		
Ventilation								
Item 10: B&F (M&E) - General Item 14: Operational – Station Staffing	All station services and containment require inspection, replacement and / or recertification. Station facilities are to be provided for a security guard. This will include necessary welfare facilities	Ticket Office	Mitsubishi 4 way blowing ceiling mounted cassette unit within the ticket office with R410A refrigerant gas	Appears to be in reasonably good condition.	Existing system to be retained and recommissioned by specialist contractor.	Replace with new unit due to its age and duration out of service.		
Item 10: B&F (M&E) - General Item 14: Operational – Station Staffing	All station services and containment require inspection, replacement and / or recertification. Station facilities are to be provided for a security guard. This will include necessary welfare facilities	WCs	Toilet Extract unit and air transfer grill provided.	Appears to be in reasonably good condition.	To be retained and tested by the contractor.	Replace with new unit due to its age and duration out of service.		
Item 10: B&F (M&E) - General Item 14: Operational – Station Staffing	All station services and containment require inspection, replacement and / or recertification. Station facilities are to be provided for a security guard. This will include necessary welfare facilities	Staff Kitchen	Heat recovery ventilation unit mounted above false ceiling within the kitchen with local wall mounted controls.	Appears to be in reasonably good condition.	Existing heat recover unit to be retained and recommissioned by specialist,	Replace with new unit due to its age and duration out of service.		
Item 10: B&F (M&E) - General Item 14: Operational – Station Staffing	All station services and containment require inspection, replacement and / or recertification. Station facilities are to be provided for a security guard. This will include necessary welfare facilities	TER	1 -No Wall mounted Mitsubishi AC Unit with R410A refrigerant gas	Appears to be in reasonably good condition and is operational	Existing system to be retained and recommissioned by specialist contractor.	Replace with new unit due to its age and duration out of service.		
Space Heating								
Item 10: B&F (M&E) - General Item 14: Operational – Station Staffing	All station services and containment require inspection, replacement and / or recertification. Station facilities are to be provided for a security guard. This will include necessary welfare facilities	WCs and Staff Areas	Electric wall mounted vector heater in the kitchen.	Appear to be in good condition.	To be retained and tested by the contractor.	Replace with new unit due to its age and duration out of service.		

Kishogue Station
Job No: 1028436
Issue: Rev- D
Date: 06/0452021

CUNDALL

MEP & Lifts Tracker			Details	Standard/ Condition	Option 1 - Base Build	Option 2	Option 3	Photograph
					Cundall Recommendation			
Water Services								
Item 10: B&F (M&E) - General Item 14: Operational – Station Staffing	All station services and containment require inspection, replacement and / or recertification. Station facilities are to be provided for a security guard. This will include necessary welfare facilities	WCs and Staff Areas	Water services provided in WCs and Staff Kitchen with local Ariston under sink water heaters.	Appear to be in good condition.	Existing water services to be retained with an allowance for 2No. Water heater replacement.			
Vertical Transport:								
Item 12: B&F (M&E) - Lifts	It shall be possible for the lift fault report centre to review lift assets remotely. Lifts must be monitored with IP CCTV at all times A lift passenger call system must be fitted to each lift, this system will be required at this location and all calls routed to Heuston or a location that is manned. To be agreed with the RU. Assuming the station is unmanned, passenger access to the lifts to be controlled. All lifts must be enclosed and weatherproof.	Passenger Lifts:	2No. 8 Person Lifts @ 1.00 m/s Rated load: 630kg Power supply: 400V Motor Power: 5.1kW Running Current: 13.2A	Signs of vandalism and removal of parts. Report from Lift contractor survey with further details to be issued.	Upgrade lifts to current standards and replacing major components to meet these standards which involves the replacement of all control systems but includes for retaining the hardware (lift car, motors etc.)	Minimal works to re-instate the lifts as is, with the inclusion of replacing some, mainly electronic components to ensure reliability for the lifts in service. This option based on the assumption that all other components such as the Main Geared Machine are still fully operational. If client wishes to proceed with this as their first choice option, it might be prudent to employ a lift contractor to carry out initial remedial works to assess a more exact position.	Full replacement of the 8 person wheelchair passenger lifts to current standards. Note it is not possible to increase the size of lifts to a 10 person in the existing lift shaft.	
Accessibility Options.								
B1 - Means of Escape		Possible additional Stairs or Lifts				A number of different proposal are being discussed in regards to providing additional stairs and lifts, to assist occupants escaping from Platform 1 and 2. On confirmation of the preferred option we can comment further, however for now these proposals are viewed as an improvement.		
B1 - Means of Escape		Disable Parking additional Lighting	Disable Parking additional Lighting			We need to confirm if a Disability Access Certificate route is a requirement and if so the route would need to be clearly identified. If it is applicable, we will look at increasing the light levels across the disabled spaces to 20 lux minimum as per Part M of the building regulations. This may require some additional lighting poles and ducting.		
Exclusions								
		Dart +						
		EV Charging Points (By others)						
		Additional Accessibility Options M&E upgrade works inclusion subject to options selected						

Kishoge Station Opening

NTA Scope Presentation – January 2022

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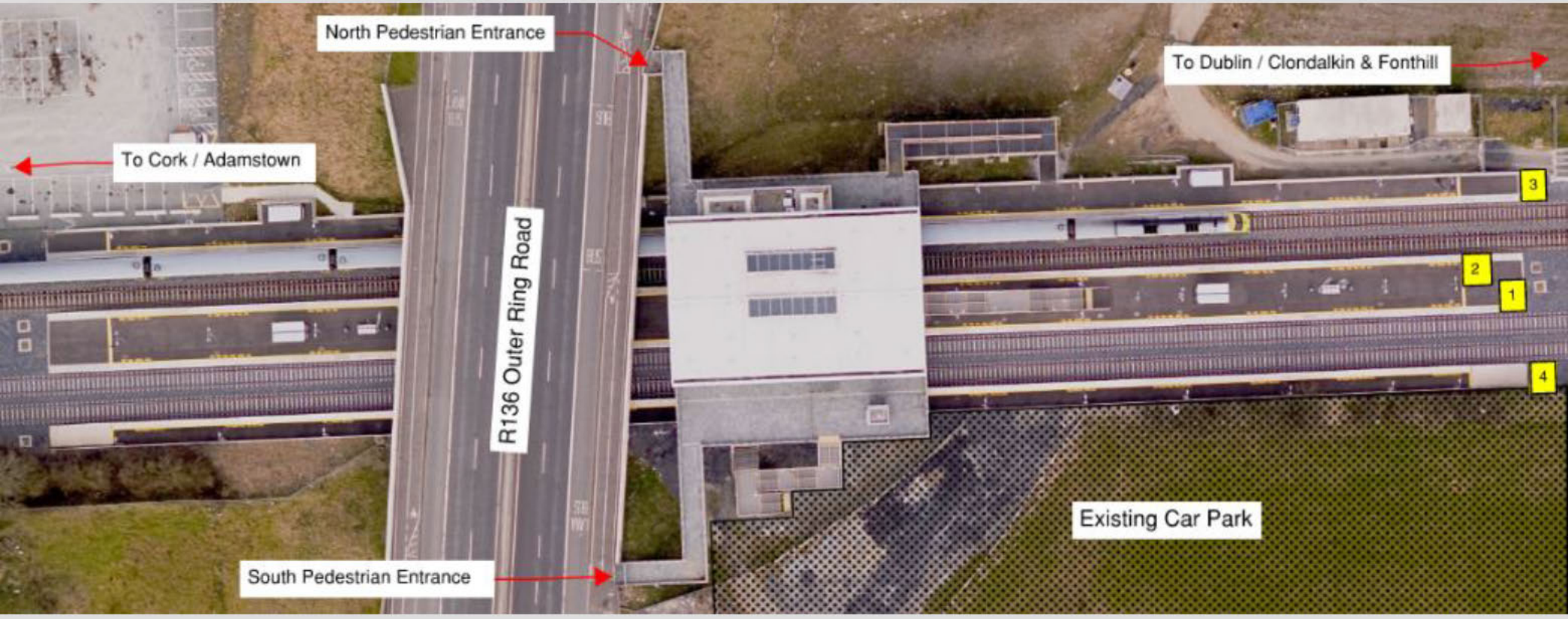
Irish Rail

Contents

Background to Kishoge Station

Milestone	Year
KRP Feasibility Study	2000
Submission of KRP Busines Case	2005
KRP Railway Order Lodged	2005
KRP Railway Order Granted	2006
Award of KRP Contract 2 (Kishoge Station)	2007
Commence Construction at Kishoge Station	2007
Substantial Completion of Kishoge Station	2009

Aerial View of Kishoge Station



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Kishoge Station – Facing West

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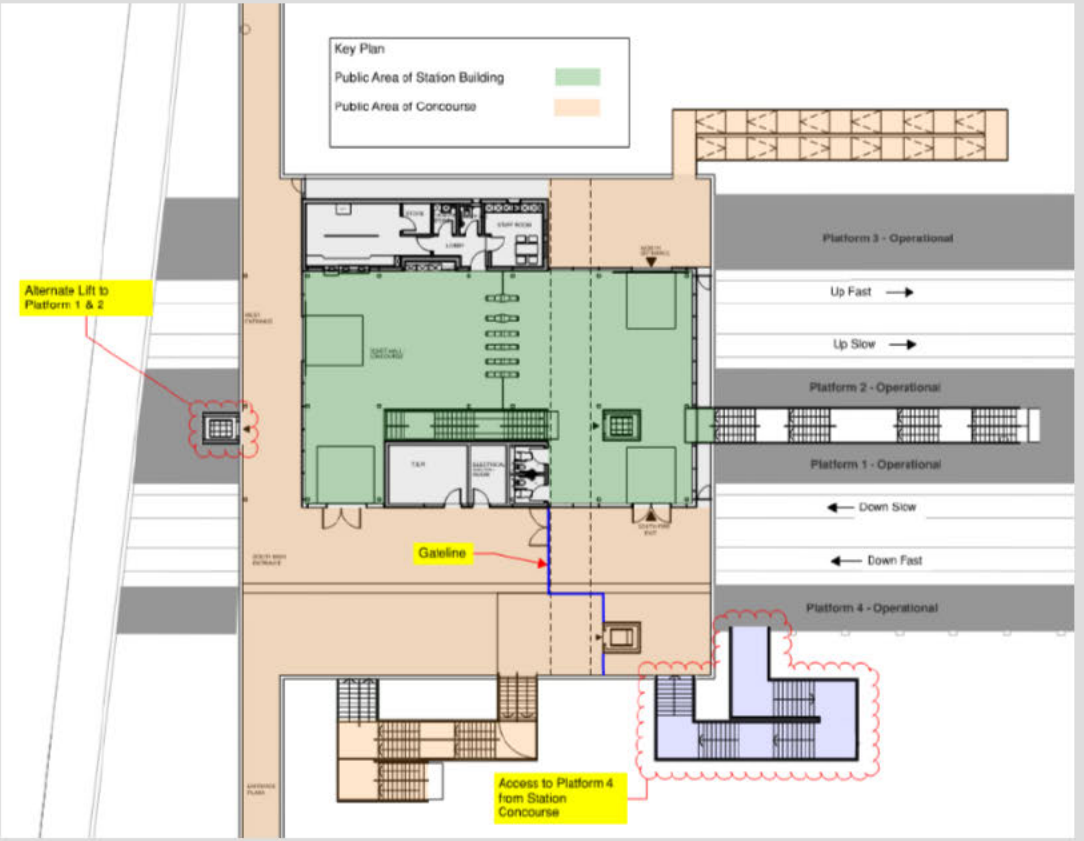
Original Project Scope (Option A-1)

- Customer Requirements Specification (CRS) from IÉ Stakeholders:
  - Kishoge station to open to passenger service based on the current track and platform operational assumptions
  - Station building and all platforms available for operational use
  - Study options for second lift to Platforms 1 & 2
  - Study options to separate paid/unpaid access to Platform 4 (additional stairs)
  - Replace or renew degraded, obsolescent or damaged assets
  - Enhance weather protection for electrical assets
  - Replace concourse glazing to mitigate vandalism risk
  - Improve internal & external surfaces due to slip potential
  - Local improvements from IÉ lessons learned
  - Design assumption to operate as unmanned station

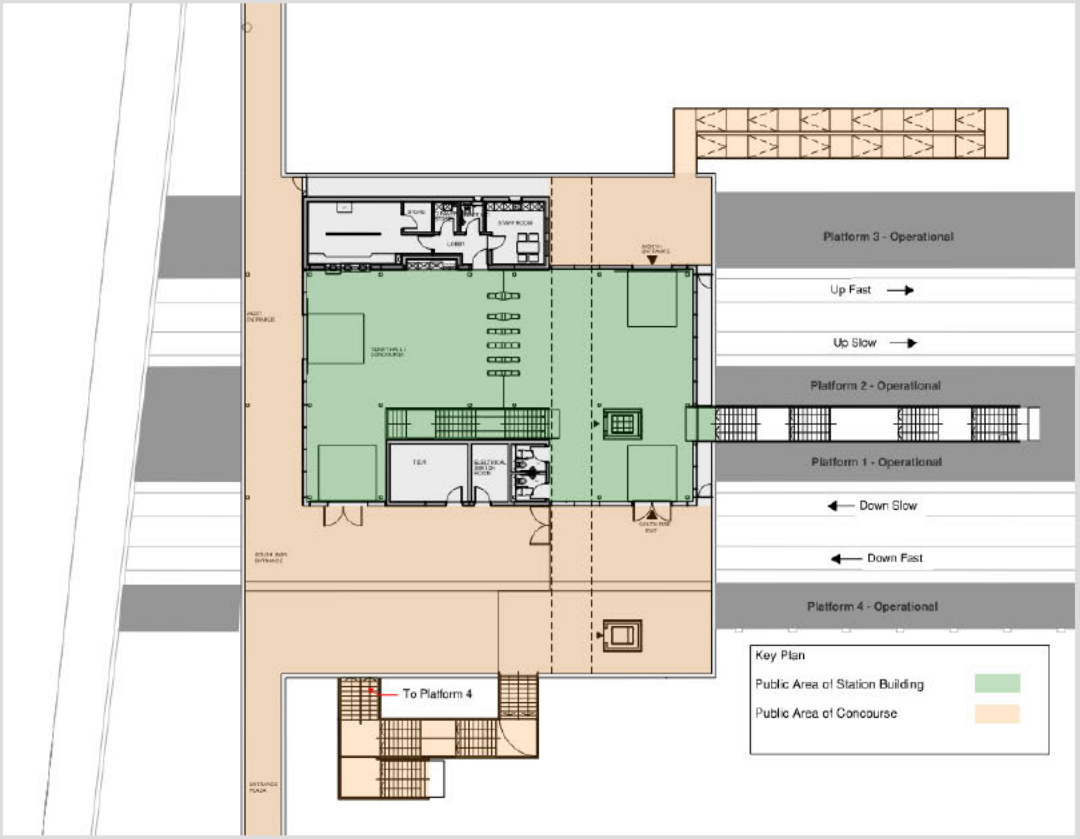
Option A-1

- Open station building concourse
  - All 4 entrances available
  - All concourse open to public
  - Replace all external cladding
  - Replace internal floor surfacing
- Open external concourse
  - 2 entrances from R136 Outer Ring Road
  - Replace all external surfacing
- Second lift to serve Platform 1 & 2
- All platforms suitable for operations for surfacing, lighting, CCTV & access
- Additional stairs to Platform 4
- Total Estimate €5.3M



Option A-2

- Open station building concourse
  - All 4 entrances available
  - All concourse open to public
  - Replace all external cladding
  - Replace internal floor surfacing
- Open external concourse
  - 2 entrances from R136 Outer Ring Road
  - Replace all external surfacing
- All platforms suitable for operations for surfacing, lighting, CCTV & access
- Omit 2nd lift and stairs from A-1
- [redacted]

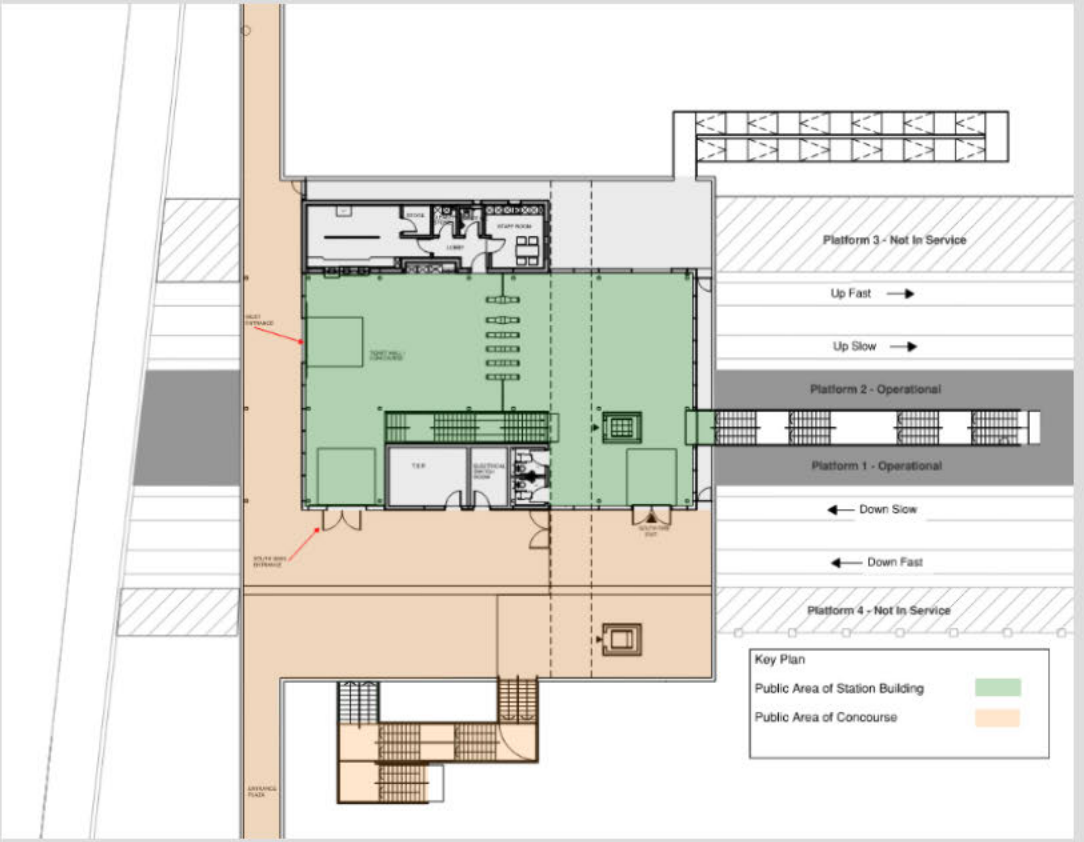


Options for Reducing Costs

- Revise or reduce CRS scope requirements
- Station Building
  - Do not open station building
  - Open part of station building
  - Leave existing (temporary) cladding in place
  - Replace part of external cladding
  - Repurpose section of building for other use
  - Clean existing floor surfaces & repair broken sections only
- External Concourse
  - Only open one entrance to station from R136
  - Clean existing ground surfaces & repair broken sections only
- Platforms
  - Open Platforms 1 & 2 only for operations
  - Do not upgrade Platforms 3 & 4 to normal operational standard i.e. minimal works only to make safe & support degraded operations only

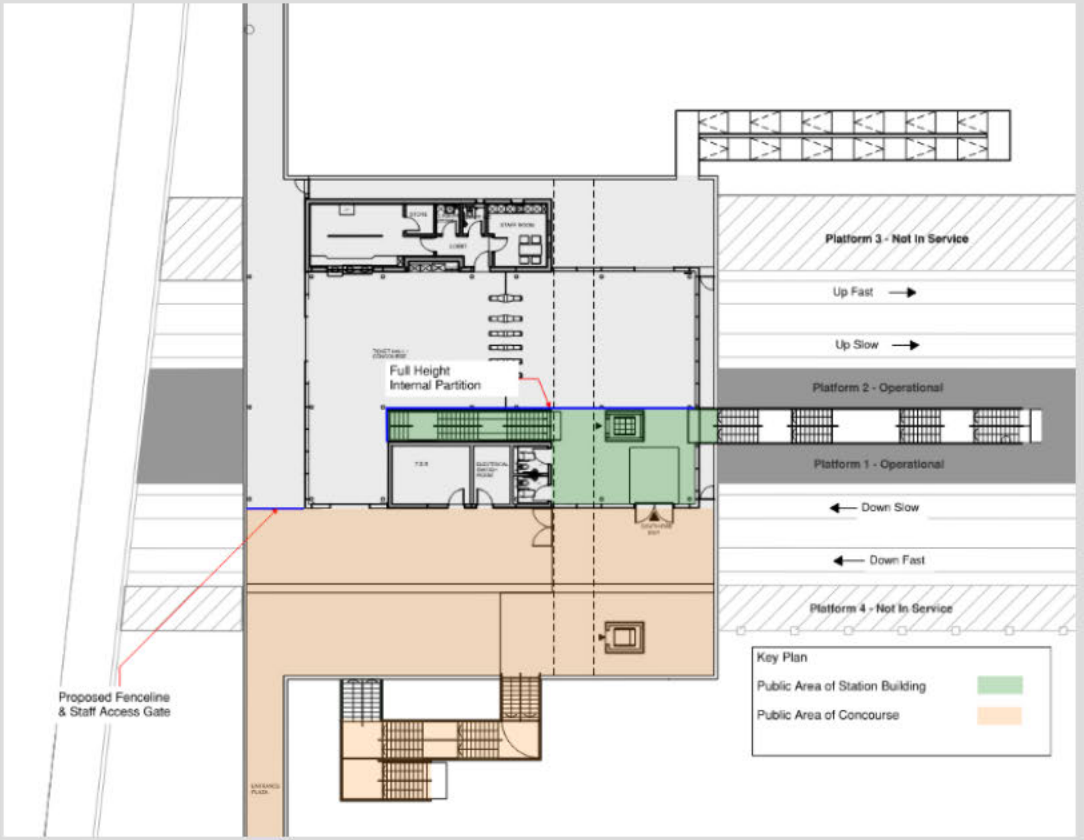
Option B – Do Intermediate (per GAF)

- Open station building concourse
  - 3 entrances (South, South Main & West)
  - All concourse open to public
  - Replace all external cladding
  - Repairs to damaged floor surfaces only
- Open external concourse
  - 2 entrances from R136 Outer Ring Road
  - Repairs to damaged external surfacing only
- Platforms 1 & 2 suitable for operations
- Platforms 3 & 4 minimal surfacing & lighting works for degraded operations
- Total Estimate €3.65M



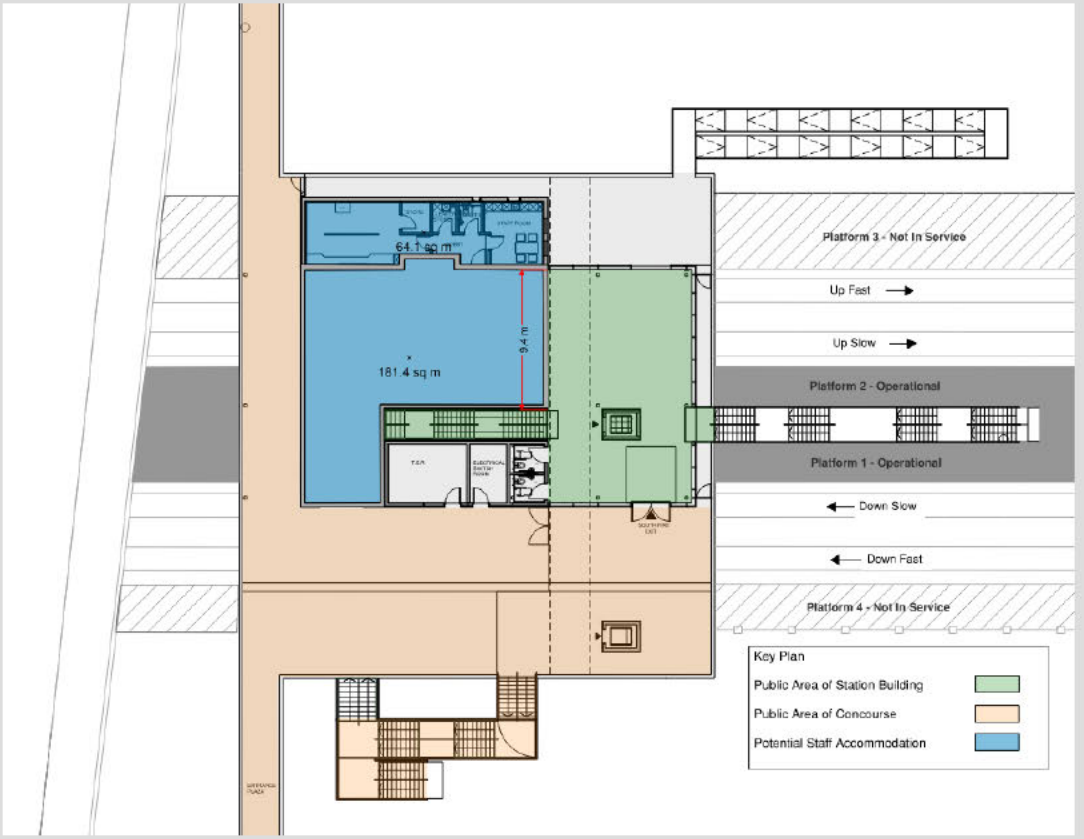
Option C - Do Minimum

- Open station building concourse
  - 1 entrance (South Main)
  - 15% of concourse open to public
  - Replace 25% of external cladding
  - 75% of existing cladding to remain
- Open external concourse
  - 1 entrance from R136 Outer Ring Road
  - Repairs to damaged external surfacing
- Platforms 1 & 2 suitable for operations
- Platforms 3 & 4 minimal surfacing & lighting works for degraded operations
- [redacted]



Option D – Alternate Do Intermediate

- Open station building concourse
  - 1 entrance (South Main)
  - 45% of concourse open to public
  - Potential to repurpose section of concourse
  - Replace external cladding
- Open external concourse
  - 2 entrances from R136 Outer Ring Road
  - Repairs to damaged external surfacing
- Platforms 1 & 2 suitable for operations
- Platforms 3 & 4 minimal surfacing & lighting works for degraded operations
- [redacted]



Options Comparison

Description	Option A 1 & 2	Option B	Option C	Option D
Open Platform 1 & 2 (incl. lighting, CCTV, PA, furniture & signage)	✓	✓	✓	✓
Open Platform 3 & 4 (incl. lighting, CCTV, PA, furniture & signage)	✓	✗	✗	✗
Open Station Building Concourse	✓	✓	Limited Section	Limited Section
Replace Existing Station Building Cladding (metal profile sheeting)	✓	✓	Limited Section	✓
Open Station External Concourse	✓	✓	Limited Section	✓
Replace Station Concourse Tiles/Paving (Internal & External)	✓	✗	✗	✗
Local Repairs Station Concourse Tiles/Paving (Internal & External)	✗	✓	✓	✓
Refurbish Ticket Office Block	✓	✗	✗	✗

Phase 6 Construction Budget

Description	Option A - 1	Option A - 2	Option B	Option C	Option D
Construction Costs					
Preliminaries (15%)					
Total Construction					
Contingency (30%)					
Inflation (3.5%)					
Sub Total					
VAT (13.5%)					
Track Protection Costs					
IÉ PM, IÉ Internal & Consultant Fees					
Phase 6 Budget					

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Timeline of Project Budget

Description	Jun 2021	Dec 2021	Jan 2022
Option A-1 (including additional lift & stairs)			
Option A-2 (excluding additional lift & stairs)			
Option B (Do Intermediate)			
Option C (Do Minimum)			
Option D (Do Alternate Intermediate)			

Updates to Options A-1 & A-2 include costs for:

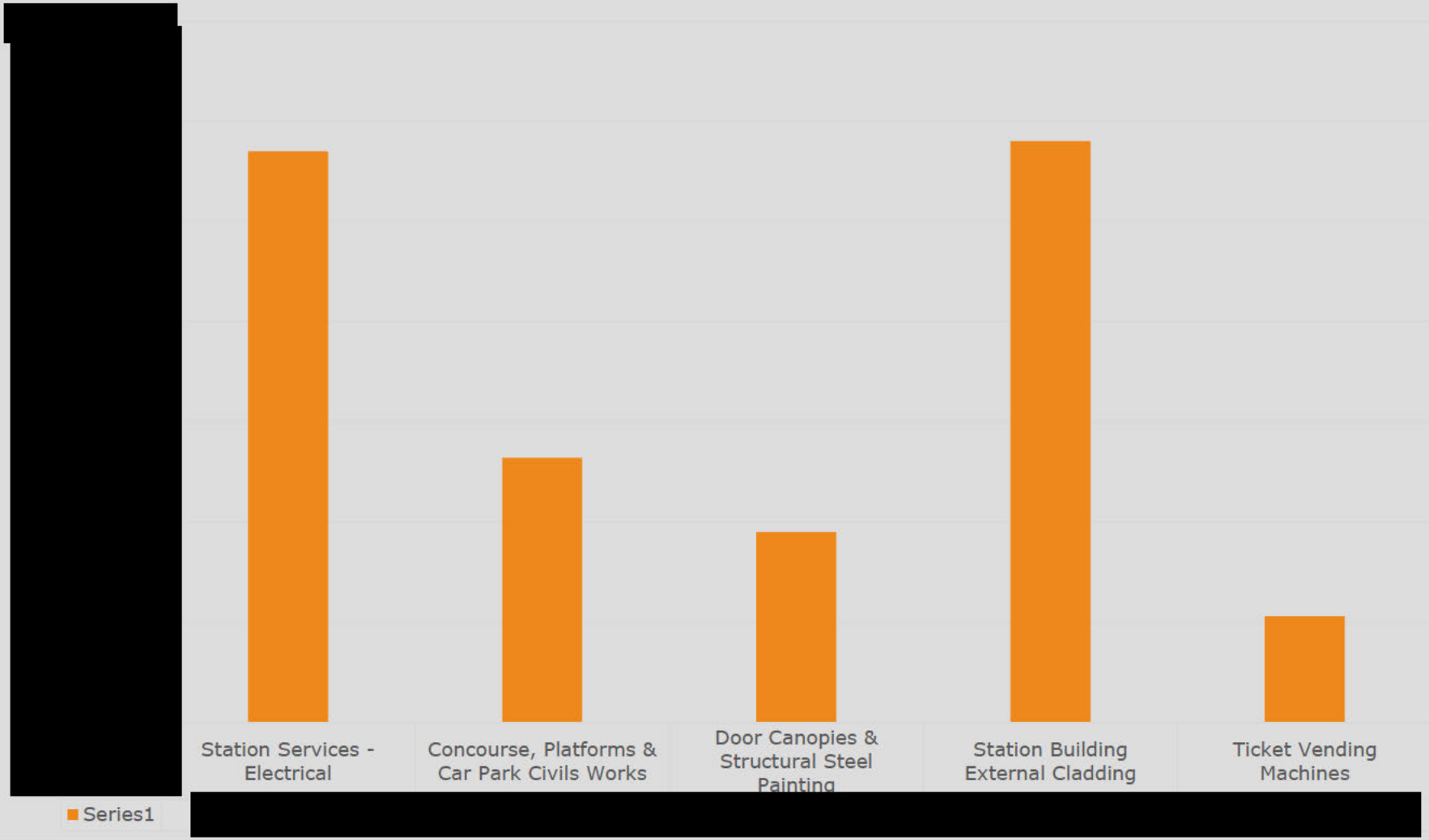
- Track protection
- Ticket Vending Machines & Validator Poles
- Inflation

Cost Breakdown Headings

Main Construction Cost Headings

- Station Services
  - Lighting & Emergency Lighting, CCTV, PA, & CIS
  - Lifts, Main Distribution Board
  - Fire & Security Alarm
  - Automated Doors
- Concourse, Platforms & Car Park Civils Works
- Door Canopies & Structural Steel Painting
  - Steel canopies to lifts, TER, electrical room
  - Painting of Station Building structural steel
- Station Building External Cladding
- Ticket Vending Machines

Option B – Main Construction Costs Breakdown



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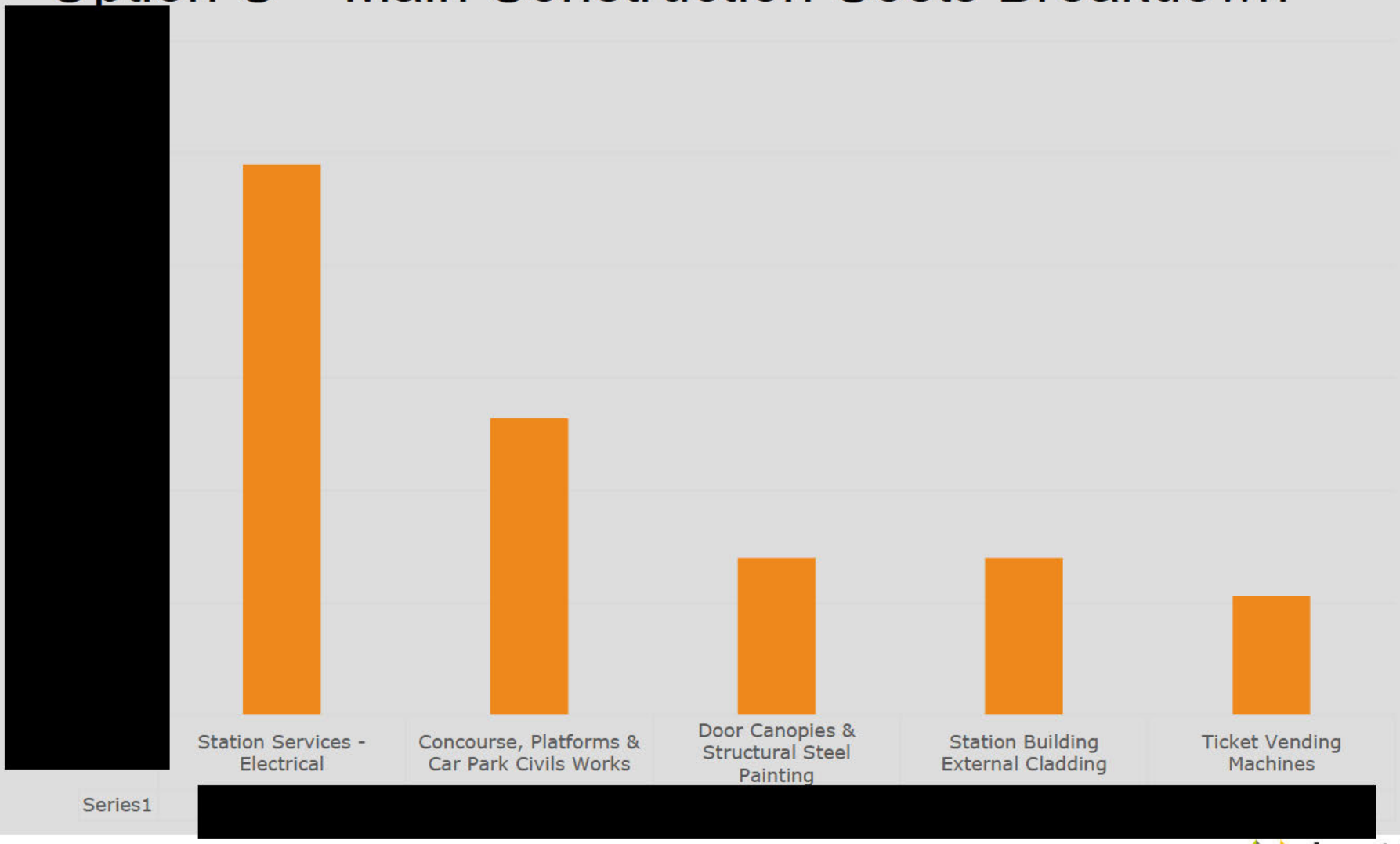
Option C – Main Construction Costs Breakdown



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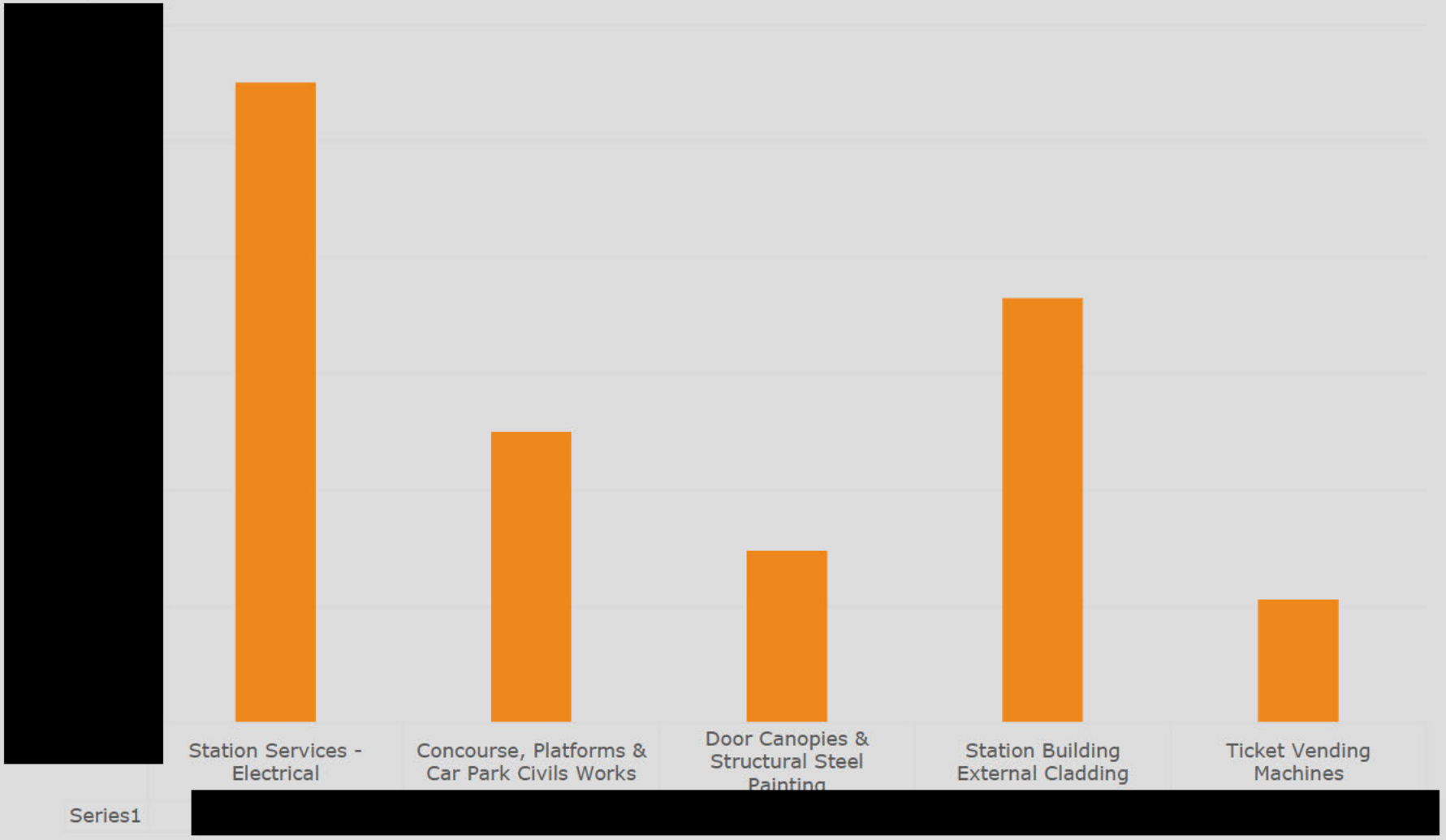
Option D – Main Construction Costs Breakdown



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Next Steps

- Phase 2
  - Decision on option to progress
  - Approval in principle from NTA to proceed
  - Update Phase 2 report to match revised scope/option
  - Submit Gateway Report seeking formal approval from NTA
- Phase 3 to 5
  - Update consultant scope of services & issue revised appointment [1 month]
  - Prepare preliminary, planning, detailed designs & tender documents [6 months]
  - IÉ Board Approval & NTA for construction phase & contract [August 22]
- Phase 6
  - Construct the Works [September 22 to May 23]

Appendix A – Existing Station Photos

Current State – Station Concourse

Blocked Drains & Damaged Tiles

Lift & Entrance Exposed to Elements

Current State – Station Building

Vandalism Damage to Automatic Door

Damage to Glazed Rainscreen

Current State - Platforms

Platform 4 Animal Burrows

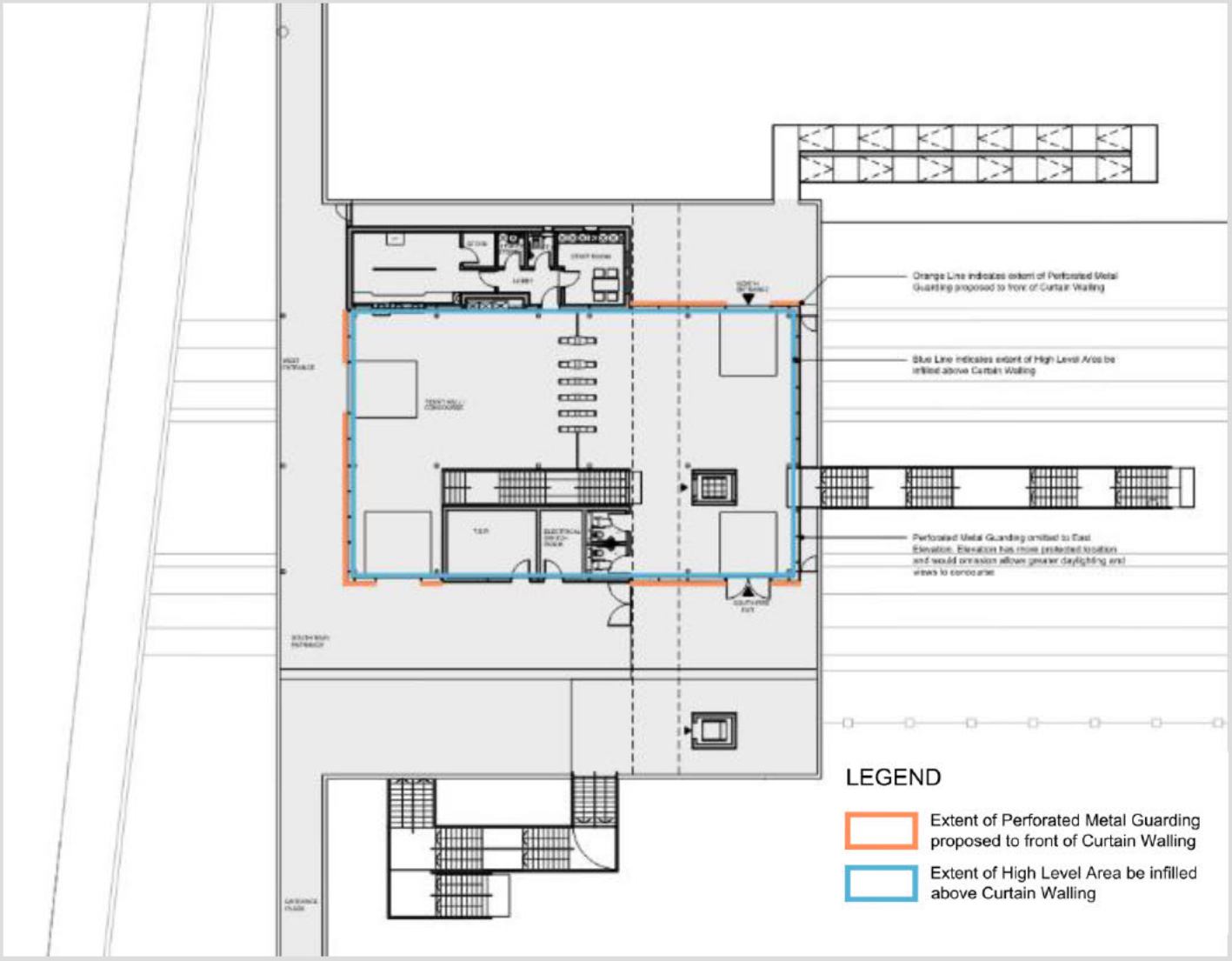
Platform 1 & 2 Water Ponding

Concourse Paving Internal/External

Platform 1 & 2

Appendix B – Option B Further Information

Station Building Cladding



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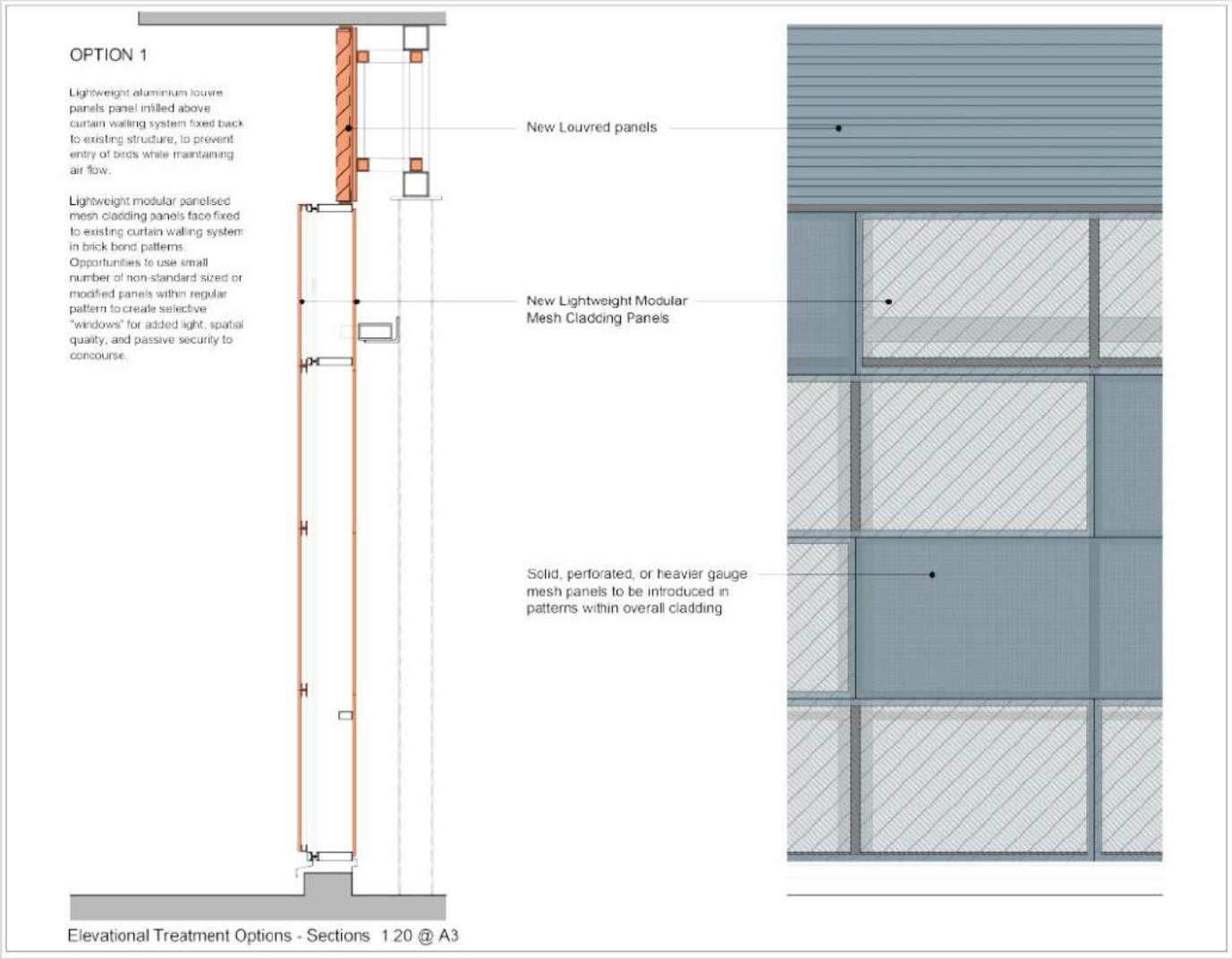
Option B – Cladding



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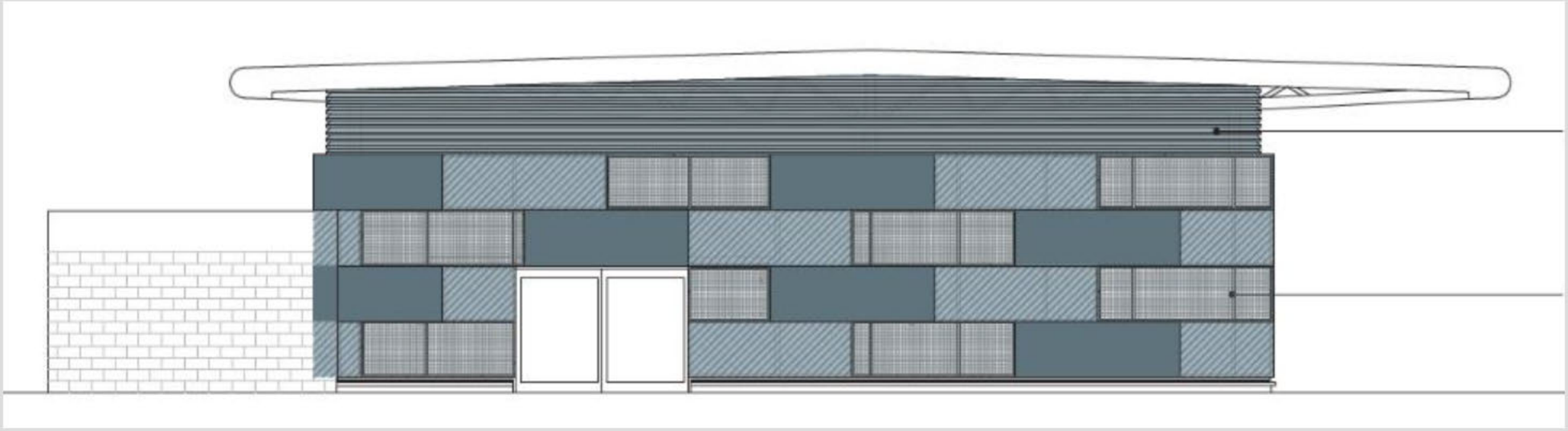
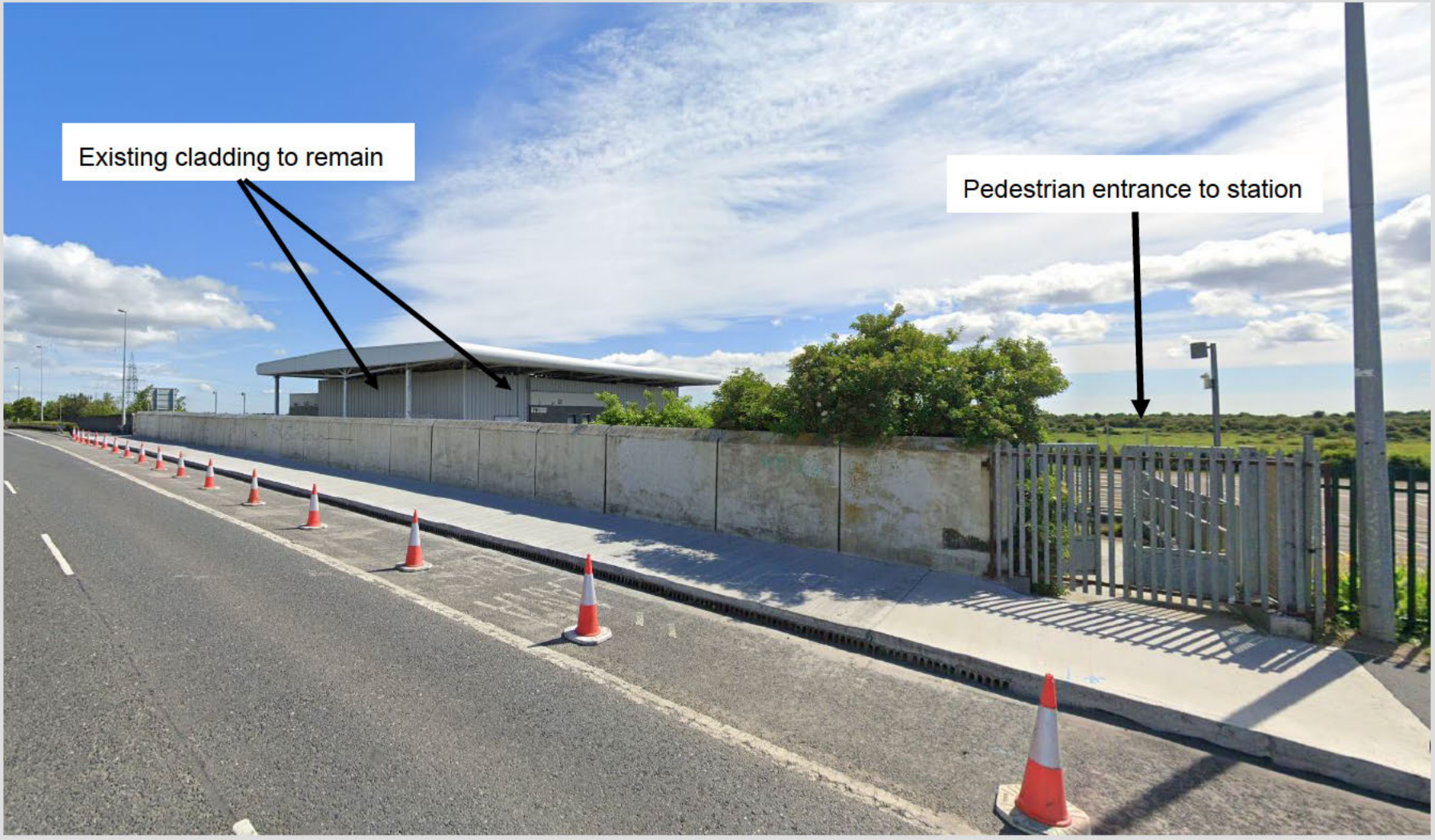
Option B – Cladding



Appendix C – Option C Further Information

Option C – Station Entrance



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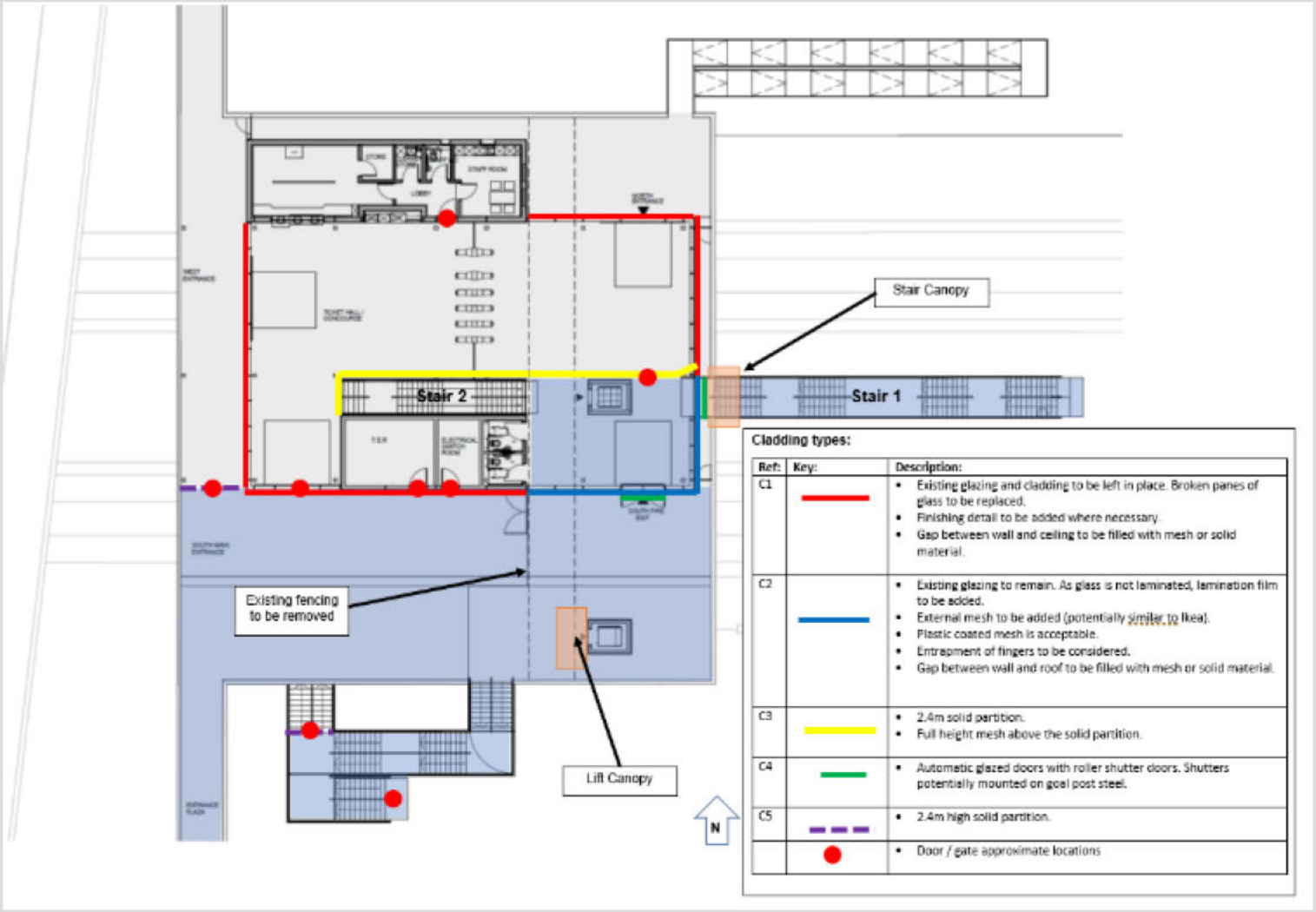
Option C – Cladding



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Option C – Cladding South Elevation [C2]

Option C – Cladding East Elevation [C2]

Option C – Cladding Internal [C3]

Option C – Cladding South Elevation [C5]

Option C – Existing Cladding to Remain

East Elevation

West Elevation