The Ridge, Haverhill

BREEAM Pre-Assessment

Trebor Developments

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Project title	The Ridge, Haverhill	**Job Number**
Report title	BREEAM Pre-Assessment	1021524

Document Revision History

Revision Ref	Issue Date	Purpose of issue / description of revision
—	01 May 2019	Issue for Planning
A	02 December 2019	Contract Issue
B	07 January 2020	Revised Planning Issue (Units 1 & 2)

Document Validation (latest issue)

06/01/2020 07/01/2020 07/01/2020

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Signed by: Brownstein, David Signed by: Chatwin, Paul Signed by: Chatwin, Paul

Executive Summary

Cundall has been appointed to carry out a BREEAM Pre-Assessment for the proposed development of The Ridge, Haverhill. The objectives of this report are to:

- Advise on the number of credits which are achievable under the applied BREEAM scheme for the development as proposed.
- Advise on any additional measures required to achieve the required BREEAM Target Rating.

The development has been assessed against the BREEAM 2014 New Construction criteria for a Shell & Core, Industrial building.

The review shows that the development should achieve a score of **56.8%,** which translates to a **Very Good** rating. This however does not provide a significant margin for risk above the required 55% target score. Achieving the credits listed as possible could bring the score up to **60.1%,** which provides some additional comfort that the target rating can be achieved.

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1.0 Introduction

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1.1 BREEAM

BREEAM is an environmental assessment method that can be applied to new of existing buildings. It covers a range of building types including offices, schools, retail, industrial, healthcare and further/higher education establishments. Other building types and combinations of building types can be assessed using a bespoke version of BREEAM. It provides a common basis against which the wider aspects of construction can be compared e.g. carbon emissions, impacts on wildlife, embodied energy, internal environment etc.

BREEAM can help to demonstrate:

- The sustainability of development to planning authorities, which can assist through the planning process
- Sustainability credentials to investors to minimise investment risk
- A tool enabling design teams to improve the performance of their building
- Future-proofing of the building against changes in environmental regulation
- A prompt to the design team to consider environmental aspects that are beyond minimum regulatory reqiorements. Many of the features are low cost if considered from the easrly design stages.

BREEAM consists of a series of credits which are arranged in the following headings:

- **Management:** Encouraging the adoption of sustainable management practices
- **Health & Wellbeing:** Internal and external issues affecting health & wellbeing
- **Energy Use:** Minimising energy use and carbon emissions
- **Transport:** Reducing carbon emissions associated with transport to and from the development
- **Water:** Encouraging more sustainable use of water
- **Materials:** Environmental and social implication of building materials
- **Waste:** Minimising construction and operational waste
- **Land Use & Ecology:** Reducing the impact of the development on local ecology and encouraging measures to benefit biodiversity
- **Pollution:** Minimising pollution of air and water

Credits are awarded based on tangible, robust, auditable evidence which demonstrates compliance with the BREEAM criteria. Each credit earns a percentage point, and the sum of the weighted score forms the final rating as follows:

- Pass: >25%
- Good: >40%
- Very Good: >55%
- Excellent: >70%
- Outstanding: >85%

2.0 Summary

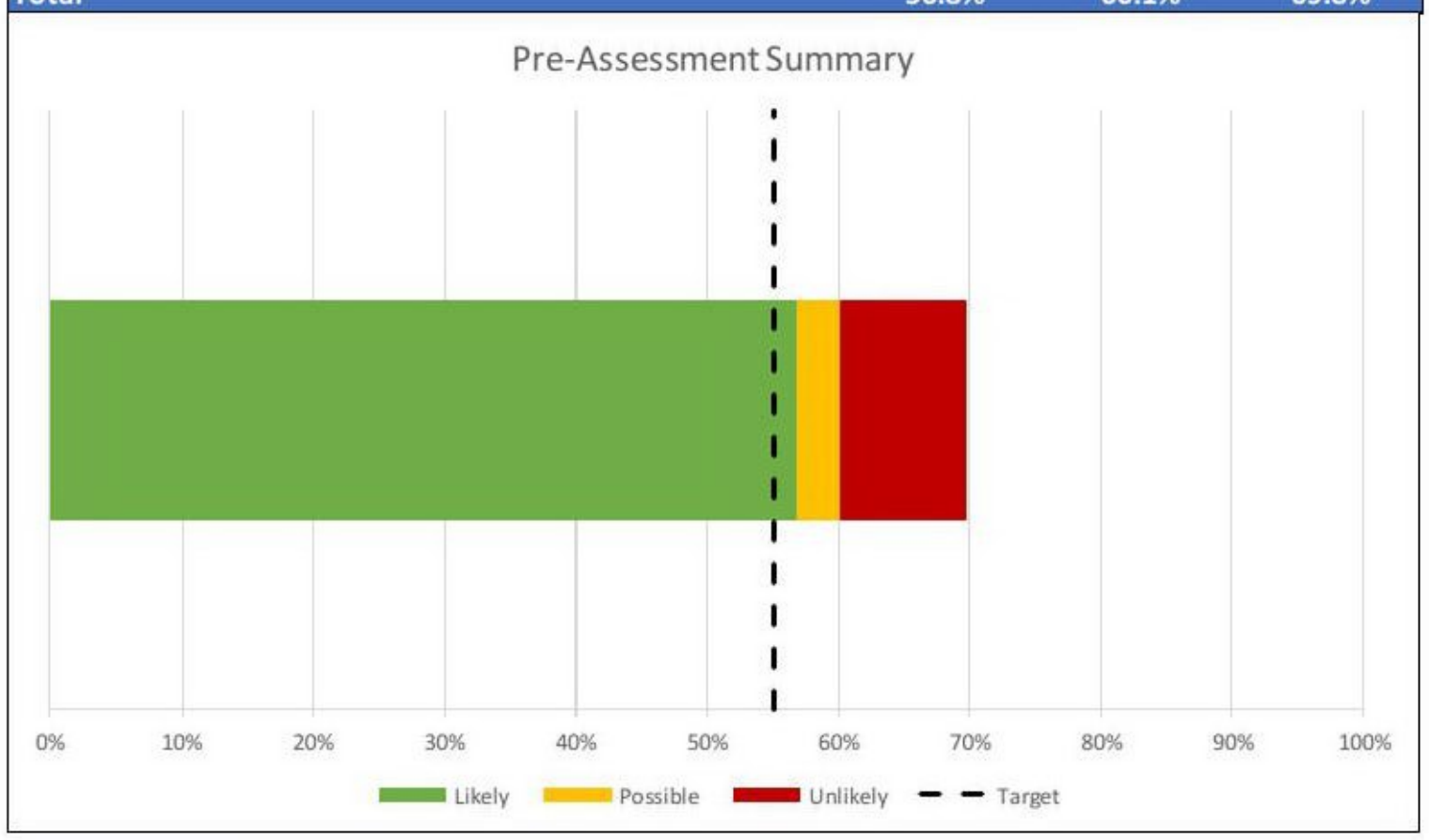
The development has been assessed against the BREEAM 2014 New Construction Criteria for a Shell & Core, Industrial building. The pre-assessment has been carried out on the development as proposed using a traffic light system:

- Green represents credits which are likely to be attainable with some uplift to the design and specification
- Yellow represents credits which could possibly be achieved with some additional input or pending further review
- Red represents credits are unlikely as they would require significant additional work/risk to undertake and are therefore not proposed for inclusion in the development

The review shows that the development should achieve a score of **56.8%,** which translates to a **Very Good** rating. This however does not provide a significant margin for risk above the required 55% target score. Achieving the credits listed as possible could bring the score up to **60.1%,** which provides some additional comfort that the target rating can be achieved.

Project Name	Haverhill	**Project Number**	2021524
Created By	DB	**Date**	02/12/2019
Revision	E	**Reason for Issue**	Revised Planning
Scheme	2014		
Target Rating	Very Good	**Minimum Score**	55%

Category	Weighting	Credits Available	Likely	Possible	Unlikely
Management	11.00%	18	12	0	3
Health & Wellbeing	10.50%	10	2	2	4
Energy	15.00%	18	8	0	3
Transport	10.00%	9	3	0	0
Water	7.50%	9	7	0	0
Materials	14.50%	10	7	0	0
Waste	9.50%	8	4	1	1
Land Use & Ecology	11.00%	10	6	0	0
Pollution	11.00%	11	10	0	0
Innovation	10.00%	13	0	0	0
Total			**56.8%**	**3.3%**	**9.7%**
Total			**56.8%**	**60.1%**	**69.8%**



Credits which should meet the BREEAM Criteria
Credits which may be achievable with most effective additional appointments
Credits which require further additional inputs/appointments

3.0 Credit Tracker

Column1	Credit	Description	Credits Available	Likely	Possible	Unlikely	Owner	Notes
Management			18	12	0	3		
Man 01	**Project brief and design**							
	Stakeholder consultation (project delivery)	Setting out roles and responsibilities for project delivery	1	1			Project Manager	Evidence of early stage design team involvement required to achieve this credit.
	Stakeholder consultation (third party)	Consulation with appropriate stakeholders e.g. existing building occupants	1					Consultation carried out does not meet the specific requirements of BREEAM.
	Sustainability champion (design)	Appointment of a sustainability champion to facilitate setting and acheivement of BREEAM targets up to concept design stage	1	1			Cundall	Cundall appointed for this role. Credit to be awarded upon completion of DS assessment.
	Sustainability champion (monitoring progress)	Appointment of a sustainability champion to facilitate setting and acheivement of BREEAM targets throughout the desing process.	1	1			Contractor	Contractor to appoint BREEAM AP for developed design.
Man 02	**Lifecycle cost and service life planning**							
	Elemental lifecycle cost	Conducting an elemental lifecycle costing study in accordance with PD 156865:2008.	2			2	Additional Appointment	Requires elemental life-cycle cost analysis to be carried out. Not proposed for this development.
	Componnent level LCC plan	A component LCC plan for components within scope of works	1			1	Additional Appointment	Requires component life-cycle cost analysis to be carried out. Not proposed for this development.
	Capital cost reporting	Reporting of capital cost)	1	1			Contractor	Capital costs to be provided.
Man 03	**Responsible construction practices**							
	Environmental management	Use of contractors that have an environmental management policy and that implement best practice Pollution Prevention	1	1			Contractor	Contractor to operate third party EMS and implement best practice pollution prevention guidelines.
	Sustainability champion (construction)	Appointing a sustianability champion to facilitate achievement of BREEAM performance targets through construction and handover stages	1	1			Contractor	Contractor to appoint BREEAM AP for construction stage.
	Considerate construction	Achievement of compliance or beyond compliance with a compliant considerate construction scheme	2	2			Contractor	Contractor to achieve minimum CCS score of 40.
	Monitoring of construction site impacts	Monitoring of energy, water and transport impacts during construction	2	1			Contractor	Contractor to monitor energy, water and where possible transport impacts.
Man 04	**Commissioning and handover**							
	Commissioning and testing schedule and responsibilities	Having a commissioning and testing schedule and responsibilities agreed	1	1			M&E Engineer	Requirements written into M&E specification
	Commissioning building services	Commissioning building services in line with best practice	1	1			M&E Engineer	Requirements written into M&E specification
	Testing and inspecting building fabric	Quality assuring fabric (air tightness, continuity of insulation, thermal bridging) through visual inspection and testing (air leakage and thermographic surveys) to best practice standards	1					Not proposed for this development due to cost and risk of non-compliance.
	Handover	Provision of a building users guide and implementation of a training schedule for occupants at handover	1	1			Contractor	Contractor to produce building user guide and training schedule.
Health & Wellbeing	**Health & Wellbeing**		10	2	2	4		
Hea 01	**Visual comfort**							

	Daylighting	Design of the space to optimise areas that benefit from good daylighting and improving daylighting levels through refurbishment measures.	1			2	Additional Appointment	Requires daylight analysis to be carried out. Not proposed for this development.
	View out	Design of the space to optimise desks with a view out in accordance with view out criteria	1	1			AJA	View out criteria should be achievable given shallow depth of office.
	Internal and external lighting	Best practice internal and external lighting levels and zoning	1	1			M&E Engineer	Requirements incorporated into the design and written into specification.
Hea 02	**Indoor air quality**							
	Ventilation	Meeting best practice ventilation levels	1					Not achievable due to proximity of openable windows to car parks.
	Potential for natural ventilation	Provision of fresh air through a natural ventilation strategy	1					Not achievable due to office plan depths
Hea 04	**Thermal comfort**							
	Thermal modelling	Conducting thermal modelling in accordance with CIBSE guidance (or assessment of the existing system performance by an engineer to inform future works in the case of Part 4 assessments)	1		1		Additional Appointment	Requires advanced thermal analysis to be carried out. Recommended to increase 'buffer'.
	Adaptation - for a projected climate change scenario	Where modelling demonstrates that systems are appropriate for a future climate change environment (or where not feasible identifying future adaptations in the case of a Part 3 or 4 assessment)	1		1		Additional Appointment	Requires advanced thermal analysis to be carried out. Recommended to increase 'buffer'.
Hea 05	**Acoustic performance**							
	Acoustic performance	Assessing scope of works against best practice criteria to determine impact on sound insulation, ambient noise levels and reverberation times.	1			1		Requires acoustic testing and additional risk of non-compliance. Not proposed for this development.
Hea 06	**Safety and security**							
	Safe Access	Provision of effective measures which support safe access to and from the building.	1					
	Security of site and building	Where a suitable qualified security specialist has assesed the security needs of the site and appropriate measures to address issues identified in the security needs assessment have been implemented.	1			1	Additional Appointment	Requires security needs assessment to be carried out . Not proposed for this development.
Energy			**18**	**8**	**0**	**3**		
Ene 01	**Reduction of energy use and carbon emissions**							
	Reduction of energy use and carbon emissions	Measuring improvement in existing energy performance through using the BREEAM Ene01 assessment tools at the whole building or elemental approach as appropriate to scope of works.	12	5			M&E Engineer	5 Credits achieved after proposed reduction in rooflight U-Values
Ene 02	**Energy monitoring**							
	Sub-metering of major energy consuming systems	Where 90% of energy load is appropriately metered through energy metering systems	1	1			M&E Engineer	Requirements incorporated into the design and written into specification.
	Sub-metering of high energy load and tenancy areas	Metering of tenanted or department/function areas	1	1			M&E Engineer	Requirements incorporated into the design and written into specification.
Ene 03	**External lighting**							
	External lighting	Energy efficient external lighting	1	1			M&E Engineer	Requirements incorporated into the design and written into specification.
Ene 04	**Low carbon design**							
	Passive design analysis	Passive design analysis and implementation of passive design measures	1			1	Additional Appointment	Requires passive design analysis to be carried out. Not proposed for this development.

	Free cooling	Implementation of free cooling measures	1			1	Additional Appointment	Potential to achieve this if Ene 04 achieved. Not proposed for this development
	Low and zero carbon technologies	Low and zero carbon techology feasibility study	1			1	Additional Appointment	Requires low & zero carbon technologies feasbility study and specification of technologies. Not proposed for this development.
Ene 06	**Energy efficient transportation systems**							
	Energy consumption	Size and number of newly specified transportation systems is optimised	N/A					
	Energy efficient measures	Specification of energy efficient measures for existing and newly specified transportation systems	N/A					
Transport			9	3	0	0		
Tra 01	**Sustainable transport options**							
	Accessibility index	Assessing the sites access to public transport facilities.	3					Limited bus frequency means no credits achievable
	Alternative transport measures	Developing alternative transport measures where the site has poor pubic transport access.	N/A					
Tra 02	**Proximity to amenities**							
	Proximity to amenities	Assessing the sites access to basic amenites	1					Limited amenities within 500m so no credits achievable
Tra 03	**Cyclist facilities**							
	Cycle storage	Provision of cycle storage spaces	1	1			AJA	Sufficient cycle storage spaces to be provided and to be BREEAM compliant (covered overhead, secure, well lit, appropriately spaced). Requires 103 spaces total (28 max per unit).
	Cylist facilities	Provision of cyclist facilities e.g. showers, lockers, drying facilities, changing facilities	1					
Tra 04	**Maximum car parking capacity**							
	Car parking capacity	Optimising car parking spaces to promote alternative sustainable transport options	2	1				Local authority requirements are 1 space / 30m2 which is above the minimum BREEAM requirements. As per KBCN0401 a single credit can be awarded by default.
Tra 05	**Travel plan**							
	Travel plan	Development of a site specific travel plan with a package of measures to promote sustainable travel	1	1			Client	Travel plan provided for planning.
Water			9	7	0	0		
Wat 01	**Water consumption**							
	Water consumption	Specification of water efficient equipment	5	3			AJA	Low-flow fixtures & fittings to be specified. Could achieve additional credit with lower flow fittings, however this should be confirmed with a specific specification.
Wat 02	**Water monitoring**							
	Water monitoring	Provision of water metering equipment	1	1			M&E Engineer	Requirements incorporated into the design and written into specification.
Wat 03	**Leak detection**							
	Leak detection system	Specification of leak detection system on the incoming mains	1	1			M&E Engineer	Requirements incorporated into the design and written into specification.
	Flow control devices	Providing flow control devices that regulate water supply to WC areas	1	1			M&E Engineer	Requirements incorporated into the design and written into specification.
Wat 04	**Water efficient equipment**							
	Water efficient equipment	Specifying measures to reduce unregulated water use (e.g. irrigation etc.)	1	1			AJA	Low-water planting to be incorporated in landscape proposal.
Materials			10	7	0	0		
Mat 01	**Lifecycle impacts**							

		Using robust Lifecycle assessment tools, specification of materials with robust environmental claims and re-using existing elements in situ.	2	2			AJA	Primary elements to be specified in accordance with Green Guide to Specification.
Mat 02	**Hard Landscaping and Boundary Protection**							
		Reductions in the environmental life cycle impacts through assessment of the hard landscaping and boundary protection elements.	1					Not achievable as it generally requires recycled sub-base which can present difficulties in procuring
Mat 03	**Responsible sourcing of materials**							
	Sustainable procurement plan	Where the contractor has a sustainable procurement plan	1	1			Contracor	Contractor to produce sustainable procurement plan.
	Responsible sourcing of materials	Recognising where a basic minimum number of material types have been responsibly sourced up to where products that have been responsibly sourced have been assessed and quantified.	3	1			AJA / Contractor	Materials to be specified to responsible sourcing standards ie ISO14001, BES6001
Mat 04	**Insulation**							
	Insulation	Use of insulation that has a low embodied impact	1	1			AJA	To be written into specification.
Mat 05	**Designing for durability and resilience**							
		The use of suitable durability measures to protect vulnerable parts of the building and external parts of the building	1	1			AJA	Marked up drawings to be provided alongside narrative.
Mat 06	**Material efficiency**							
	Material efficiency	Where opportunities have been taken to optimise material use throughout refurbishment and fit-out (e.g. designing out waste).	1	1			AJA	Requires opportunities for material efficiency to be identified and evidenced.
Waste			8	4	1	1		
Was 01	**Construction waste management**							
	Construction resource efficiency	Acheivement of resource efficiency targets	3	2			Contrator	Requirements written into contract preliminaries.
	Diversion of resources from landfill	Achievement of diversion from landfill targets	1	1			Contrator	Requirements written into contract preliminaries.
Was 02	**Recycled aggregates**							
	Recycled aggregates	Recycling of high grade aggregate, use of secondary aggregate and aggregates in situ	1					Not achievable as recycled aggregates can present difficulties in procuring
Was 03	**Operational waste**							
	Operational waste	Provision of facilities for the storage of operational waste	1	1			AJA	Appropriate space to be provided for operational waste storage.
Was 05	**Adaptation to climate change**							
	Adaptation to climate change - structural and fabric resilience	Where a Climate change resilience study has been conducted to provide structural and fabric resilience to climate change	1			1	Additional Appointment	Requires adaptation to climate change report to be carried out. Would require additional appointment. Not proposed for this development.
Was 06	**Functional adaptability**							
	Functional adaptabiliy	Implementation of adaptability measures to accommodate future changes	1		1		Additional Appointment	Requires functional adaptability study to be carried out. Would require additional appointment. Recommended to increase 'buffer'.
Land Use & Ecology			10	6	0	0		
LE 01	**Site selection**							
	Previously occupied land	Recognition of the reuse of previously developed land	1					Not achievable as land is not previously developed.

	Contaminated land	Recognition of the reuse of contaminated land where appropriate remediation has taken place	1					Not achievable as no significant contamination
Le 02	**Protection of ecological features**							
	Protecting ecological value	Recognition of the use of sites of 'low ecological value', and the protection of existing features prior to and during site operations.	2	1			Ecologist	Suitably Qualified Ecologist appointed to confirm ecological value of land.
LE 03	**Minimising impact on existing site ecology**							
	Change in ecological value	Recognition of steps taken to avoid impacts on existing site ecology.	2	2			Ecologist	Suitably Qualified Ecologist appointed to carry out calculation of change in ecological value based on proposed soft landscaping.
Le 04	**Ecological enhancement**							
	Ecological enhancement	Where a suitably qualified ecologist has been consulted and their recommendations have been implemented for the enhancement of the sites ecological value	2	1			Ecologist	Suitably Qualified Ecologist appointed to carry out report with recommendations for enhancing site's ecology which should be incorporated.
Le 05	**Long term impact on biodiversity**							
	Long term imapct on biodiversity	Implementation of a landscape and management plan to cover the first 5 years of occupation and the implementation of biodiversity measures.	2	2			Ecologist / Contractor	Ecologist appointed to prepare landscape and habitat management plan for the site and confirm compliance with legislation. Contractor to carry out additional measures.
Pollution			**11**	**10**	**0**	**0**		
Pol 01	**Impact of refrigerants**							
	Impact of refrigerants	Where the systems using refrigerants have Direct Effect Life Cycle equivalent emissions (DELC CO_2e) that meet benchmark levels or of a GWP less than 10	2	2			M&E Engineer	No refrigeration is proposed therefore full credits achievable.
	Leak detection	Specification of leak detection and recovery systems	1	1			M&E Engineer	No refrigeration is proposed therefore full credits achievable.
Pol 02	**NOx Emissions**							
	NOx emissions	Achievement of Nox emission benchmarks for heating and hot water	1	1			M&E Engineer	Requirements incorporated into the design and written into specification.
Pol 03	**Flood risk and reducing surface water run-off**							
	Flood risk management	Where the refurbishment of fit-out zone has a low risk of flooding or implements flood resilience or resistance measures.	2	2			Civil Engineer	FRA confirms development is in Flood Zone 1.
	Surface water run-off	Where the project makes a neutral impact on surface water or reduces site runoff	2	2			Civil Engineer	Appropriate SUDs to be incorporated. 2 credits achievable given current drainage design.
	Minimising watercourse pollution	Implementation of measures to reduce watercourse pollution	1					Would require porous paving which is not proposed for this development.
Pol 04	**Reduction of night time light pollution**							
	Reducing night time light pollution	Where external lighting has been designed out or external lighting meets best practice	1	1			M&E Engineer	Requirements incorporated into the design and written into specification.
Pol 05	**Noise attenuation**							
	Noise attenuation	Where noise from existing or new installations is reduced.	1	1			Contractor / Acoustician	Noise impact assessment carried out as part of outline planning and requires further acoustic testing to be carried out post-completion. Contractor to appoint acoustician to carry out testing.
Innovation			**13**	**0**	**0**	**0**		
Man 03	**Responsible Construction Practices**							
			1					
Man 05	**Aftercare**							
			N/A	**0**				

Hea 01	Visual comfort							
			1	0				
Hea 02	Indoor air quality							
			2	0				
Ene 01	Reduction of energy use and carbon emissions							
			5	0				
Wat 01	Water consumption							
			1	0				
Mat 01	Environmental impact of materials							
			1	0				
Mat 03	Responsible sourcing of materials							
			1	0				
Wst 01	Construction waste management							
			1	0				
Wst 02	Recycled Aggregates							
			N/A					
Wst 05	Adaptation to climate change							
			N/A	0				
Pol 03	Flood risk management							
			N/A	0				

Cundall Johnston & Partners LLP
4th Floor 15 Colmore Row Birmingham B3 2BH
United Kingdom Tel:+44 (0)121 262 2720
Asia Australia Europe MENA UK and Ireland
www.cundall.com

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