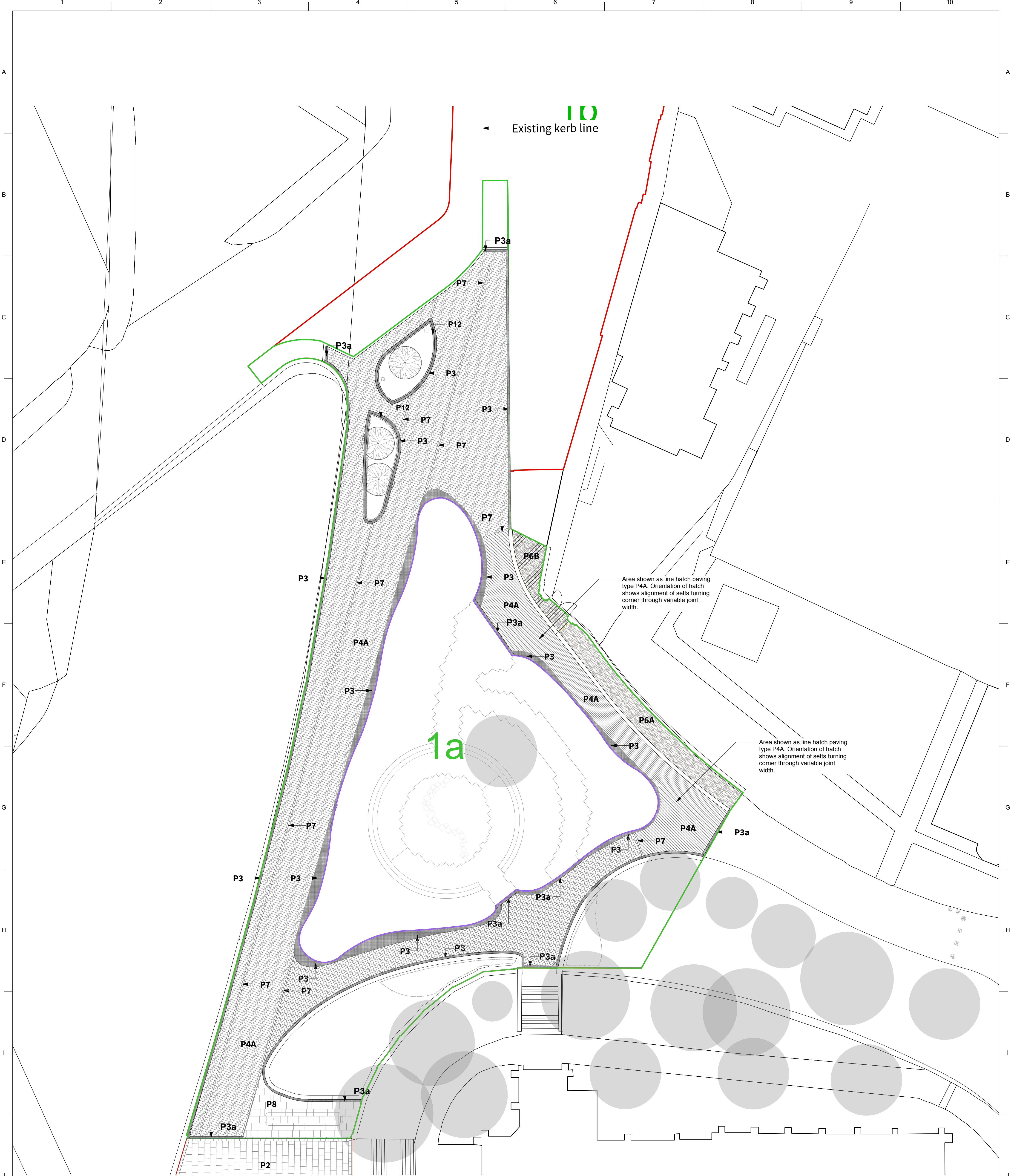






KEY

HARD LANDSCAPE

GRANITE SETTS 1 [REF P3]

- Product: Preta Johann
- Finish: Cropped to all sides
- Colour: Dark grey/blue
- Size: W30 x L50 x D30mm
- Laid: Stack bond
- Supplier: Hardscape or equal approved
- Other: Joints 8-12mm

GRANITE SETTS 2 [REF P3a]

- Product: Preta Johann
- Finish: Cropped sides, fine picked face
- Colour: Dark grey/blue
- Size: W50 x L50 x D30mm
- Laid: Stack bond
- Supplier: Hardscape or equal approved
- Other: Joints 8-12mm

YORKSTONE SETTS [REF P4A]

- Product: Crosland Hill 'Multi'
- Finish: 50% sand blasted, 50% wire sawn
- Colour: Buff/grey
- Size: W150 x L random 150-300mm x D80mm
- Laid: Random stretcher
- Supplier: Hardscape or equal approved
- Other: Joints 8-12mm. Reclaimed material to be cleaned, sawn to match the plan size of new material and incorporated randomly throughout the paving area. 2% of new Crosland Hill sets to feature engraving detail

GRANITE SETTS 2 [REF P5]

- Product: Granite
- Finish: Cropped sides, fine picked face
- Colour: Dark grey/blue
- Size: W150 x L150-300mm random length x D300mm
- Laid: Staggered bond
- Supplier: Hardscape or equal approved
- Other: Joint width to allow for lawn to grow between paving units

FLORENTINE PAVING EXISTING [REF P6A]

- Product: As existing
- Other: Used along Chetham's boundary wall

GRANITE SETT FLORENTINE PAVING [REF P6B]

- Product: Alpendurada & Preta Johann
- Colour: Silver grey body, black accents
- Size: W10-90 x L10-90 x D80mm
- Supplier: Hardscape or equal approved
- Other: Joints 8-12mm. Used the along Chetham's boundary wall to match existing paving

YORKSTONE CHANNEL EDGE [REF P7]

- Product: Crosland Hill 'Multi'
- Finish: Wire sawn
- Colour: Buff/grey
- Size: W150 x L310mm x D80mm
- Laid: As channel
- Supplier: Hardscape or equal approved
- Other: Joints 8-12mm. Used as drainage channel within Yorkstone Setts

RECLAIMED YORKSTONE FLAGS [REF P8]

- Size: Varies, as existing
- Laid: Staggered bond
- Other: Joints 6-10mm. Used flanking Cathedral entrance area, flags to be chosen by landscape architect on site

PLANNING APPLICATION BOUNDARY

PHASING BOUNDARY

GLADE OF LIGHT BOUNDARY (TO BCA DESIGN)

Revision	Date	Description	Drawn	Apprvd.
S4-P06	29-03-21	STAGE 05 update picking up GT comments	FF	LH
S4-P05	26-03-21	Stage 05 Issue	FF	FF
S4-P04	08-01-21	Stage 04 Updates	FF	FF
S4-P03	17-12-20	Stage 04 Updates	JC	FF
S4-P02	11-12-20	Stage 04	CB	FF
S4-P01	21-10-20	Stage 04	JTO	FF

Client	Galliford Try		
Project	Manchester Medieval Quarter		
Drg Title	Hardworks GA - Phase 1A		
Created on	21-10-20	Created by	JTO
Approved by	FF		
Scale	1:200	Size	A1
Workstage	STAGE 05		
Drg No.	MMQ-PLA-XX-XX-DR-L-1002	Suitability	S4
Revision	P06		

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- The dimensions of all materials must be checked on site before being laid out.
- This drawing must be read with the relevant specification clauses and detail drawings.
- Order of construction and setting out to be agreed on site.

[illegible]

F	Area 2: Rain Gardens										F

KEY

- **PLANNING APPLICATION BOUNDARY**
- **PHASING BOUNDARY**
- **LAND OWNERSHIP BOUNDARY**

SOFT LANDSCAPE

-  **EXISTING TREE RETAINED**
-  **EXISTING TREE LIFTED AND STORED FOR REPLANTING**
-  **EXISTING TREE REMOVED**
-  **PROPOSED TREE**
Refer to schedule

PROPOSED TURF

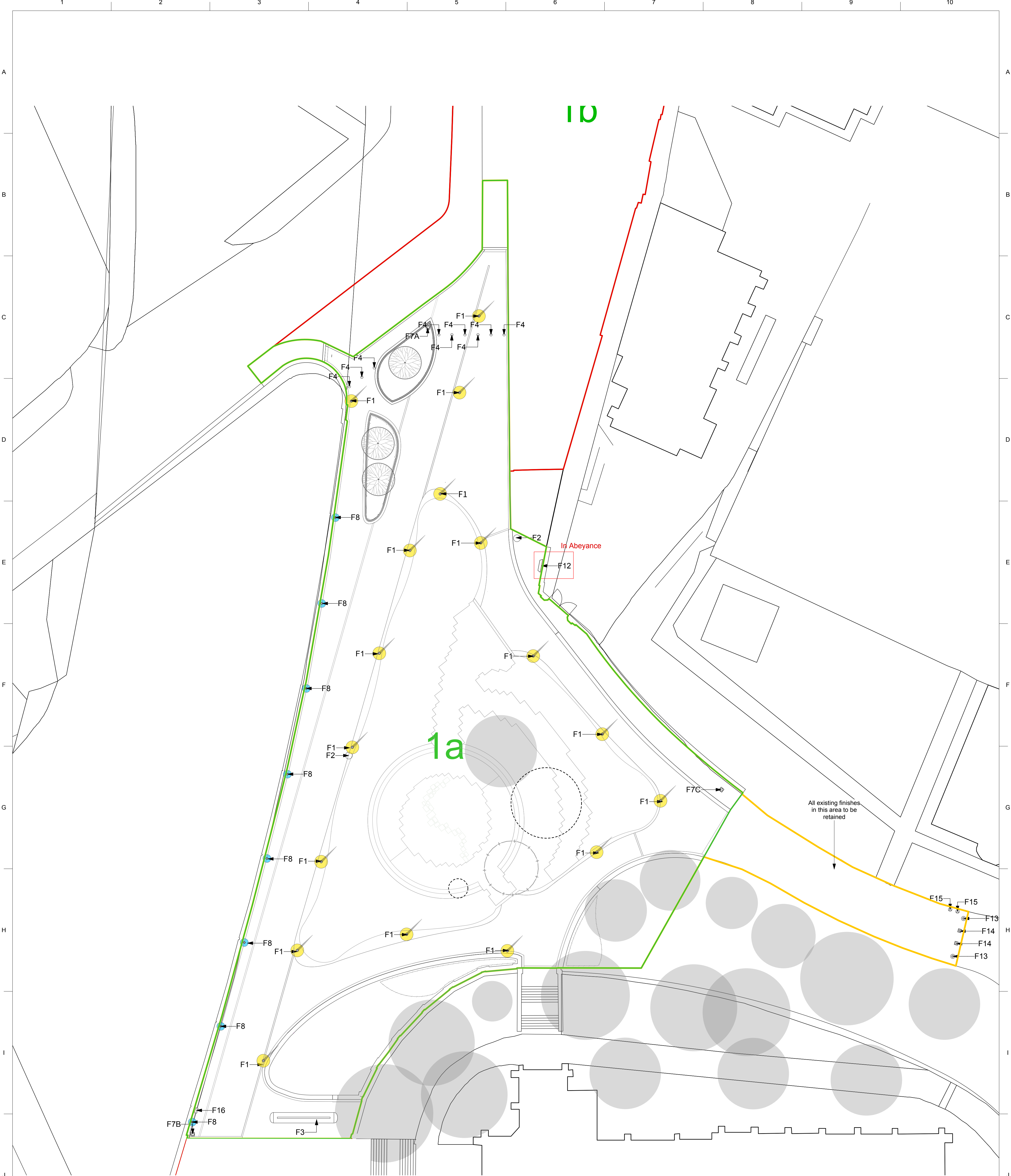
PROPOSED PLANTING

BULBS

S4-P04	14-04-21	Stage 05 Issue	JTO	FF
S4-P03	07-01-21	Stage 04	CB	FF
S4-P02	11-12-20	Stage 04	CB	FF
S4-P01	07-12-20	Stage 04	CB	FF
S1-P01	30-04-20	incorporated Glade of Light design	JTO	FF
Revision	Date	Description	Drawn	Apprv.

Cient	Galliford Try		
Project	Manchester Medieval Quarter		
Drg Title	Planting plan GA - Phase 1A		
Created on	Created by	Approved by	
30-04-20	JTO	FF	
Scale	Size	Workstage	
1:100	A1	STAGE 05	
Drg No.	Suitability	Revision	
MMQ-PLA-XX-XX-DR-L-2002	S4	P04	

	Plant 1 E. Limited E: plant-1e@com W: plant-1e.com
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	LONDON Unit 6 Waterside, 44-48 Wharf Road, London, N1 7UX T: 0207 253 5678
	LIVERPOOL No. 8 Princes Parade, Princes Dock, Liverpool, L3 1DL T: 0151 705 6746
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KEY

- BOUNDARIES**
- PLANNING APPLICATION BOUNDARY
 - PHASING BOUNDARY
 - PHASE 1A S278 WORKS
- STREET FURNITURE**
- LIGHTING COLUMN (REF F1)**
- Product: Selux Olivia
 - Colour: Graphite Grey - RAL 7024
 - Size: H: 6000mm
 - Supplier: Selux or equal approved
 - Other: Subject to detailed design by MAE Engineer
- LITTER BIN (REF F2)**
- Product: MCC Standard Bin, MLB/120
 - Supplier: Wybone
 - Size: S30x530x1100mm
 - Other: Featuring honeycomb pattern and Photoluminescent Bee Mosaic
- LARGE TIMBER AND STONE SEAT (REF F3)**
- Product: UK sourced timber central unit with granite end pieces
 - Finish: Pressure-treated hardwood and honed granite
 - Size: Refer to details for dimensions
 - Supplier: Bespoke
 - Other: To include timber central backrest

- STATIC BOLLARD (REF F4)**
- Product: SP1000 Shallow Mounted Bollard
 - Colour: RAL 9005 with yellow banding
 - Size: H: 1020mm above ground, diameter: 225mm
 - Supplier: ATG or equal approved
 - Other: Root fixing
- SIGNAGE & WAYFINDING (REF F7A, F7B & F&C)**
- Product: Way2Go finger post
 - Colour: Graphite Grey - RAL 7024
 - Size: H: Minimum 2100mm clearance, 2640mm total height
 - Supplier: IS Group or equal and approved
 - Other: Fingerpost F7A & F7B to feature circular "CYCLISTS DISMOUNT" signage. F7C features no additional signage.
- REPLACED LANTERN HEADS (REF F8)**
- Product: Lantern heads to be replaced on existing columns
- FREESTANDING ARCHEOLOGICAL INTERPRETATION BOARD (REF F12)**
- Product: Bespoke design TBC

- BEE BOLLARD FIXED (REF F13)**
- Product: Manchester Ferrocast Bee Bollard
 - Colour: RAL 9005 with yellow banding
 - Size: H: 1300mm above ground, diameter: 225mm
 - Supplier: Marshalls or equal approved
 - Other: Root fixing
- BEE BOLLARD REMOVABLE (REF F14)**
- Product: Manchester Ferrocast Bee Bollard
 - Colour: RAL 9005 with yellow banding
 - Size: H: 1300mm above ground, diameter: 225mm
 - Supplier: Marshalls or equal approved
 - Other: Removable fixing
- SPARE SOCKET FOR REMOVABLE BEE BOLLARD (REF F15)**
- Product: Spare socket for Removable Bee Bollard by ATG or equal approved
- RECYCLING BIN (REF F16)**
- Product: MCC Standard Triple Recycling Bin
 - Supplier: Wybone
 - Size: S18x1080x1035mm
 - Other: Featuring honeycomb pattern and Photoluminescent Bee Mosaic. Featuring ashtray to top of bin

Revision	Date	Description	Drawn	Apprvd.
S4-P07	24-06-21	STAGE 05 ISSUE - recycle bins & bollard locations	JTO	FF
S4-P06	09-06-21	STAGE 05 ISSUE - S278 comments update	JTO	LH
S4-P05	12-04-21	STAGE 05 ISSUE	JTO	FF
S4-P04	30-03-21	Stage 05	JTO	FF
S4-P03	05-01-21	Stage 04	CB	FF
S4-P02	11-12-20	Stage 04	JTO	FF
S4-P01	11-12-20	Stage 04	JTO	FF
S1-P01	30-04-20	Incorporated Glade of Light design	JTO	FF

Client	Galliford Try		
Project	Manchester Medieval Quarter		
Drg Title	Street Furniture GA - Phase 1A		
Created on	21-10-20	Created by	JTO
Approved by	FF	Workstage	STAGE 05
Scale	1:200	Size	A1
Drg No.	MMQ-PLA-XX-XX-DR-L-4001	Suitability	S4
Revision	P07		

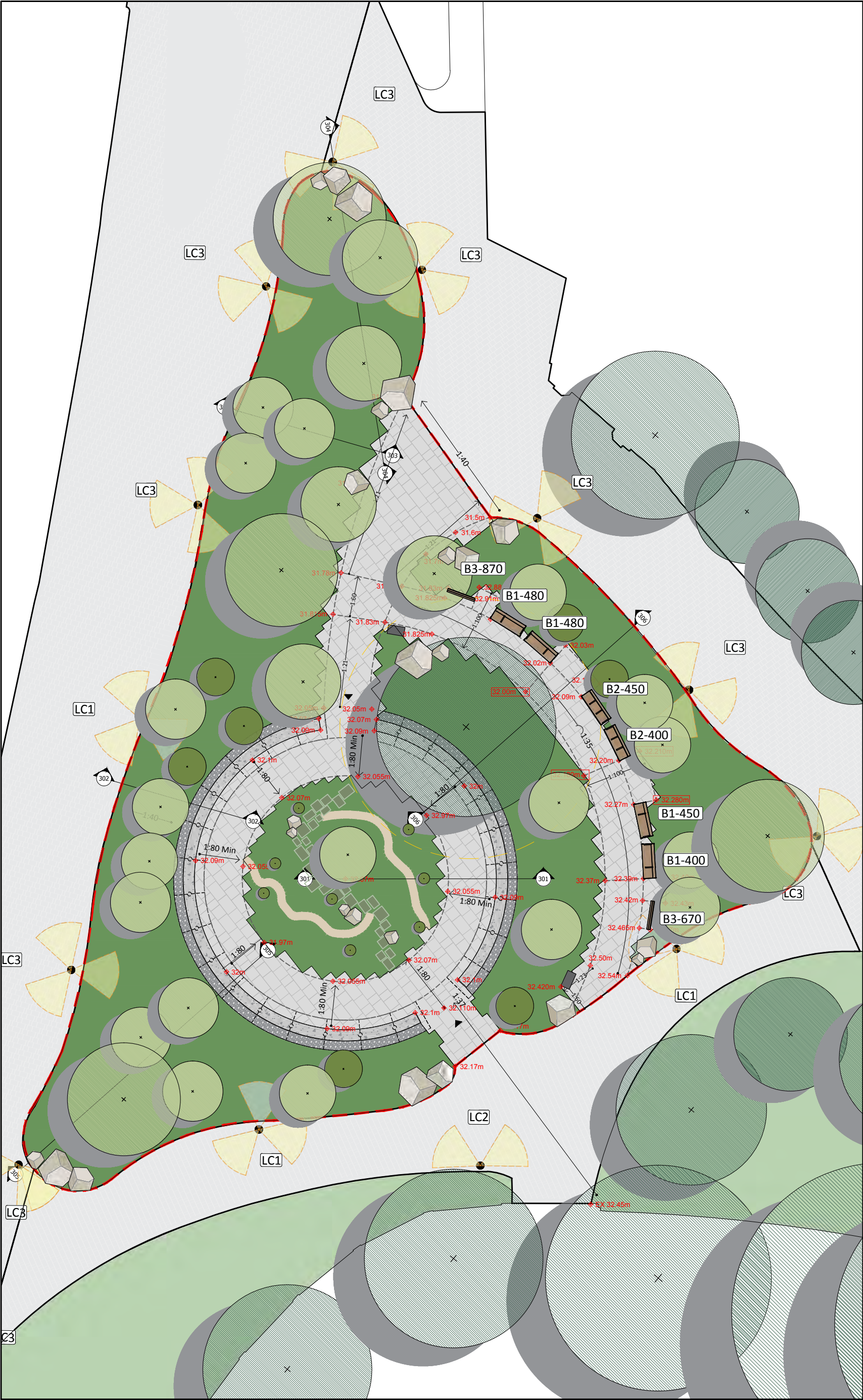


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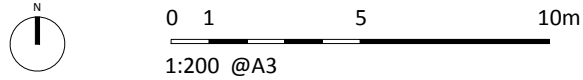
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General Arrangement
1:200@A3

CONSTRUCTION



Client	Galliford Try
Job title	Glade Of Light
Drawing title	General Arrangement

Scale	1:200 @ A3	Created by	SG	Last edited by	SG	Date	September 21
Project number	19.516	Drawing number	100	Issue	C 5	Checked	AT

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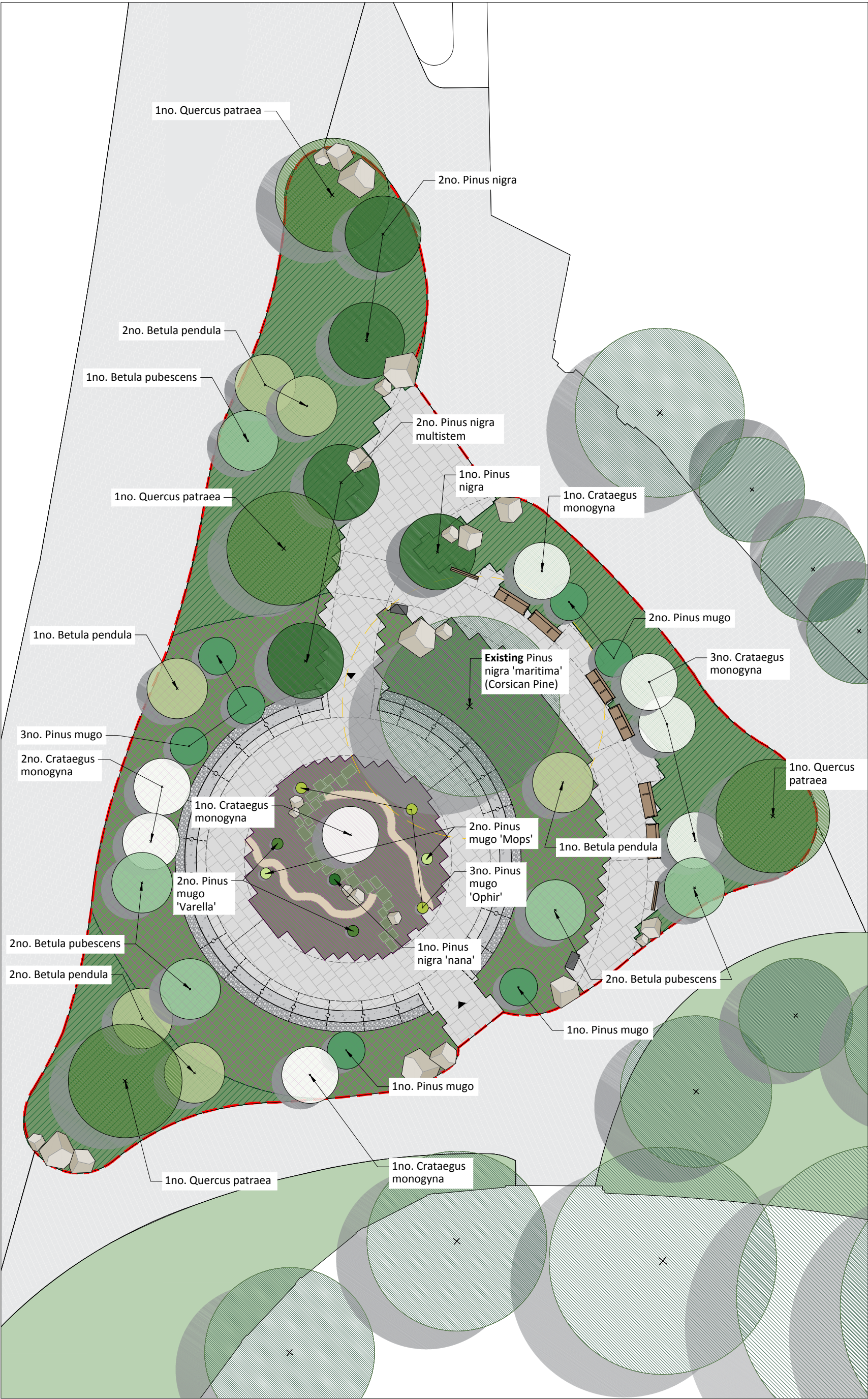
All dimensions to be checked on site.
Figured dimensions to be read in preference to scaled.

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Revision	Description	By	On
C 5	Levels updated to match setting out drawing	SG	06/09/2021
i 2	Furniture notes update to mmcite	SG	19/05/2021
C 4	Issued for planning condition discharge	SG	17/05/2021
C 3	Changes to bench types and plaque locations	SG	16/04/2021
C 2	Amendments to key and boundary; Paving bond direction rotated on outer path	SG	19/03/2021
C 1	Construction Package; Key updates and minor annotative changes	SG	12/03/2021
T 3	Stage 04 Issued for coordination	SG	14/12/2020

	Glade of Light Site Boundary - limit of proposed memorial works by BCAL. Refer to Planit-IE drawings for area beyond boundary	Col Fini
	Existing Trees To be retained and root protected. Refer to Arboricultural constraints report	
	Root protection area Hand dig only	
	Proposed Trees 28no. Varied Sizes and species - See dwg 200 - Soft Landscape	
	Proposed dwarf conifers 15no. Varied Sizes and species - See dwg 200 - Soft Landscape	
	Proposed planting - Area 712² Varied Sizes and species - See dwg 200 - Soft Landscape	
	Weathered Sandstone boulders 24no. Rounded with no sharp edges	
	Proposed Paving (Glade of Light) - Area 275m² Material: Existing Yorkstone reclaimed and cleaned Dimensions: 600mm banding with varying lengths of 400mm, 600mm & 900mm Joints: 8-12mm Edging: Mortar haunch to edges not retained by Halo foundation	
	Proposed Paving - (Wider Medieval Quarter area) Indicative only. See Planit-IE drawings for paving layout.	
	Gravel Infill - Area 26.5m² Gravel area beneath back of Halo - See Detail Sections 300-305	
	Working Paths 1no. Yorkstone Path 2no. Gravel Paths Min width 400mm	
	Memorial Halo Material: Carrara marble with memory capsule insert and bronze joints Dimensions: 200-300mm (max) above floor level; 150mm (material thickness); See dwg 102 for indicative buildup details	
	2no. Memorial Plaques With Inclusive interpretation	
	B1 - Emau Solo Bench Type: Two armrests - One open end Finish: Seat & Armrest top - Jatoba Hardwood (12R fillet to armrest tops); Legs and armrest sides - Graphite grey Supplier: MMCite Variations: 1no - 400mm Height - Open end to right side 1no - 450mm Height - Open end to left side 1no - 480mm Height - Open end to left side 1no - 480mm Height - Open end to right side	
	B2 - Emau Solo Bench Type: Two central armrests Finish: Seat & Armrest top - Jatoba Hardwood (12R fillet to armrest tops); Legs and armrest sides - Graphite grey Supplier: MMCite Variations: 1no - 400mm Height - Open end to left side 1no - 450mm Height - Open end to right side	
	B3 - Vera Perch Type: Perch Seat - 2no. Armrests Height: 670/870mm Finish: Seat & Armrest top - Jatoba Hardwood (12R fillet to armrest tops); Legs and armrest sides - Graphite grey Supplier: MMCite	
	LC1 - Lighting Column Supplier: Selux Fitting: 2no. Olivio Medio and 1no. Olivio Gobo Column: Olivio Sistema - Tapered - 6m Tall Finish: Selux Graphite	
	LC2 - Lighting Column Supplier: Selux Fitting: 2no. Olivio Medio Column: Olivio Sistema - Tapered - 6m Tall Finish: Selux Graphite	
	LC3 - Lighting Column Supplier: Selux Fitting: 3no. Olivio Medio	



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Revision	Description	By	On
C 4	Minor changes to Pinus nigras and Pinus nigra multistems	SG	25/08/2021
C 3	Trees moved to accommodate new plaque and bench positions	SG	16/04/2021
C 2	Planting areas update following boundary update	SG	17/03/2021
C 1	Construction Package	SG	12/03/2021
T 4	2no. Pinus nigras replaced with Pinus nigra multistems	SG	26/02/2021
T 3	Tree layout change and areas update	SG	14/12/2020
T 2	Minor annotative amendments	SG	27/11/2020
T 1	Tender Pack	SG	20/11/2020
D 2	Tree layout redesign	SG	07/10/2020
P 1	Planning Package	SG	15/09/2020
D 1	Issued for costing	SG	23/03/2020

TREE SPECIFICATION

Existing Trees
To be reed and root protected. Refer to Arboricultural constraints report

Root protection area
Hand dig only

Proposed Trees
6no. Betula pendula

5no. Betula pubescens

4no. Quercus patraea

3no. Pinus nigra
2no. Pinus nigra (multistem)

8no. Crataegus monogyna

Dwarf Pines
7no. Pinus mugo

2no. Pinus mugo 'Mops'

3no. Pinus mugo 'Ophir'

2no. Pinus mugo 'Varella'

1no. Pinus nigra 'Nana'

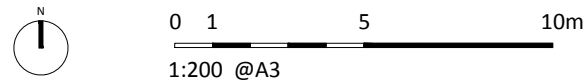
Planting Mix 01
Area: 71m²

Planting Mix 02:
Area: 379m²

Planting Mix 03:
Area: 262m²

Note: See sheet 202 for planting schedule and tree specification

Tree Locations
1:200@A3



CONSTRUCTION

Client	Galliford Try
Job title	Glade Of Light
Drawing title	Soft Landscape

Scale	Created by	Last edited by	Date
1:200 @ A3	SG	SG	August 21
Project number	Drawing number	Issue	Checked
19.516	200	C 4	AT

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19.516 - Glade of Light
Planting Schedule
Refer to BCAL drawing no. 200 for zone info
26/07/2021
C2

BCA Landscape

E	Evergreen
SE	Semi-Evergreen
D	Deciduous

Shrubs, herbaceous plants and grasses	Area (m ²)
Mix 01 - Halo centre	71
Mix 02 - Outer Ring	385
Mix 03 - Secondary Ring	262

Total: 718.0

Trees	No.
	28
Dwarf Conifers	15

Total: 28

Fertilizer Specification:

Millais Nurseries Ericaceous Slow-Release Fertilizer
Suitable for broadcasting over the ground at 50g/m².
To be applied twice per year in early spring and summer where there is a recognised need.

Heathers and Heaths	Height	Spread	Pot size [litre]	% of Mix 1	% of Mix 2	% of Mix 3	No. per m ²	Qty
E Calluna vulgaris 'Amethyst'	26-30cm	31-45cm	2L	2.00%		2.0%	7	47
E Calluna vulgaris 'Annemarie'	26-30cm	31-45cm	2L	2.00%		2.0%	7	47
E Calluna vulgaris 'Caerketton White'	21-25cm	31-45cm	2L	2.00%			7	10
E Calluna vulgaris 'dark beauty'	25cm	45cm	2L	4.0%		2.0%	7	57
E Calluna vulgaris 'Marlies'	26-30cm	46-60cm	2L	3.0%			7	15
E Calluna vulgaris 'Melanie'	30-40cm	30-40cm	2L	2.0%			7	10
E Calluna vulgaris 'Mullion'	16-20cm	46-60cm	2L	2.0%			7	10
E Calluna vulgaris 'Peter Sparkes'	26-30cm	46-60cm	2L	2.0%			7	10
E Calluna vulgaris 'Velvet fascination'	35-45cm	45cm	2L			2.0%	5	26
E Erica carnea 'Isabell'	15-20cm	45cm	2L	4.0%			7	20
E Erica carnea 'Jennifer Anne'	16-20	31-45cm	2L	4.0%			7	20
E Erica carnea 'March seedling'	10-15cm	45-60cm	2L	2.0%		2.0%	7	47
E Erica carnea 'Pink Spangles'	15-40cm	45cm	2L	3.0%		2.0%	7	52
E Erica carnea 'Rosalie'	15-20cm	35-45cm	2L	2.5%		2.0%	7	49
E Erica carnea 'Myretoun Ruby'	15-30cm	30-60cm	2L	2.5%			7	12
E Erica cinerea 'Aquarel'	25cm		2L	2.0%			7	10
E Erica cinerea 'C. G. Best	30cm	70cm	2L	5.0%		4.0%	5	70
E Erica cinerea 'Velvet night'	25cm	60cm	2L	3.5%			7	17
E Erica x darleyensis 'Darly Dale'	45cm	90cm	2L			2.0%	5	26
E Erica x darleyensis 'Ghost Hills'	50cm	45cm	2L			2.0%	5	26

Herbaceous	Height	Spread	Pot size [litre]	% of Mix 1	% of Mix 2	% of Mix 3	No. per m ²	Qty
E Achillea millefolium 'Summer Pastels'	30-60cm	20cm	3L	5%			4	14
E Ajuga reptans 'Braunherz'	15cm	100cm	3L		3.5%	3.40%	5	112
E Andromeda polifolia Compacta	15-20 cm	20-30 cm	5L	6.0%		2.10%	25	244
D Astilbe 'Amethyst' (Arendsii Hybrid)	90cm	50cm	5L			4.00%	3	31
D Aquilegia chrysantha 'Yellow Queen'	90cm	45cm	4L		3.0%	2.50%	5	91
D Aquilegia vulgaris	90cm	60cm	4L		4.0%	2.50%	4	88
D Aquilegia flabellata	30cm	15cm	2L	1.8%		2.20%	25	176
D Geranium cinereum 'Sophie'	15cm	25cm		2.0%		2.20%	4	29
D Geranium phaeum	80cm	45cm				4.00%	3	31
E Iberis Masterpiece	30cm	45cm				3.0%	3	24
E Iberis sempervirens	25cm	50cm	2L	3.0%	2.0%		5	49
D Lupinus 'Noble Maiden'	90-120cm	40-60cm	5L	2.0%	2.0%	2.50%	2	31
D Papaver nudicaule 'pacio'	25cm	25cm	4L	2.0%		2.20%	18	129
E Phlox subulata McDaniels Cushion	10-25cm	25-50cm		4.0%			4	11
Primula japonica	30-60cm	30cm			4.0%		6	92
SE Saxifraga stolonifera	30cm	100cm	3L		2.9%	5.00%	5	121
E Thymus serpyllum	10cn	50cm	2L	4.5%			5	16

Grasses	Height	Spread	Pot size [litre]	% of Mix 1	% of Mix 2	% of Mix 3	No. per m ²	Qty
E Acorus gramineus ogon	15-30cm	15-30cm	5L	2.8%	2.5%		3	35
D Calamagrostis x acutiflora 'Overdam'	75-90cm	45-60cm	5L		2.5%		2	19
D Carex buchananii	60-90cm	60-90cm	10L		5.0%		1	19
E Carex remota	34-45cm		2L	4.0%	2.0%		4	42
E Ophiopogon japonicus nana	10-15cm	10-15cm	1L	3.5%			9	22

Ferns	Height	Spread	Pot size [litre]	% of Mix 1	% of Mix 2	% of Mix 3	No. per m ²	Qty
E Asplenium scolopendrium	30-45cm	30-45cm	5L	1.8%	3.30%	2.9%	2	43
E Asplenium ruta-muraria	15cm	20cm	1.5L	1.8%	3.40%		25	359
E Blechnum spicant	50cm	45cm	3L	2.0%	5.80%	4.3%	3	105
SE Dryopteris erythrosora	100cm	100cm	5L		6.00%		1	23
E Polystichum aculeatum	20-60cm	90cm	3L		5.80%	4.3%	3	101
E Polystichum setiferum 'Plumosum Densum'	40cm	30cm	5L		3.30%	2.9%	3	61
E Epimedium lishihchenii	45cm	30cm	5L		5.80%	4.3%	5	168
E Epimedium pubigerum	45cm	60cm	5L		5.90%	4.3%	3	102

Sedums and Mosses	Height	Spread	Pot size [litre]	% of Mix 1	% of Mix 2	% of Mix 3	No. per m ²	Qty
E Sagina subulata	2-5cm		1L	1.4%			10	10
E Sagina subulata 'Aurea'	2-5cm		1L	1.4%			10	10
E Scleranthus biflorus	5-10cm	30-50cm	1L	1.5%			6	6
D Sedum ternatum	7-15cm	15-22cm	1L	1.4%			6	6
D Sedum spurium 'John Keech	5-10cm	25-30cm	2L	1.4%			6	6
E Polytrichum commune	15cm	30cm	2L		4.0%	3.00%	6	140

19.516 - Glade of Light	BCA Landscape
Planting Schedule	
Refer to BCAL drawing no. 200 for zone info	
26/07/2021	
C2	

Shrubs	Height	Spread	Pot size [litre]	% of Mix 1	% of Mix 2	% of Mix 3	No. per m ²	Qty
E Hebe pinguifolia 'Pagei'	30cm	90cm	5L	4.0%		2.10%	1	8
E Lavandula angustifolia	60cm	75cm	5L		2.0%		2	15
E Pachysandra terminalis	25cm	60cm	5L		2.9%	3.30%	3	59
Total % =				98.8%	81.6%	85.0%	Total Plants =	3128

Bulbs	Height	Spread	Pot size [litre]	% of Mix 1	% of Mix 2	% of Mix 3	No. per m ²	Qty
D Acis autumnalis	22cm	20cm		2.0%		2.0%	50	333
D Allium 'Gladiator'	150cm	30cm		1.8%			20	26
D Allium stipitatum 'Mount Everest'	120cm	10cm		1.8%			20	26
D Allium hollandicum 'Purple Sensation'	100cm	10cm		1.8%			20	26
D Anemone nemorosa	15-20cm	15-20cm		2.5%	1.9%	1.80%	50	690
D Crinum x powellii Album	22cm			2.0%	2.0%	1.8%	50	692
D Crocus goulimyi	12cm	10cm		2.0%			50	71
D Convallaria majalis	15-20cm	15-20cm		1.8%	2.9%	2.40%	80	1498
D Cyclamen coum	7-15cm	10-15cm			2.9%	3.40%	40	803
D Galanthus nivalis					2.9%	4.50%	80	1836
D Hyacinthoides non-scripta	30-60cm	7-15cm		2.0%	2.9%	2.40%	30	566
D Narcissus jonquilla 'Baby moon'	20cm	10cm		5.0%		1.5%	60	449
D Narcissus jonquilla 'Pipit'	30cm	10cm		4.0%			60	170
D Narcissus poeticus	40cm	10cm		2.0%		2.20%	60	431
D Ranunculus acris	60-100cm				4.3%		60	993
							Total Bulbs =	7284

Dwarf Pines			
E	Pinus mugo	Specimen tree; 250L Air pot; Height 1.5-2.5m; Width 1-2m	7
E	Pinus mugo 'mops'	25L Air pot; Height 0.5m; Width 0.5-1m	2
E	Pinus mugo 'ophir'	25L Air pot; Height 0.5m; Width 0.5-1m	3
E	Pinus mugo 'varella'	25L Air pot; Height 0.5m; Width 0.5-1m	2
E	Pinus nigra 'nana'	25L Air pot; Height 0.5m; Width 0.5-1m	1
Total:			15

Trees			
		Specification	Qty
D	Betula pendula	Clearstem; 250-500L Air pot; 4 x tr. ; Height 5.5-6m; Width 1.5-2.5m; Girth 25-30cm; Clearstem to 1.8-2m	6
D	Betula pubescens	Clearstem; 250-500L Air pot; 4 x tr. ; Height 4.5-5m; Width 1.5-2m; Girth 18-25cm; Clearstem to 1.8m	5
D	Crataegus monogyna	Specimen tree, from extra wide spacing; 45-85L Air pot; 5x tr. ; Height 3.5-4m; Width 2-3m; Girth 12-14cm; Clearstem to 1.75-2m; 5 Breaks	8
E	Pinus nigra	Specimen trees grown on extra large spacing; 250-500L Air pot; 6x tr. ; Height 5-7m; Girth 35-50cm; Clearstem to 2.2-2.5m	3
E	Pinus nigra (Multistem)	Specimen trees grown on extra large spacing; 250-500L Air pot; 6x tr. ; Height 5-7m; Girth 35-50cm; Multistem	2
D	Quercus petraea	4no. Quercus patraea Specimen tree, from extra wide spacing; 250-500L Air pot; 5 x tr. ; Height 4.5-5m; Width 2-3m; Girth 25-30cm; Clearstem to 2.2-2.5m	4
Total:			28



**Operating &
Maintenance
Manual**

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introducing mmcité group

The company was founded in 1994 by David Karásek and Radek Hegmon. Since January 2015, mmcité company has been divided into mmcité1 and mmcité +. mmcité1 company continues to deal with design, production and supply of street furniture with the supervision of David Karasek as a main designer. mmcité + company focuses on design, production and supply of bespoke structures for infrastructural projects such as railways, airports. The lead designer is Radek Hegmon. The owners of mmcité1 and mmcité + David Karásek and Radek Hegmon remain. The headquarters of both companies is based in Bílovice in Czech Republic.

The kovocité production plant is also situated in Bílovice.

mmcité1 also has subsidiaries:

- mmcité2 in Slovakia
- mmcité3 in Hungary
- mmcité4 in Poland
- mmcité5 in Spain
- mmcité6 in Romania
- mmcité7 in USA
- mmcité8 in Brasil
- mmcité9 in Mexico
- mmcité10 in Austria
- mmcité11 in United Kingdom

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products of mmcit  1

All products made by mmcit  1 are specially designated for outdoor public areas, even though they suit the interiors of buildings just as well. mmcit  1 products are excellent in terms of resistance against bad weather and vandalism. All elements are firmly attached to the floor.

Due to a wide variety of products and extensive assortment of standard colors, mmcit  1 does not keep finished products in stock, just their individual parts until a binding order is received.

Besides small furniture, mmcit  1 also develops, produces and distributes bus stop shelters or shelters for bicycles. Thanks to our development laboratory and technical offices, we are capable of offering not only our standard catalog products, but also completely new shelters based on the customer's needs and wishes.

Shelters are built with emphasis put on design, functionality and quality, particularly in city environments. We focus on creating moderate designs, often with glass walls that you can see through into the surrounding area, and which do not darken the area within the shelter. Simple shelter designs are created on purpose to make for a smooth assembly process at the place of installation, without needing special means.

The primary structural materials include steel, glass and twin-wall cellular polycarbonate.

We use common steel, as we do for small furniture. All steel parts are zinc coated with a 5-80  m layer. All steel parts are then powder coated in standard colors. We recommend using two different colors on one shelter.

We consider glass to be very suitable material not only for appearance reasons, but also for its high resistance to vandalism (sprayer creations can be easily removed) and against bad weather conditions. As a matter of principle, our shelters use safety glass that is 6, 8 or 10 mm thick (depending on the type of shelter). Glass panels are usually marked with white safety strips or rings.

Twin-wall polycarbonate is used for shelters with arched roofs. Polycarbonate is a suitable alternative for roof glass and its advantage (besides flexibility), compared to glass, is its low weights, reducing the load of the supporting structure.

Another option is to make outside walls of AUREO shelters from coated wooden panels.

Our bus stop shelters are usually equipped with a drainage system (with the exception to SKANDUM, GEOMERE shelters) and as a standard they are supplied with a bench made of jatoba wood.

mmcit  1 shelters can include one or two City-light advertisement showcases.

Setting up a shelter and its anchoring must be carried out in accordance with the installation instructions issued by mmcit  1.

All catalog bus stop shelters are designed for region III – snow load of 150kg/m² and resistant to winds reaching 25m/sec. The customer ordering the furniture is responsible for providing the complete and accurate information and requirements for loads other than standard loads. Most of the shelters can be adopted to different loads if required.

packing, transportation, handling and storage

PACKING:

Before leaving the factory each product of mmcité1 is packed, for its protection during transportation, into shrink-wrap, carton, corrugated or solid cardboard, eventually we use the above mentioned in combination with foam filling or bubble wrap. The glass panels are placed on a separate wooden or steel stands.

Thus wrapped groups of products are placed onto wooden pallets or into cardboard boxes, wooden boxes or wooden reinforced frames.

For sea freight and air freight and in case of a customer's request we use certified fumigated boxes in accordance with ISPM Pub. No.15.

All packages are equipped with the necessary instructional symbols according to CSN EN ISO 780 for handling, transportation and storage of the product.

Transportation and handling:

During handling the packaging must not be exposed to excessive stress, which could result in damage to the packaging or a product.

Packed products have to be transported only in covered vehicles and must be secured against shifting or falling.

Type of packaging ensures that the product is delivered to the customer in perfect condition and is clean and undamaged for follow-up installation. Unless otherwise stated, the pallets are NOT STACKABLE.

Recipient of the supply is obliged to ensure its proper unloading. The transporter is obliged to hand over the goods in undamaged packaging.

The recipient must inspect the shipment upon receiving it and immediately give notification of any externally observed damage. Moreover, the recipient has to give a notification by describing the nature of the damage to delivery note in participation of the transporter and photographically document it.

After unpacking, the recipient checks whether the specification on the delivery note corresponds to the products specification on the order, whether products correspond to the ordered requirements and whether the product is not physically or otherwise damaged.

For safe unloading of packed product or its parts it is necessary to use appropriate mechanisms:

- Manual unloading
- Fork-lift truck or crane of an adequate loading limit for parts up to 6 m long
For suspension use textile belts – steel ropes or chains should never be used
- High-lift truck (side one) with additional forks or crane with lifting load distribution rocker arm for parts longer than 6 m
For suspension use textile belts – steel ropes or chains should never be used

STORAGE:

The packaging is exclusively designed to protect the goods during the transportation. Even for temporary storage prior to installation, it is always necessary to remove product from the shrink-wrap. This will prevent condensation of air moisture inside the package and a possible damage to the surface of products.

Products must be installed immediately or stored in a dry ventilated area, eventually stored outdoors covered with a tarpaulin so that they are protected against dust, while ensuring adequate airing.

Before the next dispatch of products that are stored according to the previous guidelines, it is necessary to check the stored products visually, to pack them appropriately to the original form of packaging so that the product is protected against mechanical and weather damage. Necessary instruction symbols must be placed again on the package. Failure to comply with the above mentioned conditions may lead to damage to the product for which the manufacturer bears no responsibility.

The packaging material is a part of the product and it is a property of the buyer; for its disposal it is recommended to use the services of recycling companies.

1. Failure to comply with the above mentioned conditions may lead to damage to the product for which the manufacturer bears no responsibility.
2. The furniture installation at the place of destination have to be realised according to the manufacturer's specification and the corresponding documents, find more at www.mmcite.com
3. If you have any further questions, please contact your responsible distributor. All contact details can be found at www.mmcite.com

warranty conditions for city street furniture products

The provisions of legal regulations apply to warranties and the method of enforcing warranty rights. The warranty applies to all city street furniture products manufactured by mmcité1 a.s. subject to the condition that the handling, assembly, storage, use and maintenance of each type of street furniture was carried out in accordance with legal regulations and the manufacturer's instructions.

The warranty does not apply to defects caused by unprofessional handling or storage, mechanical damage, vandalism or natural wear and tear; to defects caused by natural disasters or other external weather effects and the warranty also does not apply to specific material properties, such as the formation of cracks or washing out of the internal material from the used wood.

Warranty periods for individual materials:

1. steel structure treated with zinc coating and one-layer powder coating (installed in C4 or lower environment category)*	72 months	against rusting-through
2. steel structure treated with zinc coating and one-layer powder coating (installed in C5 environment category)*	24 months	against rusting-through
3. steel structure treated with zinc coating and two-layer powder coating (installed in C5 environment category)*	72 months	against rusting-through
4. aluminium without surface treatment	72 months	against rusting-through
5. aluminium with powder coating or anodised	120 months	against rusting-through
6. stainless steel	120 months	against rusting-through
7. jatoba wood	120 months	against fungus, rotting and mold
8. pine wood and acacia wood	60 months	against fungus, rotting and mold
9. pressure impregnated pine wood	60 months	against fungus, rotting and mold
10. spruce, plywood and Multiplex birch multi-layer plywood	24 months	against fungus, rotting and mold
11. resysta material	60 months	against fungus, rotting and mold, for persevered strength and flexibility
12. HPL material	24 months	for persevered strength and flexibility
13. self-compacting concrete	48 months	for persevered strength, without crumbling
14. high-strength concrete and ultra-high-strength concrete	48 months	for persevered strength, without crumbling
15. polycarbonate	60 months	for persevered strength, flexibility and resistance to hailstorm
16. safety glass	60 months	for dimension and colour stability
17. stainless steel connecting material	24 months	against rusting-through
18. mechanisms, locks, sealing, gas spring	12 months	
19. electro-components	12 months	
20. sandwich panel	12 months	
21. EPDM rubber	24 months	
22. cushions	24 months	
23. photovoltaic modules	12 months	

- For locations, where the environment is established as C4 or lower (according to EN ISO 12944-5)
 - 72 months warranty for steel structure treated with zinc and one-layer powder coating (against rusting-through)
- For locations, where the environment is established as C5 (according to EN ISO 12944-5)
 - 24 months warranty for steel structure treated with zinc and one-layer powder coating (against rusting-through)
 - 72 months warranty for steel structure treated with zinc and two-layer powder coating (against rusting-through)

Exterior environments			
Environment category		Corrosion risk	Typical steelwork location.
C3		medium	Most rural and urban areas with low sulphur dioxide, acid, alkali and salt pollution.
C4		high	Urban and industrial atmospheres with moderate sulphur dioxide pollution and / or coastal areas with low salinity.
C5	C5I	very high	Industrial areas with high humidity and aggressive atmospheres.
	C5M		Coastal and offshore areas with high salinity.

Regular maintenance has to be carried out according to manufacturer's instructions and the records of maintenance including pictures have to be forwarded when claimed.

Material specification, control, maintenance and reparation procedures

•• STEEL FOR STRUCTURAL PURPOSES

All steel parts are made of weldable steel for structural purposes with guaranteed chemical purity, minimal tensile strength, yield strength and ductility. Steel frames are made of S235JR grade.

Base anticorrosion protection is carried out by the application of zinc coating onto the surface or electro-coated if needed. Further, the steel structure is treated using technologically sophisticated method of polyester powder coating in fine matt structure, in RAL colour shade.

These coatings ensure excellent use properties due to their chemical adhesion, mechanical flexibility and resistance to weather conditions. Scientific research has proven that the combination of both technologies show synergy for much longer lifespan than only zinc coating or only powder coating applied.

Process of anticorrosion surface treatment of steel for structural purposes:

1. degreasing, blasting of steel (GH18) up to SA 2,5 purity level or pickling of the surface
2. base anticorrosion layer:

zinc application (according to shape, size, function)	
– Zn arch spraying (metallization) layer of	40 – 60µm
– hot dip galvanization layer of	40 – 80µm
– electrogalvanization layer of	5 – 25µm
electro-coating / e-coat (unleaded epoxy cathode coating) layer of	15 – 30µm
3. filling up with putty and grinding of uneven surface
4. phosphatising and surface passivation
5. drying in furnace at the temperature of 190°C
6. electrostatic application of powder coating – layer of 60 - 80µm NDFT (nominal thickness of the layer)
7. curing of powder paint – polymerization at the temperature of 190°C, shape of the steel part is taken into account
8. visual control and adhesion testing in compliance with EN ISO 2409 (grid testing of coating adhesion to steel)

Concerning the products that are not further powder coated and the final surface treatment is hot dip galvanization, completely smooth surface can never be achieved. There is visible welding and various colouring of zinc coating due to materials used. Even though the zinc is used for the anti-corrosion protection, it is important to stress out that the zinc coating itself is of low corrosion resistance. Clean zinc exposed to atmospheric impacts oxidizes and the layer of non-stable zinc oxide partly covers the surface ("white rust"). The "white rust" represents temporary aesthetic feature of the

surface, which is of momentary character and does not decrease the resistance to corrosion. The surface with "white rust" unifies within few months and obtains the same aesthetics as the rest of the surface without "white rust".

Also, small areas of missing zinc coating can appear, however these are repaired using 96% zinc paint.

All the above minor defects are in compliance with valid standards for hot dip galvanization (ČSN EN ISO 14713-3 standard) as they originate from the hot dip galvanization process. For that said, these properties cannot be accepted as a claim.

There are two types of protection system that can be supplied, in order to withstand the corrosion agresivity of the particular location (according to EN ISO 12944-5).

C4 environment category - high risk - corresponds to urban and industrial atmospheres with moderate pollution - standard one-layer coating

C5 environment category - very high risk - industrial areas with high humidity and aggressive atmospheres - two-layer coating consisting of primer and coating

Standard colour shades

RAL 9003 Signal white	RAL 4010 Telemagenta
RAL 9006 White aluminium	RAL 5002 Ultramarine blue
RAL 9007 Grey aluminium	RAL 5011 Steel blue
DB 703 Deutsche bahn	RAL 5015 Sky blue
RAL 9005 Jet black	RAL 5019 Capri blue
RAL 7022 Umbra grey	RAL 5024 Pastel blue
RAL 8019 Grey brown	RAL 6010 Grass green
RAL 7016 Anthracite grey	RAL 6018 Yellow green
Corten Colour	RAL 6024 Traffic green
AKZO NOBEL Interpon D1036 SW302G	RAL 6027 Light green
AKZO NOBEL Interpon D1036 SW325i	RAL 7010 Tarpaulin grey
RAL 1013 Oyster white	RAL 7024 Graphite grey
RAL 1015 Light ivory	RAL 7035 Light grey
RAL 1021 Colza yellow	RAL 8002 Signal brown
RAL 2004 Pure orange	RAL 8024 Beige brown
RAL 2008 Bright red orange	RAL 9010 Pure white
RAL 3003 Ruby red	RAL 9011 Graphite black
RAL 3015 Light pink	RAL 7006 Beige grey
RAL 3020 Traffic red	RAL 7043 Traffic grey B
RAL 4005 Blue lilac	RAL 7047 Telegraphy 4
	RAL 7021 Black grey

Standard RAL powder coating colours are supplied exclusively by IGP company, only in two cases by Akzo Nobel.

Other RAL colours will be available for the add-up cost dependant on the quantity of products ordered (any product range):

1-10 pcs	surcharge 650€
11-30 pcs	surcharge 435€
31 and more pcs	surcharge 220€

The surcharge is applicable for each non-standard RAL colour. The production time of products in non-standard RAL colour is 6-8 weeks.

Steel structure of mmcité products usually consists of several parts. Combination of two colour shades on one product is recommended due to aesthetics and design.

Recommended colour combination for steel structure:

RAL 9006 – RAL 9007
RAL 9006 – RAL 7016
RAL 9007 – RAL 7016

Selected products include also serigraphy, lettering and other graphical motives. Other than standard serigraphy is upon request and with price add-up.

Standard serigraphy colours

RAL1028 – Melon yellow
RAL2004 – Pure orange
RAL3020 – Traffic red
RAL5002 – Ultramarine blue
RAL6018 – Yellow green
RAL7016 – Anthracite grey
RAL8007 – Fawn brown
RAL9003 – Signal white
RAL9005 – Jet black
RAL9006 – White aluminium
RAL9007 – Grey aluminium

CONTROL

1. clean the surface with hot water and with soap or mild detergent
2. check the connecting material. In case it has loosen, tight it up.
3. check the surface of steel structure. In case of found damage, repair it.

MAINTENANCE

The corrosion might begin if the surface of steel structure is mechanically damaged. Therefore, it is recommended for the user to check the steel structure every six months. If a mechanical damage or already begun corrosion is found, it is necessary to repair the damage immediately according to manufacturer's instructions.

REPARATION PROCEDURE

Before maintenance, it is necessary to consider the following points:

- scope of the damage (In case of more extensive repair, it is recommended to let mmcité carry out the repair)
- ambient temperature must be between +5°C - +40°C
- relative air humidity cannot exceed 80%
- surface temperature cannot be lower than 3°C above condensation point

Reparation procedure of anticorrosion protection:

1. mechanically clean the damaged spot, the surface has to be clean and dry
2. degrease the damaged steel parts with industrial alcohol or gasoline
3. regrind the surface using sandpaper P120
4. apply zinc coating (minimally 96% zinc contain)
5. once dried, gently use the sand paper P280 to smooth the surface
6. apply the powder coating (according to the manufacturer's instructions)

Notification:

The colour shade after a repair can slightly differ from the original one – they will match approx. after 12 months.

The warranty does not apply to defects caused by careless handling, storage, assembly; usage and maintenance. All have to be done according to the manufacturer's instructions. Please note the powder coating is not abrasion resistant and is not intended for walkable items, such as ART tree grids. Eventual mechanical damage cannot be considered as a matter of claim.



WOW!

Types of zinc coating:

Zn arch spraying (metallization) – a technology used for steel grids or side frames of benches. Zinc wires are melted, entrained into the gun air jet and being sprayed onto the steel part. Metallization enables to create optimally thick layer of zinc; no further blasting is needed as the surface is smooth. Zinc arch spraying can never be used as a final anticorrosion surface treatment (without powder coating).

Hot dip galvanization process – a steel part is hung and immersed into a bath of molten zinc. When emerged, complete and fast outlet of zinc has to be done, making use technical holes in steel structure. Therefore, there is a tendency for the surface not be completely even and blasting has to be carried out. Hot dip galvanized surface as the greatest lifespan and resistance to mechanical damage. In some cases, it can be applied has the final surface treatment.

Electro galvanization – a steel part is hung and immersed into saline-zinc solution. A direct current is running, using zinc anode and steel conductor. Consequently, zinc is deposited onto the surface. Even zinc layer is applied thanks to electro galvanization method. It is suitable for very small steel parts.

Electro coating /e-coat – makes use of similar principle as electro galvanization, unleaded epoxy cathode coating is applied instead of zinc.

•• CORROSION-RESISTANT STEEL

Corrosion-resistant steel is commonly called stainless steel. This category of high-alloy steel types is more resistant to atmospheric corrosion. Thanks to the chemical composition, there is a so-called passive layer on the surface which is being continuously renewed and prevents the corrosion. They resist to industry-influenced air, waste water and even mineral and organic acids in adequate concentration.

The ability of corrosion-resistance of stainless still is not 100% as it is dependant primarily on the amount and ratio of alloying elements, mainly chrome and nickel.

AISI 304 (according to DIN X5CrNi18 10) stainless steel grade is used as a standard, however the grade of AISI 316 (according to DIN X5CrNiMo 17 12 2) is recommended for more demanding areas such as seacoast.

These stainless steel types are very well weldable and significantly tough even at very low temperature. Common (or some) stainless steel loses toughness at low temperatures and therefore cracks (unlike common steel for structural purposes). The surface of stainless steel is treated by, brushing or polishing. Brushed stainless steel surface is of matt look, polished stainless steel reminds chrome.

Despite the excellent properties of stainless steel against oxidation and corrosion, it is not possible to prevent dirt deposition and therefore potential surface damage e.g. caused by aggressive environment, high air humidity, or air dust. The dust contains also small particles of metals and rust that were released from other objects and can be left on the surface of street furniture and cause various stains, colouring and deformation. Grease and other dirt depositions are considered as the common phenomenon.

The hand-touch leaves the visible mark on the surface, for instance after the manipulation with the product without using protective gloves or during common usage of street furniture.

CONTROL

Instructions for control to be carried out on regular basis and common maintenance steps are set in the appendix no. 1

MAINTENANCE

Process of obligatory maintenance:

1. clean the surface using sponge with hot water with soap or
 - a. mild solution of hot water with detergent used for common cleaning
 - b. organic (alcoholic) solvent used to remove fingerprints or grease marks
 - c. agent for cleaning and maintenance of stainless steel surfaces, bought at acknowledged manufacturer (in case steel dust particles attach onto the surface)
2. clean the surface with hot water with soap after using solvents and wash it with clean water
3. dry using cloth until the surface is fully dry

Regarding the brushed or polished surface, the direction of hand cleaning should be in the direction of surface pattern. The steel spring mattress or abrasive detergents on sand character cannot be used in any case as they can damage the stainless steel surface.

Notification:

After thorough cleaning, the surface is free of grease and therefore also of any surface protection. Moreover, the matters from cleaning detergents always leave on the surface and can result in irremovable marks. Therefore, it is necessary to treat the product after the "cleaning procedure". Spray for treatment of stainless steel (foam in the spray) is recommended.

If the treated and polished surface is covered by this thin layer, it is very well protected and also resistant to finger prints, grease and other dirt. All other cleaning of stainless steel products that are maintained on regular basis is faster and easier. The manufacturer recommends the application even on new product, prior to common usage.

**WOW!**

Corrosion resistance of steel is based on the combination of chemical matters, mainly chrome, nickel and molybdenum, optionally also titanium. These chemical matters are not contained in steel for structural purposes at all. If AISI316 to AISI304 is compared, it contains more nickel and molybdenum that considerable increase resistance against aggressive conditions.

•• ALUMINIUM ALLOYS

Aluminium alloys are very suitable for the exterior use thanks to great appearance for the long time, easy and cheap maintenance, low weight, great resistance to corrosion, sea water and tropical weather conditions, great weldability, great polishing-ability and the possibility to apply various colour shades.

Aluminium castings, sheets or extruded profiles of aluminium alloys are used for some elements of street furniture. Depending on used technology, AlMg3, AlSi7Mg03 possible AlSi10MnMg grades are used. The use of aluminium castings without further surface treatment (for instance powder coating or anodisation) is utterly standard and problem-free. As a standard procedure, the product parts made of aluminium alloys are blasted using abrasive granulate that creates the characteristic matt look.

Aluminium and its alloys are of low density (i.e. low weight; one-third if compared to

steel) and of very good resistance against corrosion. The surface of aluminium cast can start oxidize. In that case, the uneven colour changes appear. The influence of corrosion-environment is not usually distinct; the passive layer that prevents other corrosion is created. The whole surface unifies over some time. The aluminium oxidation caused by climate is a common phenomenon and therefore is not considered as a defect and cannot be accepted as a claim. In case the client wants to avoid the possible oxidation, the surface can be treated with powder coating. Some parts can be equipped by decorative anodisation (the colour of anodised surface is dark grey).

Aluminium does not have negative impact on living organism. It is easily recyclable and the production of aluminium alloys burdens the environment in much lower scale than the production of comparable steel products.

Products that contain aluminium alloy castings: MINIMUM litter bin, ISAC, MIELON, DONAT and BARD bollards, MIELA, PORTIQUA, VLTAU, PORT, EMAU park benches, and GOMEZ, ELK bicycle stands.

Cladding of Minimum litter bin is made of extruded aluminium alloy profiles.

CONTROL

Instructions for control to be carried out on regular basis and common maintenance steps are set in the appendix no. 1

MAINTENANCE**Process of obligatory maintenance:**

1. clean the surface with hot water with soap or mild detergent
2. check the connection material. In case it has loosen, tight it up.
3. check the surface of aluminium structure. In case of found damage, repair it.

REPARATION PROCEDURE:

Before maintenance, it is necessary to consider the following points:

- scope of the damage (In case of more extensive repair, it is recommended to let mmcité carry out the repair)
- ambient temperature must be between +5°C - +40°C
- relative air humidity cannot exceed 80%
- surface temperature cannot be lower than 3°C above condensation point

Reparation procedure of anticorrosion protection:

1. mechanically clean the damaged spot, the surface has to be clean and dry
2. degrease the damaged steel parts with industrial alcohol or gasoline
3. regrind the surface using sandpaper P120
4. apply the powder coating (according to the manufacturer's instructions) or apply the spray colour

Notification:

The colour shade after a repair can slightly differ from the original one – they will match approx. after 12 months.

**WOW!**

Aluminium alloys are best to achieve uniqueness of the parts as they are casted into mold or extruded through the tool. The alloys enable a lot of visual options: natural look of aluminium alloy, powder coated surface, anodised surface.

If the project is specified in tender in details, it is difficult to replace it with any alternative because it is always needed to invest into the molds.

Appearance of aluminium parts is nice even over the years.

Aluminium parts are 100% recyclable and the production of these parts has significantly smaller impact on the environment thanks to the fact that precise sophisticated molding or extrusion manufacturing procedures significantly eliminate the need of further machining process.

•• SELF-COMPACTING CONCRETE – SCC

Self-compacting concrete has similar mechanical properties as common concrete. Its main advantages are: high homogeneity of the substance, minimal quantity of pores, strength, high quality surface and high lifespan.

Neither vibration nor compaction is necessary during the production which improves working environment thanks to positive effect on health and safety at work.

SCC was developed in Japan at the end of 80's last century. In Europe the concrete established itself thanks to international project, financed by European Union, during 1997-2000.

Mmcité uses mixture with comprehensive strength of 80MPa pressure for our concrete cast bench side frames or litter bin pedestals. Side parts of FORMA benches, upstands of MINIMUM litter bins and backrests of SATELLITE benches are made of SCC.

•• HIGH-STRENGTH CONCRETE– HSC

High-strength concrete is used for specific thin-wall concrete street furniture. The concrete is made of fine mixture of aggregate, cement, microsilica, water and other matters. By contrast to common concretes, high-strength mixtures contain polymer fibres increasing the flexural strength and tensile strength. Among other advantages belong excellent fluidity, minimal segregation, higher resistance, smooth surface with no or minimal appearance of tiny bubbles and partial flexibility.

The mixture of high-strength concrete, that mmcité uses, reaches the comprehensive strength of 100Mpa pressure.

The BETTER litter bin is made of high-strength concrete. Standard colour concept is light and dark grey.

•• ULTRA-HIGH PERFORMANCE CONCRETE- UHPC

Ultra high performance concrete – UHPC is of similar texture as high-strength concrete with improved mechanical properties. Currently, it is considered to be the most sophisticated concrete mixture.

It is used if lower weight is required, if inner steel supports need to be removed or if longer lifespan of concrete in aggressive environment has to be reached.

Comprehensive strength is higher than 150Mpa pressure; tensile strength is higher than 15MPa.

Lifespan is established for 200 years. Together with the lower volume and weight it has positive impact on the environment: lower demand on foundation under the concrete

street furniture, lower costs for transport and manipulation. UTC® (ultra-tense concrete), which is the kind of UHPC, is used for CONSTRUQTA park bench. Standard colour concept is white and light grey.



WOW!

All three above mentioned kinds of concrete enable to cast the parts with „exposed“ surface.

As a standard, the surface of concrete parts is protected by colourless transparent impregnation limiting the water or moisture coming in and it facilitates the maintenance.

The impregnation has to be recoated every 2 years.

There are small openings on the surfaces caused by air bubbles. It does not concern the defect and the mechanical properties are not lowered.

Colour deviation of one colour used for different products of the same range can be maximally 15%. Thanks to the comprehensive strengths over 100MPa (HSC and UHPC), it is possible to cast the parts with thin walls which contributes to the modern look of the product.

•• GLASS

Glass is used for shelter roofing and vertical panels. Side and rear walls are made of safety glass.

The quality of glass is guaranteed by its manufacturers based on certified tests, certificates, technical and safety sheets. The glass panels are installed into special profiles, possibly into fixtures on steel structure, which are filled with appropriate sealing so that steel does not touch glass. If the steel touches glass, the glass deformation might occur (due to ambient environment or properties of the used materials, or other impacts).

CONTROL

Instructions for control to be carried out on regular basis and common maintenance steps are set in the appendix no. 1

The user is obliged to check the fixture including sealing, every 6 months. In case any defect occurs, the sealing must be repaired according to the supplier's instructions or the customer should order the repair directly from the supplier

MAINTENANCE

We recommend washing glass panels with common detergents twice a year.

Obligatory maintenance procedure:

1. wash the glass panels with hot water and mild detergent
2. check the deformation of glass panels
3. tighten the connecting components
4. check, eventually change, the sealing on AL strips

During the winter period, it is necessary to remove the continuous snow layer out of the roofing. It is needed to meet the personal safety and it is recommended to remove the snow symmetrically, from both sides at the same time.

Notification:

As a standard, tempered glass is not tested (certified) on spontaneous breakage. Upon request, the certification according to HST (Heat Soak Test) complying with EN 14179 standard is possible. Among others, the test simulates the conditions that cause spontaneous breakage of glass panels. The price of glass panel with this certification is much higher and can be sent upon request. However, without

this certification, the spontaneously broken glass panels cannot be claimed to the supplier. According to the manufacturers of glass panels, it concerns 0,1% of produced glass panels that suffer from spontaneous breakage.

There are locations and placing (such as railing, walkable boards, high building) where higher demands arise (such as railing, walkable boards, high building) where higher demands on safety are strictly necessary – the project manager has to evaluate this factor.

It is needed to immediately Exchange the glass panels if any deformation occurs.



WOW!

It is not possible to cut or drill into the tempered glass after toughening process.

•• POLYCARBONATE

Twin-wall polycarbonate (PC) is used for shelters with arched roofing. Polycarbonate boards with one-sided filter against UV radiation ensure an extra-ordinary resistance to deterioration due to climatic conditions. These plastic boards are supplied in opaque/opal shade with sufficient light transparency, but also provide semi-shade for a person inside. Polycarbonate is highly flexible and its photometric properties are also at a high level. Aluminium strips (U-profile), filled with silicone, are usually applied on the cut edges of the board. In specific cases, full polycarbonate is used.

CONTROL

Instructions for control to be carried out on regular basis and common maintenance steps are set in the appendix no. 1

MAINTENANCE

Obligatory maintenance procedure:

1. wash the polycarbonate panels from both sides with hot water and mild detergent
2. visually check the deformation of glass panels
3. tighten the connecting components
4. check, eventually change, the sealing on AL strips

The user is obliged to check the polycarbonate boards once 6 months. In case any defect occurs, the immediate repair must be carried out according to the supplier's instructions or the customer should order the repair directly at the supplier

During the winter period, it is necessary to remove the continuous snow layer out of the roofing. It is needed to meet the personal safety and it is recommended to remove the snow symmetrically, from both sides at the same time.

Notification:

Due to climatic conditions, liquefaction of compressed air takes place inside polycarbonate. This phenomenon is standard. As the polycarbonate board is not vacuum-sealed, liquid air evaporates soon thanks to climate action.

The use of diluents and other chemical detergent, including detergents containing alcohol, is unacceptable as it could result in damage of plexiglass in form of cracking. If any deformation of plexiglass occurs, it is necessary to replace the damaged board.

During the winter period, it is necessary to remove the continuous snow layer out of the roofing. It is needed to meet the personal safety and it is recommended to remove the snow symmetrically, from both sides at the same time.

•• PMMA (PLEXIGLASS)

Poly-methyl-methacrylate) (PMMA), commonly known as acrylic glass/ plexiglass is transparent synthetic polymer with properties of thermoplastic. Thanks to its low weight, higher resistance to bumps and climate conditions is it used as an alternative to glass for shelters. Material is UV-stable.

Plexiglass boards are supplied in opaque/opal shade with sufficient light transparency, but also provide semi-shade for a person inside. PMMA boards are used for EDG bike shelters ending in 03 coding.

CONTROL

Instructions for control to be carried out on regular basis and common maintenance steps are set in the appendix no. 1

MAINTENANCE

Obligatory maintenance procedure:

1. Wash the plexiglass panels from both sides with warm water and mild detergent using soft cloth, do not dry with the cloth
2. visually check the deformation of glass panels
3. tighten the connecting components which hold the boards to the steel structure
4. check, eventually change, the sealing on the edges

•• WOOD

Wood is considered as a commonly available natural material that is used by mankind for the whole time being. Flexibility, strength and durability are considered as the advantageous features of this material and wood types that optimally combine these three properties are chosen for street furniture elements.

Wood works well even in the ambient environment with unstable humidity if proper and regular maintenance is carried out.

JATOBA TROPICAL WOOD

Jatoba tropical wood belongs to the most widely used wood imported from South America. It is almost maintenance-free, exceptionally stiff, strong, hard and highly resistant to fungus, molds and termites. Another great advantage is its resistance to vandalism (hardness of cca 130 Nmm-2 = 2820 lbf, value according to Janek) makes it difficult for cutting or graving). It belongs to the very hard wood (wood with the hardness higher than 80 Nmm-2).

Jatoba can exhibit quite a large colour variation of cherish-red-brown shades. The typical characteristics of all tropical wood kinds are gradual graying effect and opening and closing pores due ambient temperature and air moisture. The opening usually appears as small cracks. It concerns repeatable and natural phenomenon, dependent on ambient temperature and air moisture, which does not lower the quality and does not limit the usage. These above mentioned common features cannot be accepted as a claim as they are not considered as defects.

In case site furnishings of tropical wood are located in the exterior, 5 mm sagging or twisting per 1m length is allowed.

Notification:

In case of natural tropical wood (without oil treatment), during the first few weeks after installation, a red resin called kopal might leak out. Therefore, to prevent possible damages (temporary coloring of the pavement), we recommend protecting the area around and under the product using e.g. PE foil, OSB board or other material. mmcite minimizes kopal leakage by pressure washing out in mmcite premises. The final client has to be advised about this natural phenomenon when product is to be placed onto the decorative pavement.

If kopal leaks out onto the pavement, it is possible to wash it out, but it has to be done within the shortest possible delay. It might be washed with pressure stream

of water, wipe it using cloth or even detergent including sodium hypochlorite. The Kopal leakage is a natural behaviour of jatoba wood. Since it does not represent quality aspect, it is not a matter of claim. If the wood is oil treated, the possibility of kopal leakage is limited. The oil treatment is carried out for the extra-charge.



WOW!

In case site furnishings of tropical wood are located in the exterior, sagging or twisting are allowed. For the Woody benches, sagging of 10mm/m is allowed.

ACACIA WOOD

Acacia wood (commonly called robinia or black locust) is yellow-brown, heavy, hard (hardness of 80-90 Nmm-2 = 1700 lbf, value according to Janek), resistant wood sourced in Europe. However, originally it comes from Mexico and South America.

It is highly resistant to putrefaction and fungus. These qualities make it suitable for outdoor use.

When exposed to weather conditions, it behaves in a similar way like tropical wood. The surface of the wood gradually changes to soft, silver-grey color as the pigments in the surface layer of the wood start fading away. The enlargement of pores occurs mainly on front sides looking like cracks. It regards repeatable phenomenon as the pores close and open depending on ambient temperature and humidity and it does not lower the quality and functionality of the wood. Therefore, it is not subject of the claim.

Acacia wood is supplied without surface treatment or treated with transparent semi-matt oil for outdoor use.

In case site furnishings of acacia wood are located in the exterior, 5 mm sagging or twisting per 1m length is allowed.

Notification:

In case of acacia wood (without oil treatment), during the first few weeks after installation, saponins might leak out. The saponins can colour the paving or steel structure. The final client has to be advised about this natural phenomenon. If saponins leak out onto the pavement, it is possible to wash it

out, but it has to be done within the shortest possible delay. It might be washed with pressure stream of water, wipe it using cloth or even detergent including sodium hypochlorite.

The above mentioned natural behaviours do not represent quality damage and are not accepted as claims.

If the wood is oil treated, the possibility of saponins leakage is limited. The oil treatment is carried out for the extra-charge.

CONTROL OF JATOBA AND ACACIA WOOD

Instructions for control to be carried out on regular basis and common maintenance steps are set in the appendix no. 1

MAINTENANCE OF JATOBA AND ACACIA WOOD

We recommend that you simply allow your furniture to weather naturally this way and maintain the silver patina with regular, gentle cleaning with soft-soap flakes dissolved in warm water (not detergent). Let the wood weather to a natural grey or oil to maintain the rich tones.

To preserve the original color of the wooden parts, the oil treatment is necessary. Frequency of treatment with oil depends on location and intensity of usage. Generally, it is recommended to apply the oil once the surface of the wood becomes dull and the rain water is absorbed by wood (instead of staying on the surface). The first maintenance application should be carried out by the end of the third month after installation. Then the treatment should be done minimally once a year (we also recommend the pre and post-seasonal treatment using oil). The choice of oil should be discussed with the manufacturer.

TREATMENT AND REPAIR OF JATOBA AND ACACIA WOOD

In order to keep the surface smooth, carry out the grinding (using P150 sand paper or rough sponge) during the usage. The recommended interval is every 6 months.

Teak oil treatment application:

If it is needed to carry out the surface treatment, the preparation phase is very important. The wood moisture shouldn't exceed 16%, the air temperature shouldn't drop under +5°C and relative air humidity over 70%.

1. clean the surface with water and mild detergent
2. regrind it with sandpaper P150 -P220
3. apply 2 layers of teak oil using sponge or cloth (time interval specified by the manufacturer)

4. fasten the connecting material

In case of more extensive repair, it is recommended to let mmcité carry out the repair.

PINE WOOD

Pine wood is light, soft, white or pale yellow wood which resists shrinking and swelling which are perfect characteristics for outdoor use. The pine wood comes from Scandinavia and is harder and more resistant in comparison to the one coming from middle Europe.

Pine wood lamellas and boards made of laminated massive beams are standardly supplied with surface treatment in three optional shades. The base layer consists of quick-drying impregnating agent, including biocide components which protect the wood against putrefaction and turning blue. Further coatings, based on natural plant oils and waxes, are applied so that the wood is resistant to weather, UV radiation, scratching or chemicals. The natural oils get deep inside the wood, they keep the wood healthy and elastic and they prevent drying. The wood can breathe and the humidity is regulated. The treatment comes in country brown, park white and urban grey optional shades.



WOW!

Pine wood, that is used by mmcité, is exclusively sourced in Europe.

The pine boards of WOODY bench are treated with Lignovit, quick-drying impregnating agent consisting of effective biocids protecting the wood from rotting and decay. Further, the layer of Lignovit glaze is applied to ensure strength an excellent resistance to climatic conditions, UV stability and high resistance to scratching and influence of chemicals. Eventual swelling and shrinkage are restricted.

In case site furnishings of pinewood are located in the exterior, sagging or twisting are allowed. For the Woody benches, sagging of 10mm/m is allowed.

CONTROL

Instructions for control to be carried out on regular basis and common maintenance steps are set in the appendix no. 1

MAINTENANCE

By checking the surface regularly, you can prevent permanent damage. An important condition is a recoating once every 12 months (mmcité recommends the preseason coating). In case of mechanical damage of the surface, it is necessary to maintain it immediately. We recommend ordering a set for repair, including detergent and final treatment and 2 pieces of cloth.

Procedure of seasonal treatment:

1. spray lamellas (boards) with cleaning agent from the set
2. after 10 minutes, wash the surface with hot water in order to remove all dirt
3. apply the final agent on completely dry lamellas
4. after 10 minutes, polish them with cloth

The procedure can be repeated in order to intensify the effect.

In case of more extensive repair, it is recommended to let mmcité carry out the repair.

Maintenance Instructions

If it is needed to carry out the surface treatment, the preparation phase is very important. The wood moisture shouldn't exceed 16%, the air temperature shouldn't drop under +5°C and relative air humidity over 70%.

REPARATION PROCEDURE

Reparation Procedure – slightly damaged wood:

1. clean the surface with water and mild detergent
2. regrind it with sandpaper P120-150
3. clean the surface, apply the treatment on dry lamellas (boards), polish the surface after 10 minutes
4. fasten the connecting material

Reparation Procedure – more extensively damaged wood:

1. clean the surface with water and mild detergent
2. regrind it with sandpaper P120-150
3. apply the impregnating agent with sponge, drying period is approx. 4 hours
4. clean the surface, apply the treatment on dry lamellas (boards), polish the surface after 10 minutes
5. fasten the connecting material

In case of more extensive repair, it is recommended to let mmcité carry out the repair.

BIRCH MULTIPLEX MULTI-LAYER PLYWOOD

Sheathing of outdoor Pinecone gazebo is formed by scales made of multi-layer Multiplex plywood. It regards waterproof plywood containing many layers and veneers which are bonded together with glue (3rd gluing class in accordance with DIN 68705).

Plywood is treated firstly with oil impregnation and two layers of wood mordant including oil additive to achieve maximum wood preservation.

Important! Moderate cracking of surface, which can also appear in the area of edges, belongs to the natural characteristics of plywood having no impact on its lifespan. This process can be eliminated by regular renewal of coating and cannot be regarded as a subject of claim.

CONTROL

Instructions for control to be carried out on regular basis and common maintenance steps are set in the appendix no. 1.

MAINTENANCE

It is important to renew the coating, preferably every year after winter period, using lacquer brush or roller. In case of mechanical damage of lacquered surface, it is necessary to repair the damaged spot immediately to prevent further damage of the whole scale.

1. spray the scales using cleaning agent
2. after 10 minutes wash them with warm water and remove all dirt
3. regrind surface of wood with sandpaper P60-P80
4. apply lacquer on dry scales at ambient temperature between 15-25°C.
It is necessary to stir lacquer properly prior to its usage. The first coating dries approximately in 24 hours.
5. regrind surface of wood with sandpaper P60-P80 once again
6. apply second coating. Interval between coatings needs to be minimum 24 hours, however always needs to be subjected to real conditions.
7. wipe off redundant (not soaked in) lacquer after approx. 10-15 minutes, ideally with dry brush, eventually with absorbent cloth.

To accentuate lacquer the procedure can be repeated.

Maintenance instructions for treatment of birch Multiplex multi-layer plywood:
In case of plywood surface reparation, it is important to pay attention to preparation of

surface, moisture of wood and climatic conditions of the environment. The wood moisture should not exceed 16%, the air temperature shouldn't drop under +5°C and relative air humidity needs to be lower than 70 %.

REPARATION PROCEDURE

Reparation procedure – slightly damaged wood:

1. clean the surface with water and mild detergent
2. regrind it with sandpaper P120 - P150
3. clean the surface, apply appropriate lacquer on dry scales, after 10 minutes polish them with cloth
4. fasten the connecting material, fixing the scales with the construction

Reparation procedure – more extensively damaged wood:

1. clean the surface with water and mild detergent
2. regrind it with sandpaper P120 - P150
3. apply the impregnating agent using sponge. It dries for about 4 hours. Clean the surface, apply appropriate lacquer on dry scales, after 10 minutes polish them with cloth.
4. fasten the connecting material, fixing the scales with the construction

In case of more extensive repair of neglected wood surface, it is recommended to let producer of street furniture carry out the repair, eventually to order new scales.

•• RESYSTA

Resysta is used for particular products from mmcit  range as an alternative to wood. Resysta is extremely durable material, resistant to sun, rain, frost and even salt water. It consists of 60% rice husks, 22% common salt and 18% mineral oil. Thanks to its surface, it meets the visual appearance and haptic quality of wood. In comparison to wood, it requires minimal maintenance and is highly resistant to pests, mold and cracks. Unlike other composite materials, it looks great and it has a smooth surface. Resysta already meets most of the future environmentally sustainable material requirements.

Base material for its production is a worldwide waste, rice husks. It concerns recycled and fully recyclable material.

Resysta profiles can be cut, bent, grinded, glued, coloured and even welded together. The possibility of colour painting is a great advantage if compared to other composite materials.

Hollow material is not as strong as full wooden boards; therefore, resysta profiles are reinforced inside.

Due to the fact that standard prefabricated extruded profiles are used, these can be used only for particular mmcit  products. The current range of Resysta Family includes benches, litter bins and planters; thus the whole project might be realized using mmcit  products made of eco-friendly material.

CONTROL

Instructions for control to be carried out on regular basis and common maintenance steps are set in the appendix no. 1

MAINTENANCE

1. clean the surface with water and mild detergent
2. regrind it with sandpaper P60-P80
3. fasten the connecting material

Regarding the UV-stability, if glazing and further transparent lacquer are applied, 10-year warranty is guaranteed.

REPARATION PROCEDURE

1. clean the surface with water and mild detergent
2. regrind it with sandpaper P60-P80
3. clean the surface, apply two layers of treatment (special paint for Resysta has to be used)
4. check the connecting material and fasten it if loosen



WOW!

All resysta boards used for seat and backrest are produced on our own machines. We have come up with shapes of the boards, including the weight balancing.

•• HIGH PRESSURE LAMINATE (HPL)

High Pressure Laminate (HPL) boards are ideal for street furniture due to their resistance. It concerns laminated boards made of natural fibres with decorative laminates made of melamine or hardened synthetic resins according to EN 438 standards. HPL material consists of 60% paper and 40% resins (hardened phenol-formaldehyde resin for core layers

and melamine-formaldehyde resins for top layers. High Pressure Laminate boards are stiff, resistant to abrasion, moist, humidity and water vapour. HPL has great use properties as hygienic, easily maintained, water-proof surface with long lifespan and high resistance to chemicals and UV radiation. HPL surface does not require any further surface treatment. Wide range of decors, various formats and thickness of boards are available. As a standard, we use white or black HPL.

CONTROL

Instructions for control to be carried out on regular basis and common maintenance steps are set in the appendix no. 1

MAINTENANCE

Obligatory maintenance procedure:

1. clean the surface with water and mild detergent
2. gently remove dirt
 - if needed, liquid abrasive agents can be used, however it can result in more matt surface
3. dry the surface using clean and soft cloth
4. check the connecting material and fasten it if needed

Notification:

HPL boards are not walkable and it is prohibited to walk or jump onto the boards as it would result in loosen connecting material, deformation and even destruction of the product. HPL board is not intended for cutting of food.
If manipulated with HPL street furniture, pay higher attention as the corner could be broken after clash.

•• POLYETHYLENE (Citépin plugs, cladding, liners)

POLYETHYLENE WITH LOW DENSITY (LDPE)

LDPE – polyethylene material with low density is used for manufacturing of round ribbed caps called „Citépíns“. The seat equipped with CITÉPIN plugs thermo-regulates a person sitting on the surface and makes the seating more comfortable.

The plugs are supplied with shiny surface in white, light grey, dark grey and black colours or with mat surface in light grey and black colour.

Round CITÉPIN plastic plugs are used for perforated steel seat of Sinus and Radium benches.

POLYETHYLENE WITH HIGH DENSITY (HDPE)

HDPE – polyethylene material with high density is used for several products. HDPE is greatly resistant to chemicals, abrasion, sanitary and enables to use the products at very low temperatures. Products made of HDPE do not suffer from corrosion or oxidation. HDPE is used for cladding of Cylindre litter bin and liners of Minium and Diagonal litter bin.

CONTROL

Instructions for control to be carried out on regular basis and common maintenance steps are set in the appendix no. 1

MAINTENANCE

Obligatory maintenance procedure:

1. clean the surface with water and mild detergent
2. gently remove dirt
3. dry the surface using clean and soft cloth
4. check the connecting material and fasten it if needed

•• EPDM RUBBER

Profiles and boards made of EPDM rubber function as sealing of compact rubber on the basis of Ethylene-Propylene-Dien rubber and inorganic and organic additives (for example filling agents, thickening agents, softening agents and additives against aging. EPDM does not transmit air or water. It is resistant to weather temperatures in the range from -40°C to +100°C without the change of physical, mechanical and chemical

properties. For a short term, it resists temperatures up to +130°C however the early aging and change of properties have to be taken into account

EPDM is produced at the hardness level of 70±5° ShA. The surface of sealing is smooth and black.

EPDM profiles and boards are suitable as sealing of constructional and structural elements thanks to the mechanical, physical and chemical properties and possible permanent deformation, used in various industry fields such as sealing for automotive industry.

Lifespan of rubber profiles and boards is 50 years in common Middle-European climate conditions.

CONTROL

Instructions for control to be carried out on regular basis and common maintenance steps are set in the appendix no. 1

MAINTENANCE

If rubber gets in touch with colours or oils, the dry cloth has to be used immediately.

Rubber products are not permitted to be packed into foils made of softened polyvinyl-chloride.

Obligatory maintenance procedure:

1. clean the surface with water and mild detergent
2. clean the surface using solution of alcohol and glycerin (10:1)
 - petrol, benzene, turpentine, tri-chloride, petroleum etc. cannot be used for cleaning
3. dry the surface using clean and soft cloth
 - it is not permitted to dry rubber product by direct exposure to radiant heat

Lifespan of products made of rubber can be prolonged by using glycerin or other agents for rubber maintenance.

Notification:

All products containing rubber parts have to be stored, treated and maintained according to the manufacturer's instructions, given upon request, according to ČSN 63001:1971 standard of „Rubber products – Storage and treatment of rubber and products made of rubber“, and DIN 7716:1982 „Rubber products: requirements on storage, cleaning and maintenance, paragraph 3.

•• CUSHIONS

A set of waterproof cushions is available as an accessory to the STACK range with steel grids. The inside of seat cushions is filled with Dryfeel exterior foam, which absorbs less humidity and thanks to its extremely porous cellular structure dries much faster than regular foam fillers. The seat is covered with a water-resistant exterior fabric that is pleasant in contact and provides high seating comfort. The fabric is resistant to ordinary soiling, it is washable and cleanable with a bleach solution.

MAINTENANCE

In order to maintain the technical and visual parameters of seat cushion, it should be regularly maintained with a clean, damp cloth, or occasionally washed at 40°C.

STAINS REMOVAL

Stains must be removed as soon as they occur.

Remove any dirt left.

Clean the affected area with a clean cloth moistened with a solution of mild soap and water. Gently rinse with clean water and allow to dry naturally.

BLEACH CLEANING (to remove mildew, odors and resistant stains)

Prepare a solution of 80% water and 20% household bleach.

Clean the affected area with a clean cloth moistened with a solution of water and bleach. Rinse thoroughly with clean water and allow to dry naturally.

WASHING

Wash the cover at 40°C using a "gentle" cycle and minimum speed.

Do not overfill the washing machine. Allow to dry naturally without using ironing.

STORING

In order to ensure the longest possible lifespan of cushions, it is recommended to store them or eventually provide them with a protective cover for long periods of non-use, out of season or extreme conditions. Make sure the cushion is clean and dry before storing. Avoid storing it in a humid environment.

•• LOCKS, MECHANISMS, SEALING

Street furniture elements such as litter bins, bollards or ashtrays consist also of movable mechanisms and locks. The control and maintenance on regular basis is crucial, the

recommended interval is each 3 months. Regarding the **fountains**, during the winter period if ambient temperature goes below +5°C, water has to be let out and the valve closed. In case of vandalism (for instance aggradation of water outflow around nozzle or if bowl and nozzle are damaged), it is needed to replace the set of bowl and nozzle. Due to the proper sealing function, this set is demountable.

In case of **movable bollards**, it is necessary to treat parts, which are inserted into each other, with Vaseline or an agent on the same basis to prevent frosting.

MAINTENANCE:

The maintenance is crucial mainly before and during the winter period! In winter, the maintenance interval is shorter – it should be carried out as needed (due to weather changes).

Regular maintenance of locks and mechanisms

Maintenance interval of 3 months

1. Clean the locks from dirt and dust – it is recommended to use cloth or a small brush
2. Check the lock works properly
3. Apply a mixture based on oils for lubrication of locks and the mechanisms
4. Lock and unlock it several times in order to get the oil into the whole mechanism.

If damage on the mechanism is found out, the manufacturer will supply a new one according to customer's requirements and the order; eventually the manufacturer will exchange the mechanism as well.

•• CONNECTING MATERIAL

Stainless steel A2 grade connecting material is used for the installation of wooden parts to steel structure.

It is needed to check the connection material once each six months. If the connecting material has loosened up, it has to be fastened in order to prevent the damage of the product.

•• FOUNDATION

If the foundation for anchoring of street furniture is visible, it is needed to visually check the compactness, mechanical damage or cracks in concrete.

certificates

ISO 9001:2009

ISO 14001:2005

OHSAS 18001:2008

FSC (Forest Stewardship Council)

quality management system for the production and assembly of steel structures

environmental management system

Occupational health and safety management system

verifying the authenticity of wood. Products carrying the FSC sign are independently certified to assure the consumer that it comes from forests that are looked after and managed in order to comply with social, economical and ecological requirements of today's and future generations. More information at www.fsc.org, mmcité1 is registered under production plant kovocité, for more information see SW-COC-003372 at www.fsc-info.cz

certificate of qualification

for steel structure products and frameworks (particularly for railway and special projects)

certificate of conformity of production

CE according to EN 1090-1,2

declaration of performance

RoHS

available upon request

according to directive of European Parliament and Council (EU) no. 305/2011

mmcité meets the directive of European parliament and Council 2011/65/EU about the restriction of the use of certain hazardous substances in electrical and electronic equipment,

mmcité1 fights copying

mmcité1 products have a protected industrial design, registered with the authorized bodies ensuring legal protection.

The partners of mmcité1 assume responsibility for the protection against copying mmcité1 products, or their production by third parties and exert all efforts towards preventing any copying of mmcité1 products.

mmcité 1 contributes to the sustainable development

Majority of materials used by mmcité company are recycled and mostly and largely recyclable. Steel structures are made of fully-recyclable steel or aluminium alloy and composite materials with high resistance are carefully chosen.

By international certification of tropical wood guarantees mmcité guarantees the minimum negative effects on the environment. Within the range of resysta family, new products of ecological Resysta material are offered. Resysta is extremely durable material, resistant to sun, rain, frost and even salt water. It consists of 60% rice husks, 22% common salt and 18% mineral oil and maintains the visual appearance of wood. In comparison to wood, it requires minimal maintenance and is highly resistant to pests, mold and cracks. Unlike other composite materials, it looks great, having a smooth surface. Resysta already meets most of the future environmentally sustainable material requirements. It is recycled – using the real waste of rice husks, and fully recyclable. Upon request, we can provide the internationally-acknowledged certification **LEED system (Leadership in Energy and Environmental Design)** for so-called green buildings, ensuring the approval of third party that the building/space has been projected and built in compliance with strategies for improvement of building projects considering the environment.

mmcité aims to enhance the quality of public realms by using environmentally-friendly materials with the aesthetic value persevered.



STAVCERT

Praha, spol. s r. o.

Jablonského 640/2, Praha 7



**CERTIFICATION BODY PROVIDING CERTIFICATION OF
MANAGEMENT SYSTEMS**

accredited by Czech Accreditation Institute (CAI)

CAI is signatory of Multilateral Agreement IAF of mutual acknowledgment

issues

CERTIFICATE

for

mmcité 1 a.s.

Bilovice 519, 687 12

Identification N°. 27670864

Hereby is being certified that the established and applied

quality management system

for

**designing, production and assembling of steel structures
including urban mobiliary**

complies with

ISO 9001:2015

Certificate N° QMS-4643/2020

The certificate valid from 3.12.2020 to 2.12.2023

Certification valid from 3.12.2020 to 2.12.2023

Prague, 26.11.2020



Ing. Pavel Florian
company executive



STAVCERT

Praha, spol. s r. o.

Jablonského 640/2, Praha 7



**CERTIFICATION BODY PROVIDING CERTIFICATION OF
MANAGEMENT SYSTEMS**

accredited by Czech Accreditation Institute (CAI)

CAI is signatory of Multilateral Agreement IAF of mutual acknowledgment

issues

CERTIFICATE

for

mmcité 1 a.s.

Bilovice 519, 687 12

Identification N° 27670864

Hereby is being certified that the established and applied

environmental management system

for

**designing, production and assembling of steel structures
including urban mobiliary**

complies with

ISO 14001:2015

Certificate N° EMS-1498/2020

The certificate valid from 3.12.2020 to 2.12.2023

Certification valid from 3.12.2020 to 2.12.2023

Prague, 26.11.2020




Ing. Pavel Florian
company executive



STAVCERT

Praha, spol. s r. o.

Jablonského 640/2, Praha 7



**CERTIFICATION BODY PROVIDING CERTIFICATION OF
MANAGEMENT SYSTEMS**
Accredited by Czech Accreditation Institute (CAI)

issues

CERTIFICATE

for

mmcité 1 a.s.

Bílovice 519, 678 12

Identification N° 27670864

Hereby is being certified that the established and applied

occupational health and safety management system

for

**designing, production and assembling of steel structures
including urban mobiliary**

complies with

ISO 45001:2018

Certificate N° OHSMS-922/2020

The certificate valid from 3.12.2020 to 2.12.2023

Certification valid from 3.12.2020 to 2.12.2023

Prague, 26.11.2020



Ing. Pavel Florian
company executive

CERTIFICATE

Information from 2021/01/18 - 8:43 UTC

Certificate Code NC-COC-014722

Former Certificate Code RA-COC-003372

License Code FSC-C011999

MAIN ADDRESS

Name Kovocité a.s.

Address Bílovice 519

Bílovice

68712

CZECH REPUBLIC

Website <http://www.kovocite.cz>

CERTIFICATE DATA

Status Valid

First Issue Date 2008-08-19

Last Issue Date 2018-09-05

Expiry Date 2023-09-04

Standard FSC-STD-40-003 V2-1;FSC-STD-40-004 V3-0

VALID GROUP MEMBER/SITES

Site Subcode	Name	Street	Town/City	State/County	Postal Code	Country or Area	Valid From	Valid To
NC-COC-014722-A	Egoé life s.r.o.	Bílovice 519	Bílovice		687 12	CZECH REPUBLIC	2009-11-10	
NC-COC-014722-I	mmcité 10 GmbH	Schottenfeldgasse 72/2/8	Wien		A-1070	AUSTRIA	2020-08-01	
NC-COC-014722-H	mmcité 5, S. L.	Pol. Industr. Masia del Juez, c/Perelló 29	Torrent		46900	SPAIN	2020-08-01	
NC-COC-014722-F	mmcité 7 LLC	2905 Westinghouse Blvd, Suite 300	Charlotte	North Carolina	28273	UNITED STATES	2018-07-16	

Site Subcode	Name	Street	Town/City	State/County	Postal Code	Country or Area	Valid From	Valid To
NC-COC-014722-D	mmcit�1 a.s.	B�lovce 519	B�lovce		68712	CZECH REPUBLIC	2009-11-10	
NC-COC-014722-G	mmcit�11 Ltd	Exchange House Office 420, 494 Midsummer Boulevard	Milton Keynes		MK9 2EA	UNITED KINGDOM	2018-03-01	
NC-COC-014722-C	mmcit�2 s.r.o.	Brnianska 2	Trenc�n		911 57	SLOVAKIA	2009-11-10	
NC-COC-014722-B	mmcit�3 kft	Vahot u. 6.	Budapest		1119	HUNGARY	2009-11-10	
NC-COC-014722-E	mmcite8 Ltda.	Acesso Deputado Gen�sio Tureck - Acesso Oeste, n� 5833 - Bairro Alpino	S�o Bento do Sul		CEP 89.286-796	BRAZIL	2014-12-15	

PRODUCTS

Product Type	Trade Name	Species	Primary Activity	Secondary Activity	Main Output Category
W13 Outdoor furniture and gardening	Street and garden funiture	Dipteryx odorata; Hymenaea spp.; Robinia pseudoacacia L.; Tabebuia spp.	Secondary Processor	brokers/traders without physical possession	FSC 100%
W12 Indoor furniture W12.12 Parts of furniture	Laths and Components	Dipteryx odorata; Hymenaea courbaril; Robinia pseudoacacia L.; Tabebuia spp.	Secondary Processor	brokers/traders without physical possession	FSC 100%

DOCUMENTS

No documents found.

PACKING, TRANSPORTATION, HANDLING & STORAGE

Packing

Before leaving the factory each product is packed for its protection during transportation into shrink-wrap, carton, corrugated or solid cardboard, eventually we use the above mentioned in combination with foam filling or bubble wrap. The glasses are placed in a separate wooden or steel stands. Such wrapped groups of products are placed onto wooden pallets or into cardboard boxes, wooden boxes or wooden reinforced frames.

All packages are equipped with the necessary instructional symbols according to EN ISO 780 for handling, transportation and storage of the product.

Transportation & handling

During handling the packaging must not be exposed to excessive stress, which could result in damage to the packaging or a product.

Packed products have to be transported only in covered vehicles and must be secured against shifting or falling. Type of packaging ensures that the product is delivered to the customer in perfect condition and is clean and undamaged for follow-up installation.

Unless otherwise stated, the pallets are NOT STACKABLE. Recipient of the supply is obliged to ensure its proper unloading. A transporter is involved only in the check of the proper way of goods handling during unloading and records the method of unloading into the delivery note. The transporter is obliged to hand over the goods in undamaged packaging.

The recipient must inspect the shipment upon receiving it and immediately give notification of any externally observed damage. Moreover, the recipient has to give a notification by describing the nature of the damage to delivery note in participation of the transporter and photographically document it.

After unpacking, the recipient checks whether the specification on the delivery note corresponds to the products specification on the order, whether products correspond to the ordered requirements and whether the product is not physically or otherwise damaged.

For safe unloading of packed product or its parts it is necessary to use appropriate mechanisms:

- **Manual unloading**
- **Fork-lift truck or crane of an adequate loading limit for parts up to 6 m long**
- For suspension use textile belts – steel ropes or chains should never be used
- **High-lift truck (side one) with additional forks or crane with lifting load distribution rocker arm for parts longer than 6 m**

For suspension use textile belts – steel ropes or chains should never be used

Storage

The packaging is exclusively designed to protect the goods during the transportation. Even for temporary storage prior to installation, it is always necessary to remove product from the shrink-wrap. This will prevent condensation of air moisture inside the package and a possible damage to the surface of products.

Products must be installed immediately or stored in a dry ventilated area, eventually stored outdoors covered with a tarpaulin so that they are protected against dust, while ensuring adequate airing.

Before the next dispatch of products that are stored according to the previous guidelines, it is necessary to check the stored products visually, to pack them appropriately to the original form of packaging so that the product is protected against mechanical and weather damage. Necessary instruction symbols must be placed again on the package.

Failure to comply with the above mentioned conditions may lead to damage to the product for which the manufacturer bears no responsibility.

The packaging material is a part of the product and it is a property of the buyer; for its disposal it is recommended to use the services of recycling companies.



1. Failure to comply with the above mentioned conditions may lead to damage to the product for which the manufacturer and supplier bears no responsibility.

2. The furniture installation at the place of destination have to be executed according to the manufacturer's specification and the corresponding documents.

3. If you have any further questions, please contact us at j.tyrer@mmcite.co.uk

Guidelines for the maintenance of Carrara Marble



Carrara Marble provides a durable, hard-wearing surface, but like any other surfacing material, may suffer from staining. Regular maintenance and good cleaning practices should be followed.

Initial Maintenance

Maintenance requirements are minimal under normal service conditions. If necessary, surfaces may be washed with brush and water or using high pressure hoses. If the latter, care should be taken not to blast away any jointing materials.

Cleaning and Protection

The composition of Carrara Marble is predominately Calcium Carbonate which makes it susceptible to acids and therefore acid based cleaning solutions should not be used. A pH neutral cleaner that is designed for use on marble surfaces must be used.

1. Use a premium marble sealer for Carrara Marble to create a barrier through which, any acidic substances, must work through. Periodically test the stone to see if it needs to be sealed. This test is easy to do. Simply put some water on the surface of the stone and wait for a few minutes, and then wipe up the water. If there is a slightly darker spot where the water was, then the stone should be sealed. Sealing Carrara Marble will not make it stain proof, but it will allow you more time to clean up any spills that could be absorbed into the surface.
2. In between sealing your marble surfaces, be sure to use a pH neutral cleaner designed for use on your Carrara Marble.

Hardscape suggest **Stoneline 81** as a possible sealant:



Stoneline 81 is recommended to be retreated every 12 months but follow the testing procedure in Point 1 above.

In addition, there is even more that can be done to maintain the beauty and lustre of your Carrara marble surface. It is a type of stone that is amongst the most searched for marble types. Its rich history and notable uses are at least two reasons why people find it so appealing.

Hardscape can also supply on request:

- Advice on stain-removal techniques
- Referral to our specialist cleaning company as appropriate

Winter Maintenance

During Winter conditions, despite their effective ability to dissolve and loosen ice or snow from cold surfaces, salts and de-icing agents will have detrimental effects to the appearance of marble. Spalling, scaling, or pitting is a common problem that often occurs

Health and Safety

Some of the cleaning methods described above involve the use of chemicals, which may be damaging or dangerous if not used in the correct manner. It is important that safety warnings issued by the manufacturers of the chemicals should be read carefully and strictly adhered to.

In general, the following precautions should be taken:

- When using chemicals, protective clothing such as gloves, goggles, boots, and overalls should be worn.
- Ensure there is adequate ventilation in confined spaces.
- When using flammable materials, ban the use of cigarettes, naked flames, and other sources of ignition in the immediate vicinity.
- When diluting acids, always add acid to water and not water to acid.
- Dispose of safely any clothing which is contaminated with chemicals.
- Ensure care is taken not to damage, contaminate or stain any adjoining material.
- Protect personnel operating near the area to be cleaned from any injury or hazard created by the cleaning.
- Whenever possible care should be taken to ensure that the disposal of 'run-off' materials containing chemicals does not harm personnel, animals, or any part of the environment.
- Trials should be carried out on a small, preferably inconspicuous, area of paving to determine the effect of the chemicals before treating a larger area.

PLEASE NOTE – Any advice, recommendation or representation given by an employee of Hardscape Products Ltd shall not be made liable and therefore acted upon entirely at the Customer's own risk. This Datasheet is an information document drawn up in good faith. The information herein is based on tests carried out in our labs and is correct on the basis of our experience, but must be considered only as indicative because of the nature of the product whose behaviour varies with the minimal change in the surrounding conditions (environmental parameters, materials it comes into contact with, storage and ageing methods, etc.) For this reason, the information herein, even if based on our best knowledge, is no guarantee for the user since the customer's application, use and processing of our products and of the final product are beyond our control and are therefore wholly the customer's responsibility. We trust the tests we carried out can be a useful indication, even if we cannot accept any responsibility with regard to the result of your processing. It is the user's responsibility and duty to perform preliminary tests on the specific application, to assess suitability to the required use as it is his/her duty to check that the use of our products complies with the current laws, regulations, provisions and patents. This information must not be considered as an authorization and is no encouragement to infringe any patent. The data can be changed without notice and must not be considered as legally meaningful. Note: Advice and recommendations are subject to the circumstances of specific problems. Removal of stains cannot therefore be guaranteed. Certain cleaning products may be subject to statutory regulations for safe handling and usage (including COSHH and CDM regulations).



STONELINE 81

Trattamento ravvivante e protettivo per fine linea
End-line enhancer and protective treatment

Descrizione / Description

STONELINE 81 si utilizza per il trattamento a fine linea dei marmi e graniti lucidi, per incrementare il colore e la brillantezza del materiale, valorizzando le superfici trattate.

Protegge le superfici trattate da macchie di qualsiasi origine. L'elevata penetrazione ne esalta gli effetti sulle superfici naturali, garantendo un'azione duratura nel tempo.

Il prodotto è applicabile su linee di lucidatura automatica tramite l'utilizzo di ceratrici automatiche.

STONELINE 81 is suitable for the treatment on automatic line (end-line product) of polished marbles and granites to increase the colour and the brightness of the material, valorising the treated surfaces. It protects surfaces from every kind of stains. The high penetration exalts the effects on natural surfaces and guarantees a long-lasting action. The product can be applied on automatic polishing lines through the use of waxing machines.

Istruzioni d'uso / Instructions for use

L'applicazione si effettua con ceratrici automatiche.

Il velo di prodotto che si deposita nella fase di applicazione è di facile asportazione, tramite spazzole o feltri.

Il prodotto asciuga in pochi minuti e l'effetto ravvivante sul materiale è immediato. Non sedimenta sul fondo dei serbatoi e non intasa i tubi delle dosatrici automatiche.

L'effetto antimacchia desiderato si raggiunge 24 ore dopo il trattamento.

Nel caso di pavimenti, attendere 24 ore prima di camminare sulla superficie.

IMPORTANTE: quando una superficie viene trattata per la prima volta, è bene valutarne l'effetto su un campione o su un angolo nascosto.

Chiudere il contenitore dopo l'uso.

Apply the product by automatic waxing machine.

The veil of the product that is deposited in the phase of application is easy to remove through brushes or felts.

The product dries in a few minutes and the anti-stain effect will be reached after 24 hours after the treatment.

In case of floor application, do not walk on the surface before 24 hours.

IMPORTANT: when a surface is treated for the first time, check the effect on a sample or on a hidden corner.

Close the container after use.





SCHEDA TECNICA / TECHNICAL DATA SHEET 26/10/2020 rev 04

TENAX SPA VIA I° MAGGIO 226 – 37020 VOLARGNE (VR) ITALY P. +39 045 6887593 F. +39 045 6862456 tenax@tenax.it www.tenax.it

Dati tecnici

DENSITÀ a 25°C gr/cm³: 0,878

ASPETTO: liquido

COLORE STANDARD: opalescente

CONSUMO: con un litro si trattano circa 30-40 metri quadri di materiale. Il consumo dipende molto dalla porosità del materiale.

Technical data

DENSITY at 25°C gr/ml: 0,878

ASPECT: liquid

STANDARD COLOUR: opalescent

QUANTITY TO BE USED: normally with 1 litre is possible to treat 30-40 square meters of stone. The consume depends strictly from the porosity of the material.

Tempo di Stoccaggio / Shelf life

Nelle normali condizioni di uso e lavoro, il prodotto ben conservato tra 18-25°C lontano da fonti di calore, umidità e luce diretta del sole viene garantito 2 anni.

The product will last at least 2 years in the normal condition between 18-25°C, kept away from source of heat, humidity and sun light

Misure di sicurezza / Safety rules

STONELINE 81 è un prodotto chimico. Prima dell'utilizzo si raccomanda di leggere la scheda di sicurezza e le note riportate sui barattoli/fusti.

STONELINE 81 is a chemical product. Please read the safety data sheet before usage and the rules written on the label on the tins/drums.

La presente scheda tecnica è un documento informativo compilato in buona fede. Le informazioni in essa contenute sono basate su prove eseguite presso i nostri laboratori e sono corrette in base alle nostre esperienze, ma devono essere considerate alla stregua di dati indicativi a causa della natura del prodotto il cui comportamento è molto mutevole al variare anche minimo di condizioni al contorno (parametri ambientali, materiali con i quali viene a contatto, modalità di conservazione e invecchiamento, etc.). Pertanto le informazioni ivi contenute, pur basandosi sulle nostre migliori conoscenze, non costituiscono garanzia per l'utilizzatore, dato che l'applicazione, l'uso e la lavorazione dei nostri prodotti e del prodotto finale da parte del cliente sono al di fuori nostro controllo e quindi totalmente sotto la responsabilità del cliente. Confidiamo che le prove da noi eseguite possano esservi di utile orientamento pur non potendo noi assumere alcuna responsabilità per quanto riguarda il risultato delle Vostre lavorazioni. E' compito e responsabilità dell'utilizzatore effettuare una fase preliminare di test del prodotto sulla specifica applicazione per valutarne l'idoneità all'impiego richiesto così come è suo obbligo verificare che l'utilizzo dei nostri prodotti sia conforme alle leggi, norme, disposizioni e brevetti vigenti. Queste informazioni non vanno intese come un'autorizzazione né intendono violare o incoraggiare la violazione di qualsiasi brevetto. I dati possono essere cambiati senza nessun preavviso e non sono da considerare legalmente rilevanti.

This Datasheet is an information document drawn up in good faith. The information herein is based on tests carried out in our labs and is correct on the basis of our experience, but must be considered only as indicative because of the nature of the product whose behaviour varies with the minimal change in the surrounding conditions (environmental parameters, materials it comes into contact with, storage and ageing methods, etc.) For this reason, the information herein, even if based on our best knowledge, is no guarantee for the user since the customer's application, use and processing of our products and of the final product are beyond our control and are therefore wholly the customer's responsibility. We trust the tests we carried out can be a useful indication, even if we cannot accept any responsibility with regard to the result of your processing. It is the user's responsibility and duty to perform preliminary tests on the specific application, to assess suitability to the required use as it is his/her duty to check that the use of our products complies with the current laws, regulations, provisions and patents. This information must not be considered as an authorization and is no encouragement to infringe any patent. The data can be changed without notice and must not be considered as legally meaningful.



Tenax Aderisce a parametri LEED ed è socio ordinario del Green Building Council d'Italia, che opera nell'ambito della progettazione e costruzione di edifici eco compatibili
Tenax follows LEED's certification parameters and is an ordinary member of the "Italian Green Building Council", that verifies that a building project meets the highest green building and performance measures

OPERATION & MAINTENANCE MANUAL

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Introduction

To ensure the maximum life can be achieved with our products, along with minimising the costs for major refurbishment, this manual is to advise in the ongoing maintenance & cleaning requirements.

Our commitment is to provide delivery in full, on time and to specification. Careful consideration has gone into every aspect of the product – construction, aesthetics, environmental impact and the health and safety of our clients and the public.

Inspection & Cleaning

To maximise life expectancy, all products should be visually inspected on a regular basis for any signs of damage, vandalism, breakdown of surface finish, build-up of salt, dirt or atmospheric residue, and fixings are in place and tightened.

During these inspections, should any concerns be noted, then the Customer's attention is brought to the following pages whereby suitable maintenance and repair methods are described for the various materials used.

In the event of serious damage to any main component then LOGIC should be contacted immediately for detailed advice.

In addition to the visual inspection, a regular cleaning programme is also required. The frequency of visual inspection and cleaning will be dependent on the environment in which the product is situated.

NB. This document is not designed to be exhaustive and extensive in the exacting requirements of every case. If you consider your cleaning or repair circumstances to be outside of the scope of this document, then please contact LOGIC and we will be happy to advise.

All cleaning and maintenance should be recorded, detailing the method of cleaning, what products have been used, and what repair work has been undertaken, if any. LOGIC will require this information if any defects occur.

Galvanised Coating

This coating is very popular and effective for mild steel in the external environment. This process consists of the steel components being completely immersed in molten zinc, which when cooled, forms a hard-wearing protective coating. The finish is initially a bright spangled leaf effect which dulls slightly after time. Typically, galvanised steel has an expected life span of 30 years depending upon the product design and geographic location.

Maintenance:

Visual inspection is required to ensure the zinc coating has not been damaged in any way. If this has happened, then the underlying steel may be exposed and will potentially oxidise. If the coating has been damaged, then this requires sealing straight away with a suitable clear lacquer ensuring the whole surface area is sealed.

For light scratches where the base material is exposed then a suitable cold spray galvanised coating should be carefully applied to the area, followed by a suitable clear lacquer topcoat. For larger and/or more serious damages, replacement parts may be required. Please contact LOGIC and we can advise accordingly.

Cleaning:

This finish can simply be cleaned with using a solution of warm water and non-abrasive, pH neutral detergent solution. For light dirt you can use a soft cloth, sponge or a soft natural bristle brush. For more engrained marks, agitation with a stiff brush may be necessary. Make sure you thoroughly rinse the surfaces after cleaning to remove all residues.

At no time during the cleaning process is it advisable for any abrasive cleaners, solvents, or any other chemicals, to be used.

Powder Coating

This type of coating is applied electrostatically to the surface as a free-floating, dry powder before heat is used to seal the coating. The powder can be made of any number of products: polyester, polyurethane, polyester-epoxy, and acrylics. The final finish is a thick, hard wearing coating that is tougher than conventional paints. Typically, powder coat has an expected life span of 20 years depending upon the product design and geographic location.

Maintenance:

Visual inspection is required to ensure the protective coating has not been 'punctured' in any way. If this has happened, then the underlying steel will be exposed and will potentially oxidise unless there are other protective layers beneath. If the coating has been damaged, then this requires sealing straight away.

For light scratches / chips where the base material is exposed then a suitable primer should be carefully applied to the defect, followed by a topcoat finish of a matching paint or touch up.

For larger damages, the area may require 'filling' to bring it back up to the same level. A suitable epoxy car-body filler can be used and can easily be sanded back. This should then be followed by a topcoat finish of a matching paint or touch up.

Cleaning:

This finish can simply be cleaned with using a solution of warm water and non-abrasive, pH neutral detergent solution. You can use a soft cloth, sponge or a soft natural bristle brush. Make sure you thoroughly rinse the surfaces after cleaning to remove all residues.

At no time during the cleaning process is it advisable for any abrasive cleaners, solvents, or any other chemicals, to be used.

Wet Painting

Wet painting is the application of one or more layers of liquid paint. The first layer is often a rust-proof primer coat, followed by one or more layers of topcoat, depending on the required level of protection. The result is very similar to that of Powder Coating but not as hard wearing. Typically, wet paint has an expected life span of 10 years depending upon the product design and geographic location.

Maintenance:

Visual inspection is required to ensure the protective coating has not been 'punctured' in any way. If this has happened, then the underlying steel will be exposed and will potentially oxidise unless there are other protective layers beneath. If the coating has been damaged, then this requires sealing straight away.

For light scratches / chips where the base material is exposed then a suitable primer should be carefully applied to the defect, followed by a topcoat finish of a matching paint or touch up.

For larger damages, the area may require 'filling' to bring it back up to the same level. A suitable epoxy car-body filler can be used and can easily be sanded back. This should then be followed by a topcoat finish of a matching paint or touch up.

Cleaning:

This finish can simply be cleaned with using a solution of warm water and non-abrasive, pH neutral detergent solution. You can use a soft cloth, sponge or a soft natural bristle brush. Make sure you thoroughly rinse the surfaces after cleaning to remove all residues.

At no time during the cleaning process is it advisable for any abrasive cleaners, solvents, or any other chemicals, to be used.

Weathering Steel

Weathering steel is a family of low carbon steels that have additional alloys in that other steels do not have. When exposed to the atmosphere, this steel begins to oxidise but only on the surface. Once this surface oxidation has formed, it acts as a barrier and protects the steel from further corrosion. Typically, powder coat has an expected life span of 30 years depending upon the product design and geographic location.

Maintenance:

This finish is a very low maintenance product. Visual inspection is required to ensure there is no surface build up / marking.

Cleaning:

This can simply be cleaned with using a solution of warm water and non-abrasive, pH neutral detergent solution. You can use a soft cloth, or a soft natural bristle brush. Make sure you thoroughly rinse the surfaces after cleaning to remove all residues. If the steel becomes extremely dirty due to long periods of neglect, or subject to an aggressive environment, mild abrasion may be required.

Stainless Steel

Stainless steel, as the name indicates, is stain-less meaning it has a high resistance to corrosion. This is due to the various alloys contained within the steel, one of which is Chromium which produces a thin layer of oxide on the surface of the steel. This prevents any further corrosion of the surface.

There are various grades of Stainless which come from the differing alloy content; depending on the environment in which they are going, a suitable grade would be selected.

The steel is available in a variety of finishes; polished, brushed, matt, bead-blasted, and can also be powder coated if required. Typically, stainless steel has an expected life span of 40 years depending upon the stainless grade, product design and geographic location.

Maintenance:

Some grades of stainless steel will stain and discolour in certain conditions due to surface deposits and cannot be considered completely maintenance-free. In order to retain maximum corrosion resistance and aesthetic appeal, the surface of stainless steel must be kept clean. Provided the grade of stainless steel and the surface finish are correctly selected, and cleaning schedules carried out on a regular basis then good performance and long service life is assured.

Cleaning:

Cleaning of this finish can simply be carried out with using a solution of warm water and non-abrasive, detergent solution. Alternatively, a mild solution of white vinegar and water can be used. Use a soft cloth, sponge or a soft natural bristle brush. Make sure you thoroughly rinse the surfaces after cleaning to remove all residues and drying the steel will further enhance its appearance.

If the steel becomes extremely dirty due to long periods of neglect, or subject to an aggressive environment, mild abrasion may be required. Nylon scourers, or Stainless-Steel soap pads, can be used carefully. Ordinary steel scourers should not be used.

On brushed finishes, nylon abrasive blocks may be used to remove minor surface imperfections, ground in dirt and scratches. These blocks are flexible and are impregnated with grit. NB they must always be used in the same direction as the original polishing marks.

Linier

This coating is very similar to that of Galvanised Coating so offers very good corrosion resistance in the external environment. However, there are further processes which make this Linier finish unique to LOGIC. The surface has a thick, hard wearing coating. Typically, Linier has an expected life span of 30 years depending upon the product design and geographic location.

Maintenance:

Visual inspection is required to ensure the protective coating has not been 'punctured' in any way. If this has happened, then the underlying steel may be exposed and will potentially oxidise. For light scratches / chips this requires sealing straight away with a suitable clear lacquer ensuring the whole surface area is sealed.

For larger and/or more serious damages, replacement parts may be required. Please contact LOGIC and we can advise accordingly.

Cleaning:

This finish can simply be cleaned with using a solution of warm water and non-abrasive, pH neutral detergent solution. You can use a soft cloth, sponge or a soft natural bristle brush. Make sure you thoroughly rinse the surfaces after cleaning to remove all residues.

At no time during the cleaning process is it advisable for any abrasive cleaners, solvents, or any other chemicals, to be used.

Pinto

This type of coating is based on the appearance of finished bronze; its life will start bright and will weather to become slightly darker. However, there are further processes which make this Pinto finish unique to LOGIC. The surface has a thick, hard wearing coating. Typically, powder coat has an expected life span of 20 years depending upon the product design and geographic location.

Maintenance:

Visual inspection is required to ensure the protective coating has not been 'punctured' in any way. If this has happened, then the underlying steel will be exposed and will potentially oxidise. If the coating has been damaged, and the underlying finish has not been damaged, then this requires sealing straight away with a suitable clear lacquer ensuring the whole surface area is sealed.

For larger and/or more serious damages, replacement parts may be required. Please contact LOGIC and we can advise accordingly.

Cleaning:

This finish can simply be cleaned with using a solution of warm water and non-abrasive, pH neutral detergent solution. You can use a soft cloth, sponge or a soft natural bristle brush. Make sure you thoroughly rinse the surfaces after cleaning to remove all residues.

At no time during the cleaning process is it advisable for any abrasive cleaners, solvents, or any other chemicals, to be used.

Timber

Hardwoods and Softwoods can both be successfully used in the external environment. Most Hardwoods are more durable than Softwoods but not all. What is more important is which class the timber is in, of which there are 5 levels of durability.

Due to the durability and natural resistance to decay of timbers within Classes 1, 2 & 3, they are the preferred choice. Class 4 & 5 timbers are not recommended for external use.

As timber is a natural product, there are variations within grain structure, density, colour, moisture content, etc, which will affect the performance of the timber during its lifetime.

Many species of timber contain natural occurring tannins (mentioned in more detail below) which can migrate to the surface leaving brown staining. They are drawn out of the timber by moisture which carries the staining substances from within. When the moisture evaporates it can leave patches of discolouration on the surface. Tannin stain usually occurs on new timber.

Opepe – Class 1

Sometimes known as Bilinga or Aloma, this timber is native to Western Africa. Due to its classification, this is a widely used timber in the outside and marine environment. It has an excellent strength / weight ratio and resistance to rot and decay, even in its untreated state.

The texture is coarse and the grain frequently interlocked, producing a very stable timber.

Small surface cracks may appear as the timber goes through the drying out process, however this does not affect the strength of the timber.

Like many other timbers, Opepe will turn silvery-grey when left in its natural state. This can be delayed / stopped by application of surface treatments. During the interim period, the surface of the timber may show signs of discolouration and/or surface mold which is part of the natural weathering process. This is something that will have been covered in the design stage of the product and is mentioned in the Maintenance section below. Typically, Opepe has an expected life span of 30 years depending upon the product design and geographic location.

Maintenance:

A visual check should be completed at least annually, whereby any splinters or sharp edges of timber should be lightly sanded to remove them. Also, check for any unwanted surface build up and/or surface mold.

If the timber has had any surface treatment applied, then this should be inspected and re-applied, as necessary. The frequency of this treatment will depend on the location of the timber. Areas subject to severe environmental impact will require more frequent maintenance.

Cleaning:

Surface dust and debris can be removed with a soft brush, whereas more engrained dirt, guano, or surface mold will require greater agitation with a stiff brush. Care should be taken not to damage the surface of the timber.

Oak – Class 2

This timber is native to the Northern Hemisphere, with over 600 species worldwide. Oak is a widely used timber in the outside environment due to its excellent resistance to rot and decay, even in its untreated state. It can be used as 'Green' meaning it has been cut within the last 18 months and will typically have a high moisture content of between 50 – 80%, or 'Seasoned' which is either air-dried or kiln-dried. Typically, the moisture content in this would be 20 – 30%.

The higher the content of moisture in the timber will result in movement and/or shrinkage as the timber naturally dries out. In Green Oak this can be as much as 10% in certain dimensions. This is a natural process of which will vary in extent depending on the environment and the individual characteristics of the timber.

Left in its natural state, Oak will turn silvery grey in time. This can be delayed / stopped by application of surface treatments. During the interim period, the surface of the timber may show signs of discolouration and/or surface mold which is part of the natural weathering process. This is something that will have been covered in the design stage of the product and is mentioned in the Maintenance section below.

Oak does contain naturally occurring Quertannic Acid (often referred to as Tannin for short) which is one of the factors than contributes to Oaks durability. However, it is worth noting how this acid reacts with moisture and steel.

Oak – Class 2 (Continued)

With dried timber (low moisture content) the acid rarely reacts, whereas fresh sawn timber (high moisture content) it often reacts. The acid is soluble and leaches out of the timber in water and where the water evaporates it leaves the tannin sediment behind as a stain. This can be wiped away from a smooth surface but on a porous surface, the pores absorb the rusty coloured dust, of which takes time to wash away. Repeated rinsing of such will help speed up this. Stains on the timber itself will not be removed by any washing or rinsing as the water dissolves the tannin and then evaporates again leaving you a new pattern.

The answer to tannin leaching is time. The seasoning of the timber over time means that the timber dries and hardens and becomes less penetrable by water and less likely to release new tannins. Typically, Oak has an expected life span of 20 years depending upon the product design and geographic location.

Maintenance:

A visual check should be completed at least annually, whereby any splinters or sharp edges of timber should be lightly sanded to remove them. Also, check for any unwanted surface build up and/or surface mold.

If the timber has had any surface treatment applied, then this should be inspected and re-applied as necessary. The frequency of this treatment will depend on the location of the timber. Areas subject to severe environmental impact will require more frequent maintenance.

Cleaning:

Surface dust and debris can be removed with a soft brush, whereas more engrained dirt, guano, or surface mold will require greater agitation with a stiff brush. Care should be taken not to damage the surface of the timber.

Iroko – Class 2

This timber is native to Western Africa and due to its characteristics is often used as a Teak substitute. Iroko is very durable and due to its excellent resistance to rot and decay, even in its untreated state, makes it a very suitable timber to be used in the outside environment.

In addition to this, Iroko has an interlocking, generally straight, grain structure which results in the timber being very stable. Small surface cracks may appear as the timber goes through the drying out process, however this does not affect the strength of the timber.

Like many other timbers, Iroko will turn silvery-grey when left in its natural state. This can be delayed / stopped by application of surface treatments. During the interim period, the surface of the timber may show signs of discolouration and/or surface mold which is part of the natural weathering process. This is something that will have been covered in the design stage of the product and is mentioned in the Maintenance section below. Typically, Iroko has an expected life span of 20 years depending upon the product design and geographic location.

Maintenance:

A visual check should be completed at least annually, whereby any splinters or sharp edges of timber should be lightly sanded to remove them. Also, check for any unwanted surface build up and/or surface mold.

If the timber has had any surface treatment applied, then this should be inspected and re-applied, as necessary. The frequency of this treatment will depend on location of the timber. Areas subject to severe environmental impact will require more frequent maintenance.

Cleaning:

Surface dust and debris can be removed with a soft brush, whereas more engrained dirt, guano, or surface mold will require greater agitation with a stiff brush. Care should be taken not to damage the surface of the timber.

Douglas Fir – Class 3

Sometimes known as Oregon pine or Columbian pine and is a native species of North America. This timber can be successfully used in the outside environment and has a high strength / weight ratio and is subject to low shrinkage and good stability. Douglas Fir also scores particularly high regarding suitability / green credentials thanks to the speed & location of growth (UK).

Left in its natural state, Douglas Fir will turn silvery grey in time. This can be delayed / stopped by application of surface treatments. During the interim period, the surface of the timber may show signs of discolouration and/or surface mildew which is part of the natural weathering process. This is something that will have been covered in the design stage of the product and is mentioned in the Maintenance section below. Typically, Douglas Fir has an expected life span of 15 years depending upon the product design and geographic location.

Maintenance:

A visual check should be completed at least annually, whereby any splinters or sharp edges of the timber should be lightly sanded to remove them. Also, check for any unwanted surface build up and/or surface mold.

If the timber has had any surface treatment applied, then this should be inspected and re-applied as necessary. The frequency of this treatment will depend on location of the timber. Areas subject to severe environmental impact will require more frequent maintenance.

Cleaning:

Surface dust and debris can be removed with a soft brush, whereas more engrained dirt, guano, or surface mold will require greater agitation with a stiff brush. Care should be taken not to damage the surface of the timber.

Timber Disclaimer

Being an entirely natural product no two pieces of timber are the same. It has a number of inherent growth characteristics such as grain patterns, varying colours, density, knots and other defects or imperfections. The words 'defect' and 'imperfection' may sound alarming, but in the context of a natural and variable material such as timber it can mean anything growing naturally in the tree, for example knots; or it can mean things introduced as part of the production and handling process (sawmilling, drying, machining etc.) such as wane or splits. The industry does not consider these to be defects or imperfections, but rather features which only further enhance the natural beauty and individuality of a timber product.

Variations in temperature and humidity will affect timber and can result in surface cracks or splits, warping, and twisting in some instances. Generally, these defects or imperfections will not adversely affect the final appearance or performance of the finished product especially if the installer is aware of their existence and how they can be overcome if they need to be. LOGIC do all they can to minimise this through good design and workmanship, however these are natural occurrences so cannot be eliminated totally.

Further information about timber, and its properties, can be found by visiting:
www.trada.co.uk

Transport to site and storage prior to installation

Goods are packaged suitably for transport from LOGIC to site, usually palletised depending on product size and weight. Ideally, all products should be stored under cover, and protected from potential damage, until installation is ready to commence. Timber products that are wrapped should have this packaging removed within 24 hours of delivery to prevent potential sweating and marking of the products.

Warranty statement

Logic Manufactured Bespoke offer a limited lifetime material warranty on all seating and raised planters. This warranty period is dictated by the expected lifespan of the design, material and location concerned.

To maintain the validity of this material warranty a record of monthly checks & maintenance upkeep in-line with our O&M recommendations, must be available for inspection. Any areas of concern must be reported within five working days.

This material warranty should not be confused with vandalism or misuse. These factors are taken into consideration when designing our seating and planter products, a key reason why we utilize the modular concept on all our standard components.

Manufacturing in this way means that if such elements are vandalized and damaged beyond repair, an onsite maintenance team will be able remove and replace with ease, saving the cost of a completely new unit.