Basement Construction
Costing comparisons

Conducted by MBM Pty Ltd.

Rev 01 October 2025 - 052026

THE NEXT LEVEL.

Overview

DINCEL STRUCTURAL WALLING

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- A series of scenarios were provided to MBM to complete a detailed costing analysis
- The objective was to determine cost differences between traditional types of formwork and Dincel Permanent Formwork in basement construction applications
- The costing reviewed the following scenarios;
  - Submerged – Sheet Piles
  - Non-Submerged, Sandy Conditions
  - Non-Submerged, Stiff Clay / Shale Conditions
  - Non-Submerged, Hard Shale / Rock Conditions
  - Non-Submerged, Stiff Clay / Piles & Void
  - Non-Submerged, Stiff Clay / Piles

MBM Quantity Surveying and Asset Management Consultancy.

DINCEL STRUCTURAL WALLING

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Since commencing operations in Sydney back in 2002, **MBM** has grown into a national consultancy firm with over 200 industry experts and seven offices across Australia.

MBM are currently engaged on 8 major "inner city" high-rise developments with basement carparking.
The following evaluation & findings were conducted by:
MBM's Founding Director Mr David Madden - with assistance from Mr Tom Turner.
Contact: nsw@mbmpl.com.au

Engaged by Dincel to undertake various basement construction costing analysis, targeting Conventional V Dincel build options within both Submerged & Non submerged conditions.

- Non-Submerged conditions (ground water seepage) = 190mm blockwork V Dincel 200mm
- Submerged conditions (near water table) = 250mm cast-insitu V Dincel 275mm

Combined with various soil conditions

- Sandy soil
- Stiff clay / Soft Shale
- Hard shale / Sandstone – Rock

Key costing components evaluated

DINCEL STRUCTURAL WALLING

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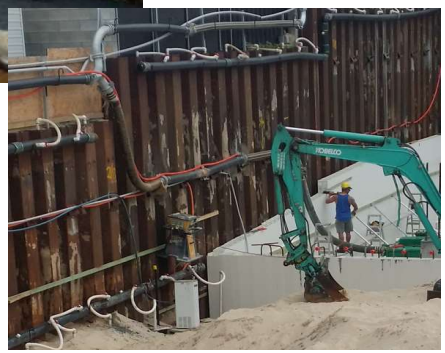
00 Prelims	Dewatering (materials & duration)
01 Site preparation	Bulk excavation
	Backfill
	Over excavation (allow .2m gap from wall and 60 deg repose)
	Over excavation (allow .2m gap from wall)
	Over excavation (allow .75m gap from wall and 60 deg repose)
	Over excavation (allow .75m gap from wall)
	Over excavation (allow 1m gap from wall and 30 deg repose)
02 Shoring wall	Blockwork, 190mm, incl core fill and bar reo
	Cast in situ concrete wall, 250mm thick
	Dincel wall 200mm thick
	Dincel wall 275mm thick
03 Waterproofing and water management	
	Positive face sheet membrane
	Waterproofing at key junctions and spliced connections
04 Internal drainage	Allowance for cells and drainage
	Dish drain



Single Level / 4m deep basement
Plan area of excavation 600m2
Perimeter of excavation 100m
External wall area of basement 400m2
Bulk excavation 2,400m3

Description	System 1, Submerged below water table – Sheet Piling	
	Type B. Dincel 275mm "SCC" & DWS Waterstop	Type A. 250mm insitu RC Concrete
	Sandy Clay Soil	
00 Prelims		
Dewatering	52,200	52,200
Piling site establishment	25,000	25,000
01 Site preparation		
Bulk excavation in sand		
Bulk excavation in clay	90,720	90,720
Bulk excavation in soft rock		
Bulk excavation in hard rock		
Backfill		
Over excavate in sand		
Over excavate in soft rock		
Over excavate in hard rock		
02 Substructure		
600mm wide x 500mm deep reinforced concrete capping beam	60,000	60,000
170 thk shotcrete incl reo		72,000
190mm reinforced blockwork		
190mm blockwork		
450mm dia. bored piers socketed into rock at 5m below basement level		
Permanent sheet piling @ 58.4 kg/m	322,000	322,000
Slab on ground including waterproof membrane	141,600	141,600
Dincel 200mm wall		
200mm insitu conc (dual faced formwork)		
250mm insitu conc		237,600
Dincel 275mm wall (submerged)	154,000	
Dincel 275mm wall (non-submerged)		
03 Waterproofing and water management		
Positive side sheet membrane	7,520	30,080
04 Internal drainage		
Drainage cell	15,300	15,300
Ag line		
Strip drain		
Grand Total	868,340	1,046,500

Dincel benefit $445.45/m2
= 17% Savings

DINCEL STRUCTURAL WALLING

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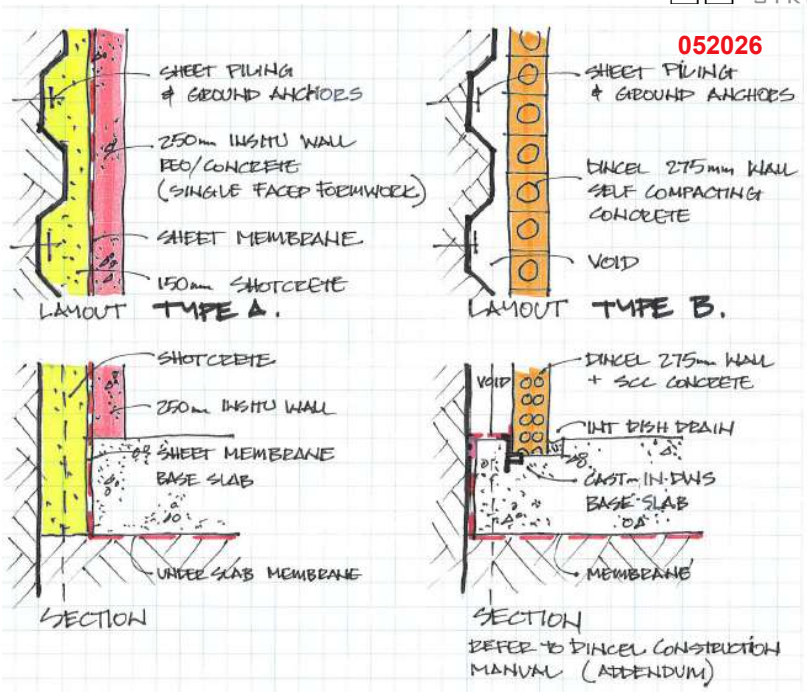

System 1, Submerged below water table – Sheet Piling

Type A. Sheet piles , 150mm min. shotcrete, sheet membrane, 250mm min RC insitu wall

Type B. Sheet piles, Dincel 275mm wall + Self Compacting Concrete, Dincel Waterstop cast into base slab,
(Dincel's "Dry Basement" System Warranty, up to 50 years)

Single Level / 4m deep basement
Plan area of excavation 600m2
Perimeter of excavation 100m
External wall area of basement 400m2
Bulk excavation 2,400m3

	System 2 - Non submerged		
	Type A. 200mm Dincel Waterproof bandage @ cold joint	Type B. 190mm Blockwork Waterproof membrane to wall face	Type C. 200mm Insitu Waterproof membrane to wall face
Description	**Sandy Soil 30° battered embankment**		
00 Prelims			
Dewatering			
Piling site establishment			
01 Site preparation			
Bulk excavation in sand	60,240	60,240	60,240
Bulk excavation in clay			
Bulk excavation in soft rock			
Bulk excavation in hard rock			
Backfill	33,713	33,713	33,713
Over excavate in sand	42,310	42,310	42,310
Over excavate in soft rock			
Over excavate in hard rock			
02 Substructure			
600mm wide x 500mm deep reinforced concrete capping beam			
170 thk shotcrete incl reo			
190mm reinforced blockwork		148,000	
190mm blockwork			
450mm dia. bored piers socketed into rock at 5m below basement level			
Permanent sheet piling @ 58.4 kg/m			
Slab on ground including waterproof membrane	141,600	141,600	141,600
Dincel 200mm wall	100,000		
200mm insitu conc (dual faced formwork)			221,600
250mm insitu conc			
Dincel 275mm wall (submerged)			
Dincel 275mm wall (non-submerged)			
03 Waterproofing and water management			
Positive side sheet membrane	5,640	30,080	30,080
04 Internal drainage			
Drainage cell			
Ag line	3,250	3,250	3,250
Strip drain			
Grand Total	386,752	459,192	532,792
	Dincel benefit	**$181/m2 = 15%**	**$365/m2 = 27%**

DINCEL STRUCTURAL WALLING

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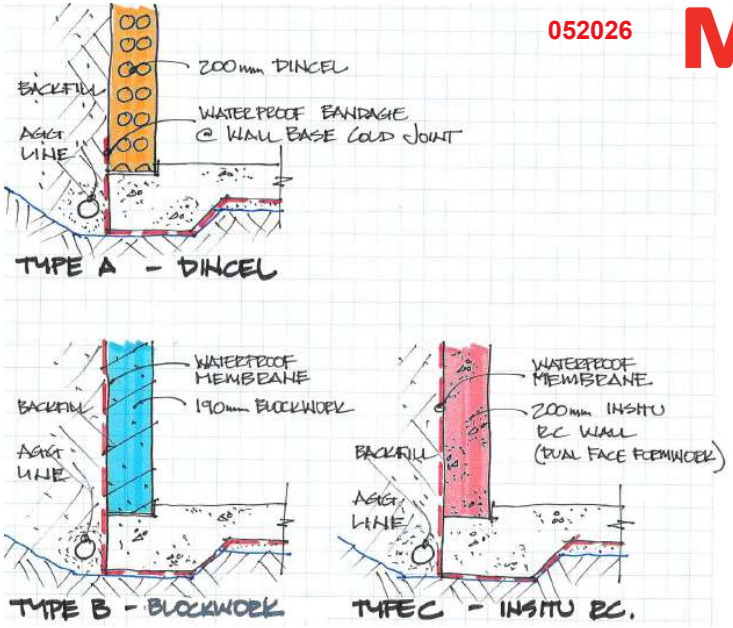

System 2, Non-Submerged – Sandy Soils 30° batter

Type A. 200mm Dincel,
waterproof bandage @ cold joint & under slab membrane

Type B. 190mm Blockwork,
waterproof membrane to wall face & under slab.

Type C. 200mm insitu RC wall (dual faced formwork),
waterproof membrane to wall face & under slab.

Single Level / 4m deep basement
Plan area of excavation 600m2
Perimeter of excavation 100m
External wall area of basement 400m2
Bulk excavation 2,400m3

	System 3 - Non submerged		
	Type A. 200mm Dincel Waterproof bandage @ cold joint	Type B. 190mm Blockwork Waterproof membrane to wall face	Type C. 200mm Insitu Waterproof membrane to wall face
Description	**Stiff Clay 60° battered embankment**		
00 Prelims			
Dewatering			
Piling site establishment			
01 Site preparation			
Bulk excavation in sand			
Bulk excavation in clay			
Bulk excavation in soft rock	216,000	216,000	216,000
Bulk excavation in hard rock			
Backfill	15,238	15,238	15,238
Over excavate in sand			
Over excavate in soft rock	68,569	68,569	68,569
Over excavate in hard rock			
02 Substructure			
600mm wide x 500mm deep reinforced concrete capping beam			
170 thk shotcrete incl reo			
190mm reinforced blockwork		148,000	
190mm blockwork			
450mm dia. bored piers socketed into rock at 5m below basement level			
Permanent sheet piling @ 58.4 kg/m			
Slab on ground including waterproof membrane	141,600	141,600	141,600
Dincel 200mm wall	100,000		
200mm insitu conc (dual faced formwork)			221,600
250mm insitu conc			
Dincel 275mm wall (submerged)			
Dincel 275mm wall (non-submerged)			
03 Waterproofing and water management			
Positive side sheet membrane	3,760	30,080	30,080
04 Internal drainage			
Drainage cell			
Ag line	3,250	3,250	3,250
Strip drain			
Grand Total	548,417	622,737	696,337
	Dincel benefit	**$186/m2 = 12%**	**$370/m2 = 20%**

DINCEL STRUCTURAL WALLING

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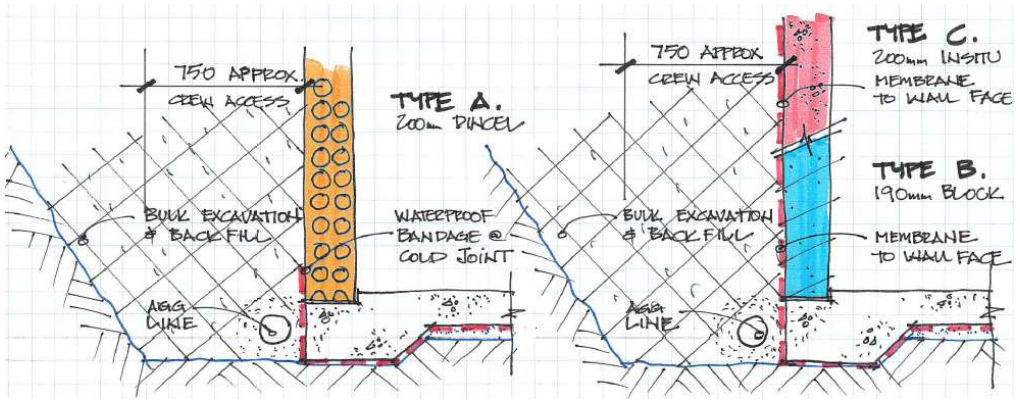


System 3, Non-Submerged – Stiff Clay 60° Batter

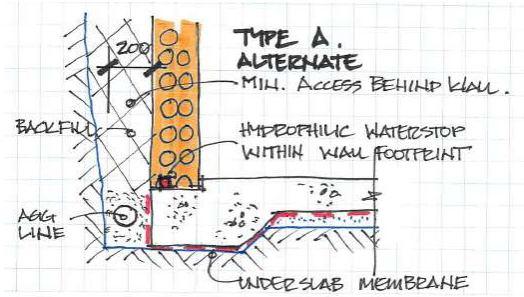
Type A. 200mm Dincel,
waterproof bandage @ cold joint & under slab membrane

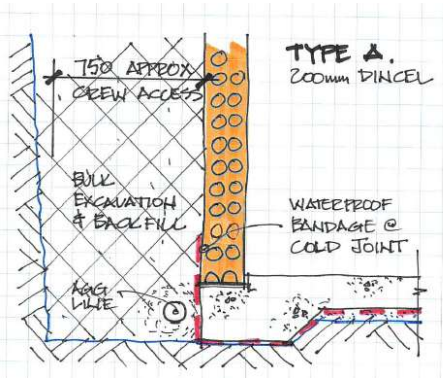
Type B. 190mm Blockwork,
waterproof membrane to wall face (Ext access required to wall face)

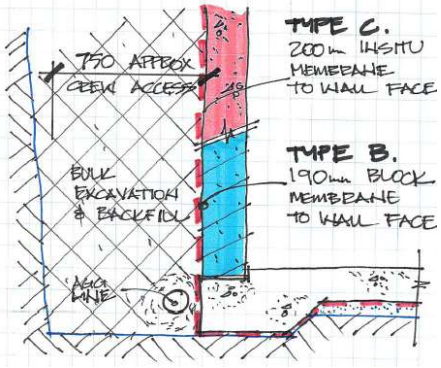
Type C. 200mm insitu RC wall (dual faced formwork),
waterproof membrane to wall face (Ext access required to wall face)

Single Level / 4m deep basement
Plan area of excavation 600m2
Perimeter of excavation 100m
External wall area of basement 400m2
Bulk excavation 2,400m3

Description	System 4 - Non submerged		
	Type A. 200mm Dincel Waterproof bandage @ cold joint	Type B. 190mm Blockwork Waterproof membrane to wall face	Type C. 200mm Insitu Waterproof membrane to wall face
	Hard Shale / Rock 85° embankment		
00 Prelims			
Dewatering			
Piling site establishment			
01 Site preparation			
Bulk excavation in sand			
Bulk excavation in clay			
Bulk excavation in soft rock			
Bulk excavation in hard rock	340,800	340,800	340,800
Backfill	6,000	6,000	6,000
Over excavate in sand			
Over excavate in soft rock			
Over excavate in hard rock	42,600	42,600	42,600
02 Substructure			
600mm wide x 500mm deep reinforced concrete capping beam			
170 thk shotcrete incl reo			
190mm reinforced blockwork		148,000	
190mm blockwork			
450mm dia. bored piers socketed into rock at 5m below basement level			
Permanent sheet piling @ 58.4 kg/m			
Slab on ground including waterproof membrane	141,600	141,600	141,600
Dincel 200mm wall	100,000		
200mm insitu conc (dual faced formwork)			221,600
250mm insitu conc			
Dincel 275mm wall (submerged)			
Dincel 275mm wall (non-submerged)			
03 Waterproofing and water management			
Positive side sheet membrane	3,760	30,080	30,080
04 Internal drainage			
Drainage cell			
Ag line	3,250	3,250	3,250
Strip drain			
Grand Total	633,610	712,330	785,930
	Dincel benefit	$196/m2 = 11%	$381/m2 = 19%







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System 4, Non-Submerged – Hard Shale / Rock 85° Batter

Type A. 200mm Dincel,
waterproof bandage @ cold joint & under slab membrane.

Type A. Alternate – No access behind perimeter wall, incorporate Hydrophilic Water stop @ cold joint & use high slump / SCC mix within wall

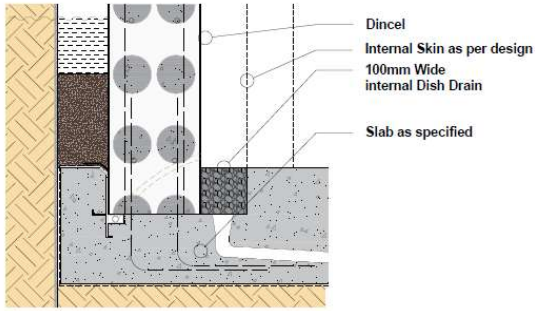
Type B. 190mm Blockwork, waterproof membrane to wall face & under slab

Type C. 200mm insitu RC wall (dual faced formwork), waterproof membrane to wall face & under slab

Single Level / 4m deep basement
Plan area of excavation 600m2
Perimeter of excavation 100m
External wall area of basement 400m2
Bulk excavation 2,400m3

Description	System 6, Non-Submerged Concrete piles	
	Type A. Dincel 200mm "SCC" & DWS Waterstop	Type B. 200mm insitu RC Concrete
	Stiff Clay Soil	
00 Prelims		
Dewatering		
Piling site establishment	25,000	25,000
01 Site preparation		
Bulk excavation in sand		
Bulk excavation in clay		
Bulk excavation in soft rock	216,000	216,000
Bulk excavation in hard rock		
Backfill		
Over excavate in sand		
Over excavate in soft rock		
Over excavate in hard rock		
02 Substructure		
600mm wide x 500mm deep reinforced concrete capping beam		
170 thk shotcrete incl reo		72,000
190mm reinforced blockwork		
190mm blockwork		
450mm dia. bored piers socketed into rock at 5m below basement level	79,488	79,488
Permanent sheet piling @ 58.4 kg/m		
Slab on ground including waterproof membrane	141,600	141,600
Dincel 200mm wall	100,000	
200mm insitu conc (dual faced formwork)		221,600
250mm insitu conc		
Dincel 275mm wall (submerged)		
Dincel 275mm wall (non-submerged)		
03 Waterproofing and water management		
Positive side sheet membrane		30,080
04 Internal drainage		
Drainage cell		
Ag line	3,250	3,250
Strip drain		
Grand Total	565,338	789,018

Dincel benefit $559/m2
= 28% Savings



DINCEL STRUCTURAL WALLING
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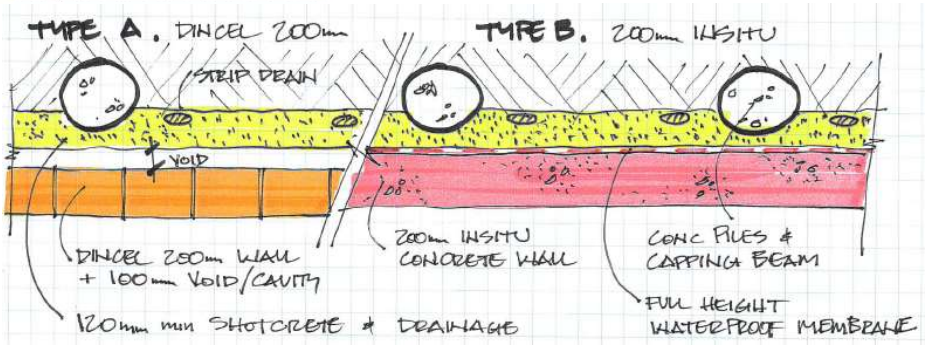

System 6, Non-Submerged – Conc Piles & Shotcrete

Type A. Full Tanking Solution
Concrete piles , 150mm min. shotcrete, Dincel 200mm wall + Self Compacting Concrete, Dincel Waterstop cast into base slab,
(Dincel's "Dry Basement" System Warranty, up to 50 years)

Type B. Concrete piles , 150mm min. shotcrete, sheet membrane, 200mm min RC insitu wall & formwork.

Note: Dincel offer a **Fully Tanked, System Warranty** V's Conventional Concrete wall "QUESTION YOUR CONVENTIONAL CONCRETE WALL WARRANTY - IF AVAILABLE"

Summary of findings

DINCEL STRUCTURAL WALLING

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- Dewatering cost savings based on Dincel's "quicker build timelines" = less hire & operational costs
- Dincel offer greater savings to build program – minimise stripping & materials movement
- Minor variance with "over excavation" works but still considered savings on larger projects (clay / rock sites)
- Cost & timeline savings with reduced perimeter membrane requirements
- **MBM** evaluation found Dincel offered savings across all categories

- Determined cost savings utilizing Dincel V Conventional basement construction methods within:

Non-Submerged conditions	**27%** Sandy Soil	refer system 2
	20% Stiff clay / Soft shale	refer system 3
	19% Hard shale / sandstone	refer system 4
Submerged conditions	**17%** Sandy Soil	refer system 1
	28% Stiff clay / Conc Piles	refer system 6