

FMG Ref: 273632 - S44580

21 September 2021

s.33(1)

City of Darebin

e: s.33(1)@darebin.vic.gov.au

Dear Prag,

Re: Cost estimates for the different site retention options to the land behind 42 James Street, NORTHCOTE, VIC 3070

FMG has been engaged by the City of Darebin to provide cost estimates and a summary letter for the different site retention options to the land behind 42 James Street, NORTHCOTE, VIC 3070 ('the subject land').

History

FMG initially attended site on 29 April 2019 to undertake an inspection of the subject land. Following the inspection, FMG issued an investigation report (herein referred to as the FMG Report), ref: S44580 – 265378, dated 4 June 2019, that outlined the findings of their investigation. The pertinent findings of the FMG Report are:

- The embankment / batter slope equates to a slope of approximately 1 in 1.6. The 'rule of thumb' safe batter slope, would be no steeper than 1 in 2, (that is, 1 vertical to 2 horizontal) therefore the actual slope is steeper than what would normally be deemed as safe.
- Conceptually, a retaining wall would be required at the east end of the land, so that the overall embankment / batter slope is reduced to an acceptably safe slope.
- It is recommended that a suitably designed and constructed retaining wall / system, in accordance with the Australian Standard AS4678 – 2002 Earth-retaining Structures ('AS4678') is required at the east end of the land in order to assist with providing adequate stability of the land.

Following the completion of the above investigation and the issue of the FMG Report, FMG was requested to complete further investigation works into different options available for works that can be

undertaken to stabilise the subject land. FMG engaged Landair Surveys ('Landair') to undertake a feature survey of the subject land as well as the surrounding areas. Landair issued a feature survey (job no: 2201223, dated 30 December 2020). Following completion of the survey, FMG engaged AS James Pty Ltd ('ASJ') to undertake a geotechnical investigation of the subject land and to provide recommendations for the different retention options available to retain the land. ASJ issued a report (report no: 120895, dated 29 March 2021) that outlined the findings of their investigation.

Upon completion of the investigations by Landair and ASJ, FMG provided an email to the City of Darebin, dated 22 April 2021, that outlined FMG's recommendations for the different site retention options available for the subject land. FMG provided the following options to the City of Darebin (refer to sketches SK01 to SK03, dated 22 April 2021, in Appendix A for more information):

- Option 1 – Installation of a permanent stabilised batter
The batter would be required to be given a uniform fall, with a maximum slope of 30°. A shotcrete capping could then be installed over the batter to prevent erosion of the batter. New surface and sub-surface drainage would also be required.
- Option 2 – Installation of retaining walls to create usable space for 3no. properties (retaining wall option A)
Install a retaining wall in an east-west direction, starting adjacent to the existing concrete retaining wall at the top of the batter and extend the wall across to the existing crib wall at the bottom of the batter. A second retaining wall can then be installed in a north-south direction from the first retaining wall to the corner of the property at 42 James Street, Northcote.
- Option 3 – Installation of retaining walls to create usable space for 3no. properties (retaining wall option B)
Install a retaining wall in an east-west direction, starting adjacent to the existing concrete retaining wall at the top of the batter and extend the wall east. The wall would then change direction and extend north, towards the property at 42 James Street, Northcote.

Cost Estimate of retention options

Following the provision of the above email, FMG was requested by the City of Darebin to provide cost estimates for the different land retention options. FMG engaged Amiens Consulting Pty Ltd ('Amiens') to provide cost estimates for the 3no. retention options outlined above. Amiens issued a Preliminary Construction Cost Estimates report, dated 20 September 2021, that outlined the cost estimates for each option, along with all assumptions and exclusions assumed during the cost estimate process. Refer to Appendix B for a copy of the report by Amiens along with a full breakdown of each cost estimate and their inclusions and exclusions. Amiens conclude that the conceptual high level cost estimate for the 3no. site retention options are:

- Option 1 - \$47,496.00
- Option 2 - \$150,882.00
- Option 3 - \$157,155.00

As can be seen above, options 2 and 3 are relatively similar in price and they are approximately three times more expensive than option 1. FMG has provided below a brief summary of the benefits and constraints associated with each option:

Option 1

- Benefits
 - This option is significantly less expensive than options 2 and 3.
 - The works involved are less extensive and intrusive than the works required for options 2 and 3. The timeframe to complete these works are expected to be shorter than that to complete options 2 and 3.
 - The machinery / equipment required to complete the works is expected to be smaller than that required for options 2 and 3.
 - Demolition of the boundary fences to Lots 1 and 2, to the south of the subject land is not expected to be required.
- Constraints
 - After completion of the works, the land will remain unusable as there would be a slope to the land with a concrete topping to it, so it couldn't be used for car parking, garden areas etc.
 - Due to the limited access to the subject land (i.e. via the narrow access laneways) it may be difficult to access the works area with some of the construction machinery / equipment required.

Options 2 and 3

- Benefits
 - These options will result in usable land being created which can be split between the adjoining properties if required (i.e. Lots 1 and 2 and 42 James Street, however the split of land varies across the sites and between options 2 and 3).
- Constraints
 - These options are significantly more expensive than option 1.
 - The works involved are more extensive and intrusive than the work required for option 1.
 - The machinery / equipment required to complete the works is expected to be larger than that required for option 1. Due to the limited access to the subject land (i.e. via the

Client Ref: City of Darebin
Site Address: 42 James Street, NORTHCOTE, VIC 3070

narrow access laneways) it may be difficult to access the works area with some of the construction machinery / equipment required.

- Demolition of the boundary fences to Lots 1 and 2, to the south of the subject land is required. These fences, along with other areas within Lots 1 and 2 will be required to be reinstated after completion of the works.


FMG notes that the above cost estimates are conceptual high level cost estimates only and do not include any costs associated with additional investigations (i.e. further geotechnical investigations will be required prior to undertaking detailed design) and detailed design that will be required prior to commencing construction works. FMG also notes that depending on the outcome of the additional geotechnical investigation and detailed design, the adopted option may vary from the final designed solution and consequently costs may vary due to this.

I trust the above answers your queries and that there is sufficient information to assist you with progressing with the determination for the proposed works for this area.

Yours sincerely,

FMG Engineering

Out of Scope



Stephen Muldoon

Senior Forensic Engineer

Enclosed:

- Sketches
- Preliminary Construction Cost Estimates report by Amiens

Client Ref: City of Darebin
Site Address: 42 James Street, NORTHCOTE, VIC 3070

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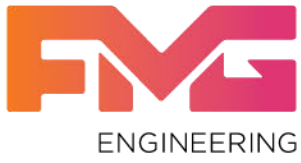
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Document Status

REV	AUTHOR	REVIEWER	ISSUE DATE
0	Stephen Muldoon BEng MIEI Senior Forensic Engineer	David Edwards BEng (Civil) PGradDip Mgt MIEAust Senior Forensic Engineer	21 September 2021



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your success.**

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SYDNEY

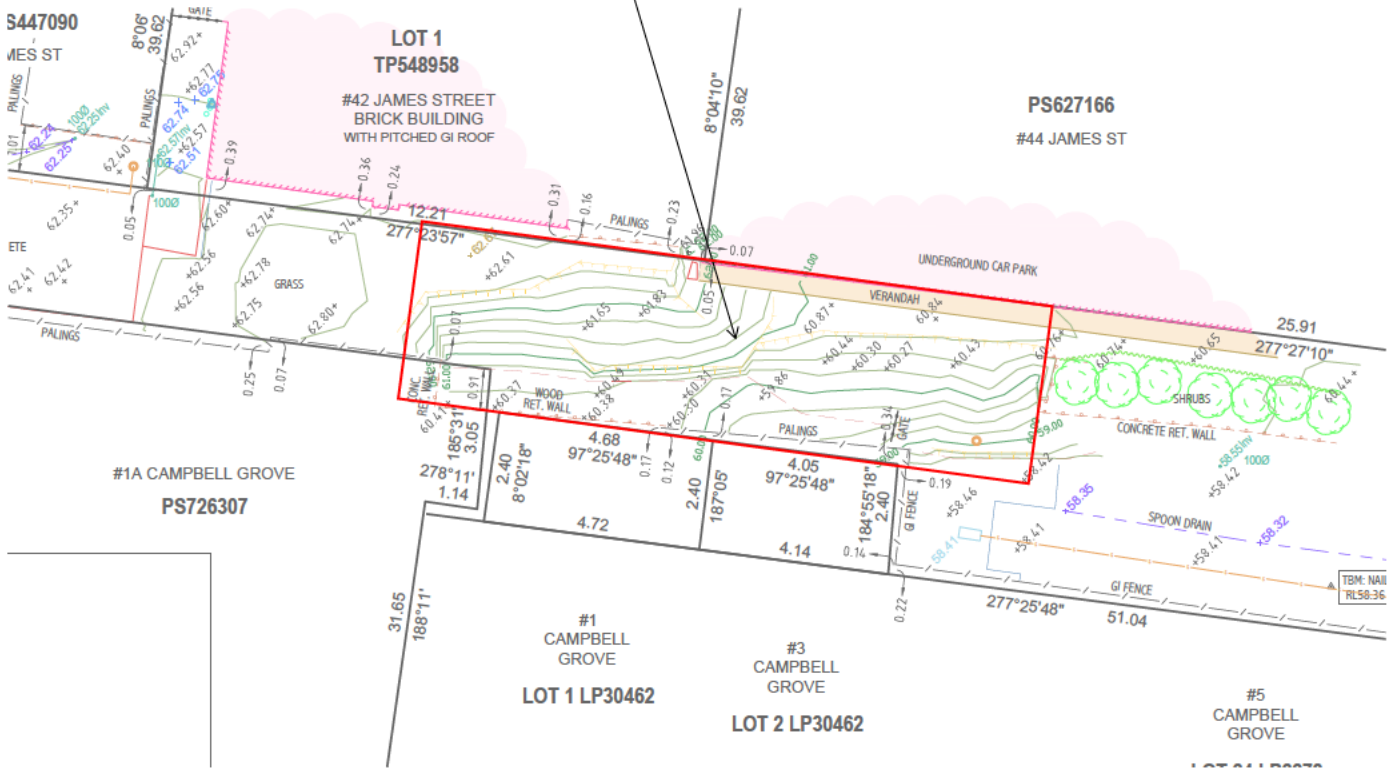
Appendix A

Sketches

Project North



Permanent batter to be installed in highlighted area, with a shotcrete capping layer. New surface and sub-surface drainage also to be installed.



Note:

Further geotechnical testing expected to be required along with structural design and certification

Option 1 - Installation of a Permanent Batter

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fmgengineering.com.au
 P 1300 975 878 | E forensics@fmgengineering.com.au
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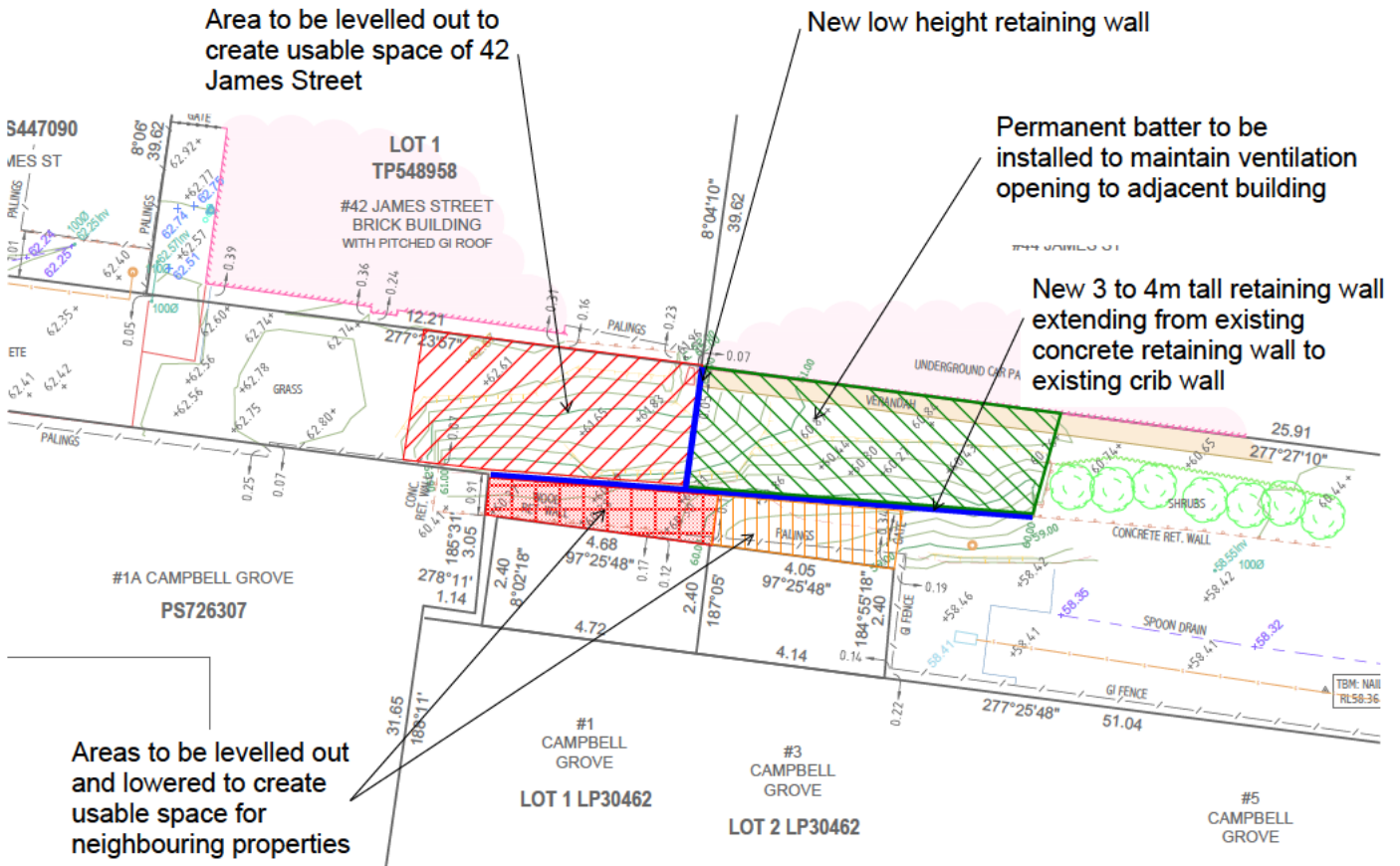
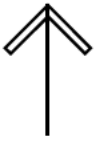


CLIENT
 City of Darebin
 PROJECT TITLE
 Stabilisation of Existing Batter
 SITE ADDRESS
 42 James Street, Northcote, VIC 3070
 DRAWING TITLE
 Option 1 - Installation of a Permanent Batter

DESIGNED	-	DRAWN	SM
CHECKED	-	No. OF SHEETS	1 of 3
SCALE	NTS @ A4	DATE STARTED	22/04/2021
SITE ID & JOB No.	S44580 - 273632	REV.	0
DRAWING No.	SK01		

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Project North



Note:
To facilitate this option it will be required to demolish the boundary fence to Lot 1 and Lot 2 LP30462 and undertake the works inside the back garden of these properties

Note:
Further geotechnical testing may be required along with structural design and certification

Option 2 - Retaining Wall Option A

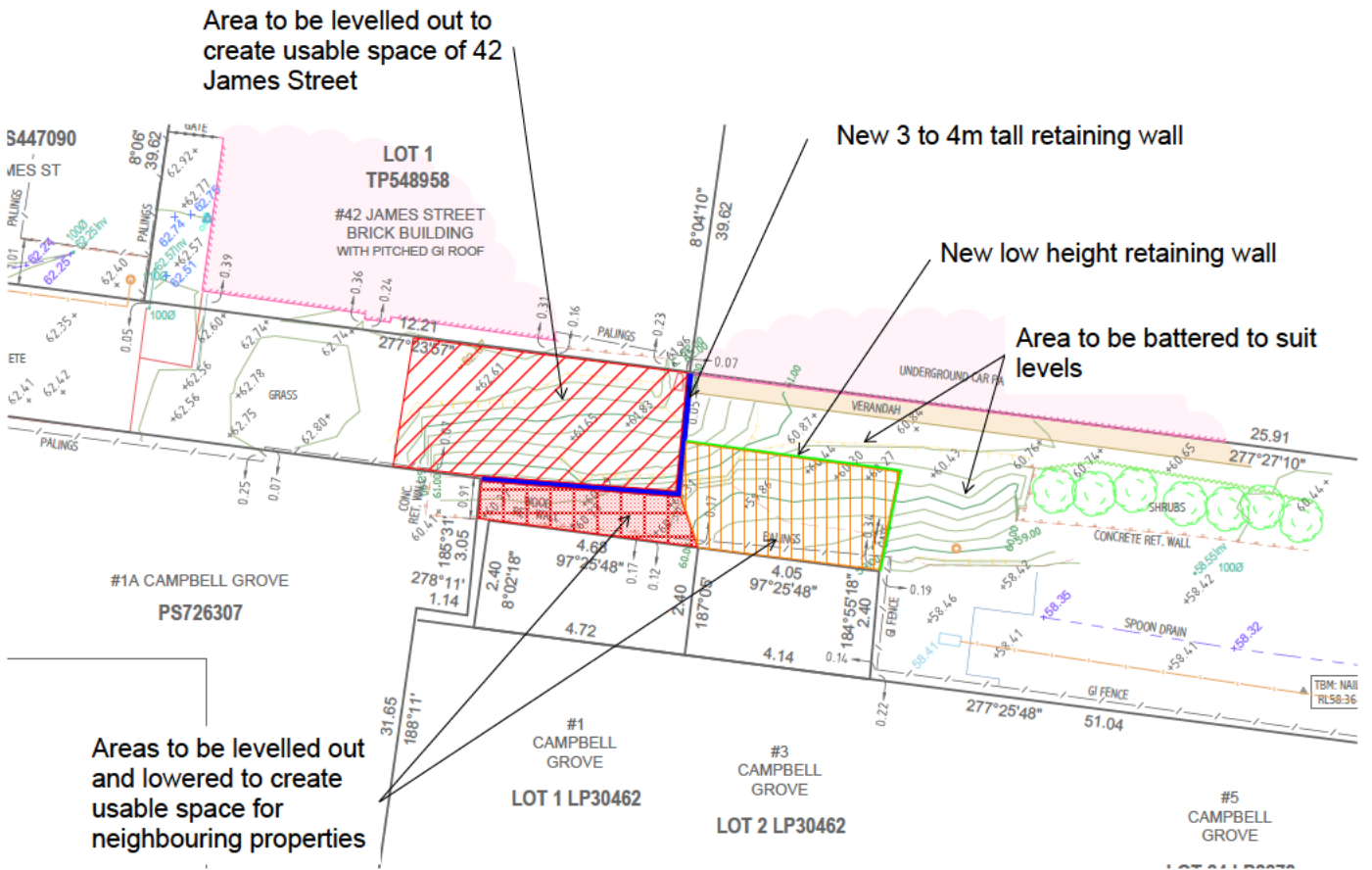
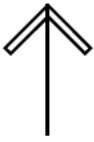
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CLIENT City of Darebin	DESIGNED - DRAWN SM
PROJECT TITLE Stabilisation of Existing Batter	CHECKED - No. OF SHEETS 2 of 3
SITE ADDRESS 42 James Street, Northcote, VIC 3070	SCALE NTS @ A4 DATE STARTED 22/04/2021
DRAWING TITLE Option 2 - Retaining Wall Option A	SITE ID & JOB No. S44580 - 273632 REV. 0
	DRAWING No. SK02

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Project North



Note:

To facilitate this option it will be required to demolish the boundary fence to Lot 1 and Lot 2 LP30462 and undertake the works inside the back garden of these properties

Note:

Further geotechnical testing may be required along with structural design and certification

Option 3 - Retaining Wall Option B

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CLIENT
City of Darebin
 PROJECT TITLE
Stabilisation of Existing Batter
 SITE ADDRESS
42 James Street, Northcote, VIC 3070
 DRAWING TITLE
Option 3 - Retaining Wall Option B

DESIGNED	-	DRAWN	SM
CHECKED	-	No. OF SHEETS	3 of 3
SCALE	NTS @ A4	DATE STARTED	22/04/2021
SITE ID & JOB No.	S44580 - 273632	REV.	0
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Appendix B

Preliminary Construction Cost Estimates report by Amiens



Stabilisation of Existing Batter

at Rear of

42 & 44 James Street, Northcote, Victoria

For

The City Of Darebin

Preliminary Construction Cost Estimates

For

Three Options

Prepared By;
Michael Pavey AAIQS

Amiens Consulting Pty Ltd
2/87 Rostrevor Parade, Mont Albert North, Vic, 3129

20th September 2021

Instructions Received

On instructions received from FMG Engineering, preliminary cost estimates have been prepared for the optional proposals for the stabilisation of the existing batter located at the rear of Nos. 42 & 44 James Street, Northcote.

The optional construction estimates have been prepared as a desk-top review of the FMG Drawings and Reports as follows:

- a) Layout drawings SK01 Sheets 1 to 3, dated 22nd April 2021 prepared by FMG Engineering, showing the 3 Options
- b) Feature Survey Plan dated 30th December 2020, prepared by Landair Surveys.
- c) Preliminary Geotechnical Investigation dated 29th March 2021 prepared by A. S. James Pty Ltd

Optional Costs Summary

The estimated total costs of the optional proposals are:

OPTION 1 – Installation of a Sprayed Concrete Permanent Batter to the total area of the existing Batter, including fences, drainage and making good landscaping	\$47,496.00
OPTION 2 – Retaining Wall Option A comprising rear of 42 James Street levelled and Finished With Bitumen, Sprayed Concrete Permanent batter to area rear of 44 James street, rear of 1 & 3 Campbell Grove levelled and incorporated into gardens including retaining walls, fences, drainage & landscaping	\$150,882.00
OPTION 2 – Retaining Wall Option B comprising rear of 42 James Street levelled and Finished With Bitumen, Sprayed Concrete Permanent batter to area rear of 44 James Street, rear of 1 Campbell Grove levelled and incorporated into garden, the garden to 3 Campbell Grove levelled and expanded, including retaining walls, fences, drainage & landscaping	\$157,155.00

The Detail costing of each Option and Summary is shown in Appendix “A”.

Basis of the Estimates

The cost estimates include allowances, separately identified, for the following:

- Preliminaries, Supervision and Builders Margin– 22%
- Consultant and Permit Fees for Construction Works – 15%
- Contingency - 10%
- Council Direct Costs – 7%
- GST – 10%

The cost estimates are based on the following scope and assumptions:

1. Access being freely available from both the East and West rear lanes reached from James Street.
2. The 700 mm deep fill layer noted in the geotechnical report is removed and disposed in Options 2 & 3.
3. The works to the rear of #1 & #3 Campbell Grove are based on a finished surface level of 58.40
4. In Options 2 & 3 access for constructing bored piers will be required from the rear gardens to #1 & #3 Campbell Grove. The gardens are rebuilt after construction.
5. The works being undertaken by a Single Contractor selected by competitive tender.
6. The construction work is undertaken in one stage with vacant possession of the Site
7. Rates and costs priced at Current Rates at September 2021

Basis of the Estimates (Cont'd)

The estimate excludes allowances for:

- Staged construction works
- Works outside the nominated site areas
- Restricted work hours
- Legal Fees and fees incurred in preparation of preliminary reports
- Works to the buildings on Nos #42 and #44 James Street and Nos #1 and #3 Campbell Grove.
- Alterations to existing drains, water, electricity, or telecommunication services
- Additional costs arising from Health Department regulations or restrictions imposed due to COVID-19.

Out of Scope

s.33(1)

Amiens Consulting Pty Ltd

APPENDIX "A"

ESTIMATE SUMMARY & DETAILS

Stabilisation Of Existing Batter - Options
42 James Street Northcote Vic 3070
Preliminary Construction Cost Estimates



Total Optional Cost Summary

Ref.	Area	Option 1 \$	Option 2 \$	Option 3 \$
	<u>Stabilisation Of Batter Works Contract</u>			
A	Site Preparation, Excavation, Filling, Surfacing, Etc.	\$ 12,430	\$ 19,235	\$ 21,315
B	Retaining Walls & Fencing	\$ 1,720	\$ 42,405	\$ 41,470
C	Drainage	\$ 9,450	\$ 9,450	\$ 10,885
D	Landscaping	\$ 1,400	\$ 6,580	\$ 7,060
	Stabilisation Works Trade Totals	\$ 25,000	\$ 77,670	\$ 80,730
E	Preliminaries and Builders Margin - 22%	\$ 5,500	\$ 17,087	\$ 17,761
	Total of Anticipated Rectification Contract Works	\$ 31,900	\$ 101,337	\$ 105,551
F	Consultants Fees for Construction Works - 15%	\$ 4,785	\$ 15,201	\$ 15,833
G	Contingency - 10%	\$ 3,669	\$ 11,654	\$ 12,138
H	Council Direct Costs - 7%	\$ 2,825	\$ 8,973	\$ 9,347
	Nett Construction Cost	\$ 43,178	\$ 137,165	\$ 142,868
I	GST - 10%	\$ 4,318	\$ 13,717	\$ 14,287
	Total of Project Works	\$ 47,496	\$ 150,882	\$ 157,155

The estimate is based upon the following documents:

- 1 Layout drawings SK01 Sheets 1 to 3, dated 22nd April 2021 prepared by FMG Engineering, showing the 3 Options
- 2 Feature Survey Plan dated 30th December 2020, prepared by Landair Surveys
- 3 Preliminary Geotechnical Investigation dated 29th March 2021 prepared by A. S. James Pty Ltd
- 4 The estimate is based upon the works being undertaken by a Single Contractor selected by competitive tender.
The construction work is undertaken in one stage with vacant possession of the Site
The estimate has been priced at Current Rates at September 2021
- 5 The estimate is based on access being freely available from both the East and West rear lanes from James Street
- 6 The works to the rear of #1 & #3 Campbell Grove are based on a finished surface level of 58.40
- 7 The estimate excludes allowances for:
 - Staged construction works
 - Works outside the nominated site areas
 - Restricted work hours
 - Legal Fees and fees incurred in preparation of preliminary reports
 - Works to the buildings on Nos #42 and #44 James Street and Nos #1 and #3 Campbell Grove.
 - Alterations to existing drains, water, electricity or telecommunication services
 - Additional costs arising from Health Department regulations or restrictions imposed due to COVID-19.

Stabilisation Of Existing Batter - Options
42 James Street Northcote Vic 3070
Preliminary Construction Cost Estimates



OPTION 1 - INSTALLATION OF A PERMANENT BATTER

Item Details

Item	Description	Unit	Qty	Rate	\$
Option 1 - Earthworks, Permanent Batters, Fencing and Drainage Works					
Site Preparation, Excavation, Filling, Surfacing, Etc.					
<u>Preparation</u>					
1	Clear site of all surface rubbish and disposal	m2	50	25.00	\$ 1,250
2	Demolish timber retaining wall and foundations to #1 Campbell Grove including supports	lin m	4	250.00	\$ 1,000
3	Protect plants and landscaping as necessary to garden areas of #1 & #3 Campbell Grove	Item			\$ 700
4	Demolish timber paling fence and dispose	lin m	6	20.00	\$ 120
5	Allow for protecting the existing foundations to #42 & #44 James Street	lin m	20	35.00	\$ 700
<u>Excavation & Filling</u>					
6	Excavate to clear vegetation to flat grassed area south of #42 James Street and dispose	m2	18	15.00	\$ 270
7	Excavate to clear vegetation to battered area and dispose	m2	50	20.00	\$ 1,000
8	Excavate to reduce levels to form slope including using excavated material as filling to form batter (assumed up to 500 mm excavation and filling over area)	m2	50	50.00	\$ 2,500
9	Consolidate and trim surface of filling or excavation to batter	m2	50	30.00	\$ 1,500
<u>Permanent Batter</u>					
10	Allow for preparation of surface, lay reinforcement and provide 75 mm shotcrete layer as permanent covering of batter	m2	50	60.00	\$ 3,000
11	Allow for making good to existing perimeters	lin m	26	15.00	\$ 390
Site Preparation, Excavation, Filling, Surfacing, Etc. Total					\$ 12,430
Retaining Walls & Fencing					
<u>Retaining Wall</u>					
12	No new retaining walls required	Item			Excluded
<u>Fencing</u>					
13	Make good existing paling fence	lin m	6	95.00	\$ 570
14	New timber paling fence to new boundaries to #1 & #3 Campbell Grove	lin m	10	85.00	\$ 850
15	New fence/barrier between battered area to rear of #44 James Street and existing bank	lin m	3	100.00	\$ 300
Retaining Walls & Fencing - Total					\$ 1,720
<u>Drainage</u>					
16	New spoon drain against existing wall to #42 James Street laid to fall to West drained to existing concrete	lin m	12	125.00	\$ 1,500
17	New concrete spoon drain against existing wall to #44 James Street laid to fall to East.	lin m	8	125.00	\$ 1,000
18	New concrete spoon drain to base of batter to #1 & #3 Campbell Grove laid to falls	lin m	12	125.00	\$ 1,500
19	Grated pit to end of spoon drain	No	2	500.00	\$ 1,000
20	100 mm PVC Stormwater drain laid in trench in connection from pits to existing drain	lin m	10	85.00	\$ 850
21	Connection of drain to existing stormwater pit	No	2	300.00	\$ 600
22	Allow for additional drainage	Item			\$ 3,000
Drainage - Total					\$ 9,450
<u>Landscaping</u>					
23	Allow for new grassed area to replace existing area to rear of #42 James Street including grading, top soiling & seeding	m2	11	40.00	\$ 440
24	Allow for making good landscaping and decking to existing gardens	Item			\$ 960
Landscaping - Total					\$ 1,400
Option 1 Stabilisation Works Trade Totals					\$ 25,000

Stabilisation Of Existing Batter - Options
42 James Street Northcote Vic 3070
Preliminary Construction Cost Estimates



OPTION 2 - RETAINING WALL OPTION A

Item Details

Item	Description	Unit	Qty	Rate	\$
Option 2 - Earthworks, Retaining Walls, Permanent Batters, Fencing and Drainage Works					
Site Preparation, Excavation, Filling, Surfacing, Etc.					
<u>Preparation</u>					
1	Clear site of all surface rubbish and disposal	m2	50	25.00	\$ 1,250
2	Demolish timber retaining wall and foundations to #1 Campbell Grove including supports	lin m	4	300.00	\$ 1,200
3	Clear landscaping as necessary to garden areas of #1 & #3 Campbell Grove, protect the areas that may remain	Item			\$ 2,000
4	Demolish existing fence and dispose	lin m	15	20.00	\$ 300
5	Allow for protecting the existing foundations to #42 & #44 James Street	lin m	20	50.00	\$ 1,000
<u>Excavation & Filling</u>					
6	Excavate to clear vegetation to flat grassed area south of #42 James Street and dispose	m2	18	15.00	\$ 270
7	Excavate to clear vegetation to existing battered area and dispose	m2	50	20.00	\$ 1,000
8	Excavate to remove loose backfill layer up to 700 mm deep and dispose including waste management fees	m2	50	85.00	\$ 4,250
9	Excavate to reduce levels, dispose including waste management fees	m3	8	110.00	\$ 880
10	Supply and lay consolidated imported filling to make up levels	m3	53	65.00	\$ 3,445
11	Consolidate and trim surface of filling or excavation to falls	m2	50	10.00	\$ 500
12	Consolidate and trim surface of filling or excavation to batter	m2	18	30.00	\$ 540
<u>Permanent Batter</u>					
13	Allow for preparation of surface, lay reinforcement and provide 75 mm shotcrete layer as permanent covering of batter	m2	18	50.00	\$ 900
14	Allow for making good to existing car park slab	lin m	7	15.00	\$ 105
<u>Surfacing</u>					
15	One coat bitumen surfacing laid on consolidated surface with 100 mm crushed rock bed to falls	m2	39	35.00	\$ 1,365
16	Make good against concrete or brickwork	lin m	23	10.00	\$ 230
Site Preparation, Excavation, Filling, Surfacing, Etc. Total					\$ 19,235
Retaining Walls & Fencing					
<u>Retaining Wall</u>					
17	Retaining wall up to 2000 mm high comprising 80 mm precast concrete sleepers 200 mm high with H channel supports at 1800 mm centres cast into bored lined reinforced concrete pier up to 2 metres deep	lin m	3	1,550.00	\$ 4,650
18	Retaining wall up to 4000 mm high comprising 100 mm precast concrete sleepers 200 mm high with H channel supports at 1500 mm centres cast into bored reinforced concrete pier up to 2 metres deep	lin m	12	2,160.00	\$ 25,920
19	Extra for granular backfilling to rear of retaining wall	m3	66	85.00	\$ 5,610
20	Allow for waterproofing membrane and treatment to rear of concrete sleeper wall retaining wall	m2	54	55.00	\$ 2,970
21	Fabric covered agriculture drain laid to falls in granular material at base of retaining wall, including ends, junctions, bends and connection to existing drain	lin m	17	40.00	\$ 680
<u>Fencing</u>					
22	New timber paling fence 1800 mm high to top of retaining wall	lin m	15	95.00	\$ 1,425
23	New timber paling fence to new boundaries to #1 & #3 Campbell Grove	lin m	10	85.00	\$ 850
24	New fence/barrier between battered area to rear of #44 James Street and existing bank	lin m	3	100.00	\$ 300
Retaining Walls & Fencing - Total					\$ 42,405
<u>Drainage</u>					
25	New spoon drain against existing wall to #42 James Street laid to fall to West drained to existing concrete	lin m	12	125.00	\$ 1,500
26	New concrete spoon drain against existing wall to #44 James Street laid to fall to East.	lin m	8	125.00	\$ 1,000
27	New concrete spoon drain against retaining wall to #1 & #3 Campbell Grove laid to falls	lin m	12	125.00	\$ 1,500
28	Grated pit to end of spoon drain	No	2	500.00	\$ 1,000
29	100 mm PVC Stormwater drain laid in trench in connection from pits to existing drain	lin m	10	85.00	\$ 850
30	Connection of drain to existing stormwater pit	No	2	300.00	\$ 600
31	Allow for additional drainage	Item			\$ 3,000
Drainage - Total					\$ 9,450
<u>Landscaping</u>					
32	Allow for landscaping to enlarged rear garden area to #1 Campbell Grove including grading, top soiling, seeding and planting	m2	17	120.00	\$ 2,040
33	Allow for landscaping to enlarged rear garden area to #3 Campbell Grove including grading, top soiling, seeding and planting	m2	17	120.00	\$ 2,040
34	Extra for new decking to #3 Campbell Grove	Item			\$ 2,500
Landscaping - Total					\$ 6,580
Option 2 Stabilisation Works Trade Totals					\$ 77,670

Stabilisation Of Existing Batter - Options
42 James Street Northcote Vic 3070
Preliminary Construction Cost Estimates



OPTION 3 - RETAINING WALL OPTION B

Item Details

Item	Description	Unit	Qty	Rate	\$
Option 3 - Earthworks, Retaining Walls, Permanent Batters, Fencing and Drainage Works					
Site Preparation, Excavation, Filling, Surfacing, Etc.					
<u>Preparation</u>					
1	Clear site of all surface rubbish and disposal	m2	50	25.00	\$ 1,250
2	Demolish timber retaining wall and foundations to #1 Campbell Grove including supports	lin m	4	300.00	\$ 1,200
3	Clear landscaping as necessary to garden areas of #1 & #3 Campbell Grove, protect the areas that may remain	Item			\$ 2,000
4	Demolish existing fence and dispose	lin m	15	20.00	\$ 300
5	Allow for protecting the existing foundations to #42 & #44 James Street	lin m	20	50.00	\$ 1,000
<u>Excavation & Filling</u>					
6	Excavate to clear vegetation to flat grassed area south of #42 James Street and dispose	m2	18	15.00	\$ 270
7	Excavate to clear vegetation to existing battered area and dispose	m2	50	20.00	\$ 1,000
8	Excavate to remove loose backfill layer up to 700 mm deep and dispose including waste management fees	m2	50	85.00	\$ 4,250
9	Excavate to reduce levels, dispose including waste management fees	m3	17	110.00	\$ 1,870
10	Supply and lay consolidated imported filling to make up levels	m3	71	65.00	\$ 4,615
11	Consolidate and trim surface of filling or excavation to falls	m2	50	10.00	\$ 500
12	Consolidate and trim surface of filling or excavation to batter	m2	17	30.00	\$ 510
<u>Permanent Batter</u>					
13	Allow for preparation of surface, lay reinforcement and provide 75 mm shotcrete layer as permanent covering of batter	m2	17	50.00	\$ 850
14	Allow for making good to existing building slab	lin m	7	15.00	\$ 105
<u>Surfacing</u>					
15	One coat bitumen surfacing laid on consolidated surface with 100 mm crushed rock bed to falls	m2	39	35.00	\$ 1,365
16	Make good against concrete or brickwork	lin m	23	10.00	\$ 230
Site Preparation, Excavation, Filling, Surfacing, Etc. Total					\$ 21,315
Retaining Walls & Fencing					
<u>Retaining Wall</u>					
17	Retaining wall up to 2000 mm high comprising 80 mm precast concrete sleepers 200 mm high with H channel supports at 1800 mm centres cast into bored lined reinforced concrete pier up to 2 metres deep	lin m	4	1,550.00	\$ 6,200
18	Retaining wall up to 4000 mm high comprising 100 mm precast concrete sleepers 200 mm high with H channel supports at 1500 mm centres cast into bored reinforced concrete pier up to 2 metres deep	lin m	11	2,160.00	\$ 23,760
19	Extra for granular backfilling to rear of retaining wall	m3	63	85.00	\$ 5,355
20	Allow for waterproofing membrane and treatment to rear of concrete sleeper wall retaining wall	m2	52	55.00	\$ 2,860
21	Fabric covered agriculture drain laid to falls in granular material at base of retaining wall, including ends, junctions, bends and connection to existing drain	lin m	18	40.00	\$ 720
<u>Fencing</u>					
22	New timber paling fence 1800 mm high to top of retaining wall	lin m	15	95.00	\$ 1,425
23	New timber paling fence to new boundaries to #1 & #3 Campbell Grove	lin m	10	85.00	\$ 850
24	New fence/barrier between battered area to rear of #44 James Street and existing bank	lin m	3	100.00	\$ 300
Retaining Walls & Fencing - Total					\$ 41,470
<u>Drainage</u>					
25	New spoon drain against existing wall to #42 James Street laid to fall to West drained to existing concrete	lin m	12	125.00	\$ 1,500
26	New concrete spoon drain against existing wall to #44 James Street laid to fall to East.	lin m	8	125.00	\$ 1,000
27	New concrete spoon drain against retaining wall to #1 & #3 Campbell Grove laid to falls	lin m	13	125.00	\$ 1,625
28	Grated pit to end of spoon drain	No	3	500.00	\$ 1,500
29	100 mm PVC Stormwater drain laid in trench in connection from pits to existing drain	lin m	16	85.00	\$ 1,360
30	Connection of drain to existing stormwater pit	No	3	300.00	\$ 900
31	Allow for additional drainage	Item			\$ 3,000
Drainage - Total					\$ 10,885
<u>Landscaping</u>					
32	Allow for landscaping to enlarged rear garden area to #1 Campbell Grove including grading, top soiling, seeding and planting	m2	17	120.00	\$ 2,040
33	Allow for landscaping to enlarged rear garden area to #3 Campbell Grove including grading, top soiling, seeding and planting	m2	21	120.00	\$ 2,520
34	Extra for new decking to #3 Campbell Grove	Item			\$ 2,500
Landscaping - Total					\$ 7,060
Option 3 Stabilisation Works Trade Totals					\$ 80,730