King’s House School

BREEAM Summary

King’s House School

Job No:	1018236
Doc Ref:	1018236-RPT-SU-002
Revision:	C
Revision Date:	11 January 2021

Project title	King's House School	**Job Number**
Report title	BREEAM Summary	1018236

Document Revision History

Revision Ref	Issue Date	Purpose of issue / description of revision
-	30 October 2019	BREEAM summary
A	05 December 2019	BREEAM summary REV A
B	17 December 2019	BREEAM summary REV B
C	11 January 2021	BREEAM summary REV C

Document Validation (latest issue)

12/01/2021

X

Principal author

Signed by: Doroftei, Ancuta

Recoverable Signature

X Katie Roberts

Checked by

Signed by: k.roberts@cundall.com

12/01/2021

X

Verified by

Signed by: Kumari, Kavita

Executive Summary

The new extension for King's House School on King's Road, Richmond, is targeting a BREEAM 'Excellent' rating to meet the planning requirement of the London Borough of Richmond upon Thames.

The planning application proposal compromises three main aspects:

Demolition of a few existing school buildings, which have been added since the original Victorian and Edwardian houses.

The erection of a two and three storey new build teaching block, which links to and extends the existing sports hall. This new teaching facility consists of music and drama classrooms, music practice rooms and six general teaching classrooms. There are associated areas for staff, storage and services, which support the running of the building.

Internal refurbishment work to the existing main school buildings to improve circulation and logistical issues, such as enlarging the existing dining hall and library. This involves some external modifications to the rear of the buildings (east elevation).

At present, the results of the assessments indicate that the current design is likely to achieve a 'Excellent' rating, with a score of 75.38%.

Contents

1.0 BREEAM Strategy overview 3

1.1 Sustainability Strategy 3

1.2 BREEAM boundary 3

1.3 Minimum standards to achieve 'Excellent' rating 4

1.4 Early Stage actions 5

1.5 Next steps 5

Appendix A – BREEAM NC 2018 Timeline recommended by BREEAM6

Appendix B – BREEAM NC 2018 Assessment tool 8

1.0 BREEAM Strategy overview

The new extension proposed for King's House School is targeting a BREEAM 'Excellent' rating under the BREEAM New Construction 2018 for Education- Primary School tool.

Cundall have developed the BREEAM roadmap to achieve BREEAM Excellent rating for the new extension at King's House School. The results of the assessments indicate that the current design can achieve a 'Excellent' rating, with a score of 75.38%.

In order to achieve the rating to 'Excellent', early engagement with appropriately qualified professionals have taken place, including commissioning a number of studies to support design in accordance with BREEAM requirements.

1.1 Sustainability Strategy

The proposal for King's House School has been designed to meet the sustainability criteria. Where possible, green roofs will be provided to increase the biodiversity of the site. Some of the school's energy will be provided by solar panels on the roof of the sport hall and most classrooms will be naturally ventilated with opening windows.

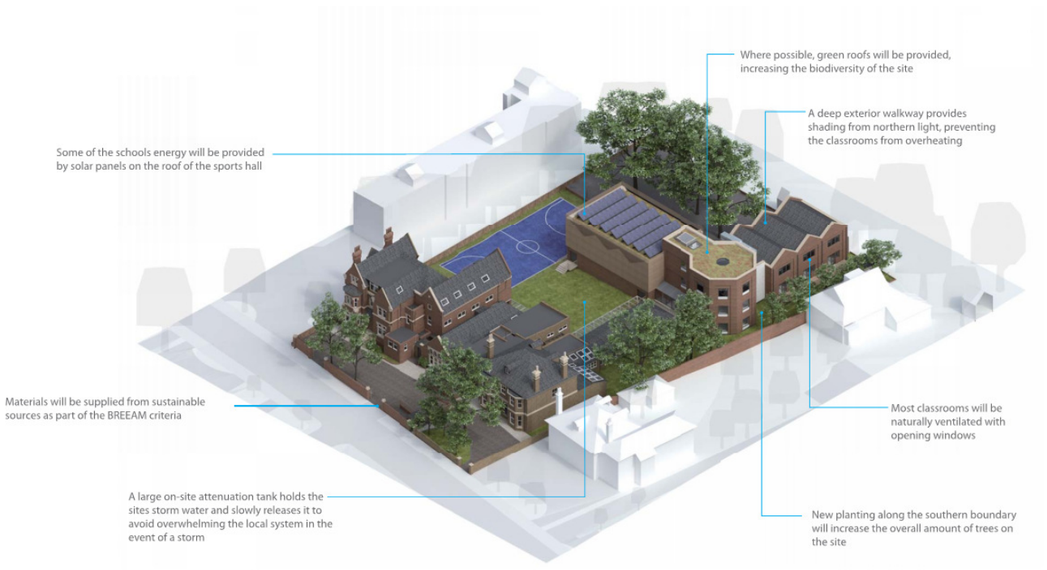

Fig.1 – Sustainability Strategy

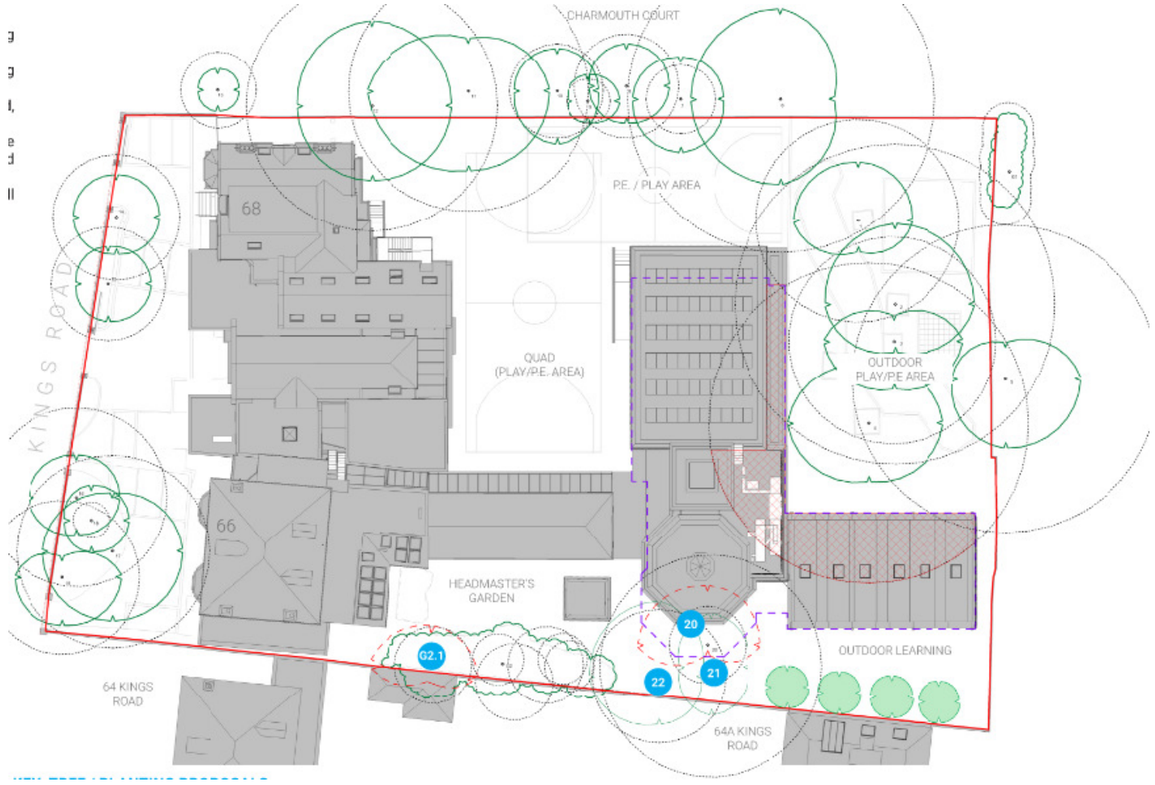

Fig.2 - Site boundary

1.2 BREEAM boundary

The BREEAM assessment will include the new built elements of the proposals, which includes the erection of a two and three storey new build teaching block, which links to and extends the existing sports hall. This new teaching facility consists of music and drama classrooms, music practice rooms and six general teaching classrooms. There are associated areas for staff, storage and services, which support the running of the building.

1.3 Minimum standards to achieve 'Excellent' rating

To ensure that the performance against fundamental environmental issues is not overlooked in pursuit of a particular rating, BREEAM sets minimum standards of performance in key areas.

The minimum acceptable levels of performance for 'Excellent' rating are summarised in Table 2.5 below.

Table 2.5 Minimum BREEAM standards by rating level

	Minimum standards by BREEAM rating level				
BREEAM issue	Pass	Good	Very Good	Excellent	Outstanding
Man 03 Responsible construction practices	None	None	None	One credit (responsible construction management)	Two credits (responsible construction management)
Man 04 Commissioning and handover	None	None	One credit (commissioning-test schedule and responsibilities)	One credit (commissioning-test schedule and responsibilities)	One credit (commissioning-test schedule and responsibilities)
Man 04 Commissioning and handover	None	None	Criterion 11 (Building User Guide)	Criterion 11 (Building User Guide)	Criterion 11 (Building User Guide)
Man 05 Aftercare	None	None	None	One credit (commissioning-implementation)	One credit (commissioning-implementation)
Ene 01 Reduction of energy use and carbon emissions	None	None	None	Four credits (Energy performance or Prediction of operational energy	Six credits (Energy performance) and Four credits (Prediction of operational energy
Ene 02 Energy monitoring	None	None	One credit (First sub-metering credit)	One credit (First sub-metering credit)	One credit (First sub-metering credit)
Wat 01 Water consumption	None	One credit	One credit	One credit	Two credits
Wat 02 Water monitoring	None	Criterion 1 only	Criterion 1 only	Criterion 1 only	Criterion 1 only
Mat 03 Responsible sourcing of construction products	Criterion 1 only	Criterion 1 only	Criterion 1 only	Criterion 1 only	Criterion 1 only
Wst 01 Construction waste management	None	None	None	None	One credit
Wst 03 Operational waste	None	None	None	One credit	One credit

*For the 'Prediction of operational energy consumption', it must be demonstrated that the operational energy performance has been substantially improved.

All the minimum requirements for 'Excellent' rating have been targeted at King's House School.

1.4 Early Stage actions

In addition to the minimum standard requirements, the recommended pathway to BREEAM 'Excellent' includes a number of actions that had to be undertaken at the earliest opportunity in RIBA Stage 2 to ensure the project is able to achieve the 'Excellent' rating targeted.

The team have provided all the RIBA Stage 2 actions as follows:

- Project delivery team have met to define their roles;
- All third-party stakeholders have been consulted at Stage 2 covering the BRE's minimum consultation content;
- BREEAM AP, Sustainability Champion appointed at Stage 1 and BREEAM target has been formally agreed;
- An elemental life cycle cost (LCC) plan has been carried out by G&T;
- A site-specific indoor air quality plan has been produced by Jaw Sustainability;
- Cundall Acoustic consultant has been appointed at Concept Design;
- A suitably qualified security specialist conducts an evidence-based Security Needs Assessment (SNA);
- Preliminary design workshop focusing on operational energy performance is held prior to completion of Concept Design;
- A passive design assessment and Low Zero Carbon Technologies feasibility study has been undertaken by end of stage 2 by Jaw Sustainability;
- A Travel Plan is developed during feasibility and design stages by Jaw Sustainability;
- Building life cycle assessment (LCA) has been carried out by Jaw Sustainability;
- A sustainable procurement plan has been carried out before the Concept Design by Jaw Sustainability;
- Material efficiency assessment has been undertaken by Jaw Sustainability;
- A commitment to carry out pre-demolition audit has been provided from G&T;
- Design for disassembly and adaptability has been carried out by Jaw Sustainability;
- A qualified ecologist from The Ecology Consultancy is appointed by the end of stage 1 and have prepared the ecology appraisal report by stage 2.

In addition to the above, the team have provided the following information:

- Acoustic report from Cundall
- Flood Risk Assessment from Elliott Wood
- Stage 3 Cost Plan from G&T
- Stage 3 MEP report from Cundall
- Stage 3 Full collated report from consultants
- Energy calculations from Cundall

At present, based on the information received to date, the BREEAM NC 2018 awarded score is 10.45%.

1.5 Next steps

The team will need to provide the design information as per the Detailed Design at RIBA Stage 4 in order to complete the relevant BREEAM criteria and complete the BREEAM design stage assessment.

Finally, the detailed BREEAM timeline can be found in Appendix A and the detailed BREEAM NC 2018 assessment tool Appendix B.

Appendix A – BREEAM NC 2018 Timeline recommended by BREEAM

Design or management influence
Design or client decision
Design or management changes at a high cost
No further changes can be made
RIBA stage stipulated within BREEAM criteria

		Sub credits			Plan of Work				
			Strategic Definition	Preparation and Brief	Concept Design	Developed Design	Technical Design	Construction	Handover and Close Out
Section									
Man 01	Project brief and design	Project Delivery Planning							
		Stakeholder consultation							
		BREEAM Advisory Professional			maximise project performance	maximise project performance			
Man 02	Life cycle cost and service life planning	Life cycle cost			elemental LCC		Component level LCC options		
		Capital and cost reporting							
Man 3	Responsible construction practices	Environmental management							
		BREEAM Advisory Professional							
		Responsible construction management							
		Monitoring of construction site impacts							
Man 4	Commissioning and handover	Comissioning-testing schedule and responsibilities							
		Handover						Builing user guides and training schedules prepared	Builing user guides and training schedules prepared
Man 5	Aftercare								
Hea 1	Visual comfort								
Hea 2	Indoor air quality				Indoor air quality plan				
Hea 4	Thermal comfort								
Hea 5	Acoustic performance				Acoustician appointment				
Hea 6	Security								
Hea 7	Safe and healthy surroundings								
Ene 01	Reduction of energy use and carbon								
Ene 02	Energy monitoring								
Ene 03	External lighting								
Ene 04	Low carbon design	Passive design			passive design analysis				
		Low and zero carbon technologies feasibility			feasibility study				
Ene 05	Energy efficient cold storage	Refrigeration energy consumption			strategy for design and installation				
Ene 06	Energy efficient transportation systems								
Ene 07	Energy efficient laboratory systems	Design specification			client engagement				
Ene 08	Energy efficient equipment								
Tra 01	Transport assessment and travel plan			Travel plan					

Tra 02	Sustainable transport measures			Consultation with local authority (option 6 only)					
Mat 01	"Environmental impacts from construction products - Building life cycle assessment"				Building LCA submission		Building LCA submission		
Mat 02	Environmental impact from construction products							Installation of certified products	
Mat 03	Responsible sourcing of materials	sustainable procurement plan		Sustainable procurement plan	Review Sustainable procurement plan	Review Sustainable procurement plan			
Mat 05	Designing for durabilty and resilence								
Mat 06	Material efficiency			Stage factors	Stage factors	Stage factors	Stage factors	Stage factors	
Wst 01	Construction waste management			Pre-demolition audit					
Wst 02	Use recycled and sustainably sourced aggregates								
Wst 03	Operational watse								
Wst 04	Speculative finishes								
Wst 05	Adaptation to climate change			Climate adaptation strategy appraisal			Update on Climate adaptation strategy appraisal		
Wst 06	Design for disassembly and adaptility								
Wst 01	Construction watse management				Pre-demolition audit				
Wst 02	Use of recycled and sustainably sourced aggregations								
Wst 03	Operational watse								
Wst 04	Speculative finishes								
Wst 05	Adaptation to climate change				Climate adaptation strategy appraisal		Update on Climate adaptation strategy appraisal		
Wst 06	Design for disassembly and adaptility	Design for disassembly and functional adaptability			Disassembly and functional adaptation study				
		Adaptation Potential for natural ventilation							
LE 01	Site selection	Previously occupied land							
		Contaminated lan							
LE 02	Identifying and understanding the risks and opportunities for the site	Survey and evaluation							
		Determing the site wide outcomes							
LE 03	Managing negative impacts on ecology								
LE 04	Enhacing site ecology								
LE 05	Long term ecology management and maintanence								
Pol 01	Impact of refrigerants								
Pol 02	Local air quality								
Pol 03	Flod and surface water management								
Pol 04	Reduction of night time light pollution								
Pol 05	Reduction of noise pollution								

Appendix B – BREEAM NC 2018 Assessment tool

Introduction

This report is intended as a summary of progress against the targeted credits for the following BREEAM assessment. This is in support of the planning application. BREEAM Stage 2 actions have been closed. Further information is required and will be provided by the end of Stage 3 – Stage 4.

BREEAM 'Excellent' rating is targeted with a minimum score of 74.65% and shall be obtained when of the information will be provided and the minimum criteria are met.

Project Name	King's House School
BREEAM Version	BREEAM 2018 NC
Assessment Stage	Design Stage
Lead Assessor	Kavita Kumari
Targeted Score	75.38 %
Target Rating	Excellent (70%)
Current Score	10.45%
Current Rating	Unclassified
Downloaded By	Ancuta Elena Doroftei
Download Date	11/01/21
Download Time	13:39:16 (GMT)

Within the report the progress against each credit will be marked as follows:

Red	Not yet started	No information received
Amber	Ongoing	Partial information received OR full credits no longer achievable.
Green	Achieved	All required information received and credit awarded.
Grey	Not targeted	Not targeted.

Minimum Standards

The performance against the minimum standards to achieve BREEAM 'Excellent' rating is summarised below;

Issue	Targeted
Man 03 - Responsible construction practices	Yes
Man 04 - Commissioning and handover	Yes
Man 04 - Commissioning and handover	Yes
Man 05 - Aftercare	Yes
Ene 01 - Reduction of energy use and carbon emissions	Yes
Ene 02 - Energy monitoring	Yes
Wat 01 - Water consumption	Yes
Wat 02 - Water monitoring	Yes
Mat 03 - Responsible sourcing of construction products	Yes
Wst 01 - Construction waste management	Yes
Wst 03 - Operational waste	Yes

All the minimum requirements for 'Excellent' rating have been targeted. The above minimum standards will be met when further information is provided during RIBA Stage 4.

Credit Progress Log

		Available	Targeted	Achieved	Action	Status	Information Outstanding / Comments
Management							
Man 01	Project brief and design	4	4	1	Sustainability Consultant, Architect		***Status*** ***Credit 1 Consultation RIBA Stage 2 awarded.*** **More evidence needed:** **Credit 2** *Stakeholder consultation (interested parties)* - **RIBA stage 3/4 action** • Consultation exercise carried out by an independent party. **Credit 3 & 4** *BREEAM AP (concept design)* - **RIBA stage 2-4 action** **Prerequisite**: evidence confirming that the project team, including the client, formally agree strategic performance targets early in the design process. • BREEAM AP Design Stage Report. The report should contain the following: ○ Letter of appointment ○ Project Programme during the 1-4 RIBA stages ○ Concept design solutions ○ Meeting minutes confirming that the BREEAM AP attended key meetings during the Concept Design, Developed Design and Technical Design stages ○ Pre-assessment
Man 02	Life cycle cost and service planning	4	4	2	Cost Consultant		***Status*** ***Credit 1 Elemental LCC plan awarded (RIBA Stage 2)*** **Evidence needed:** **Credit 2** *Component level LCC options appraisal* - **RIBA stage 4 action** • Component level LCC options appraisal plan. **Credit 3** *Capital cost reporting* - **RIBA stage 4 action** Stage 3 Cost Plan has been provided by G&T [ref.30]. • Predicted capital cost is 11,404 £/m² GIA At Stage 4 the predicted capital cost will be reviewed and the BREEAM credit will be closed.
Man 03	Responsible construction practices	6 + 1	6	0	Sustainability Consultant, Project Manager		**Status** **Evidence needed - RIBA stage 4 action** **Credit 0** *Prerequisite - Legally harvested and traded timber* • A letter from the contractor confirming that all timber and timber-based products used during the construction process of the project will be 'legally harvested and traded timber'. **Credit 1** *Environmental management* • Man 03 Proforma OR Relevant Contractor clauses in line with BREEAM requirements. **Credit 2** *BREEAM AP (site)* • **Prerequisite**: evidence confirming that the project team, including the client, formally agree strategic performance targets early in the design process. • BREEAM AP Post Construction Report. The report must include: ○ Letter of appointment ○ Project Programme during the 5-6 RIBA stages ○ Concept design drawings/plans/schemes

							○ Construction Progress notes and photos ○ Meeting minutes confirming that the BREEAM AP attended key meetings during the Construction, Handover and close Out stages. ○ Pre-assessment ○ Commissioning records **Credit 3** *Responsible construction management* • Please provide a completed and signed copy of Man03 Proforma. The proforma can be downloaded by clicking on Man03 issue, then on the bottom left corner of the window popped-up, click on Proforma. **Credit 4** *Monitoring of construction site impacts* • Man 03 Proforma OR Relevant Contractor clauses in line with BREEAM requirements.
Man 04	Commissioning and handover	4	4	0	Mechanical Engineer, Electrical Engineer, Contractor		**Status** **Evidence needed - RIBA stage 4 action** **Credit 0** *Prerequisite (Very Good to Outstanding)* • Relevant Contractor clauses in line with BREEAM requirements confirming that two BUG's will be developed prior to handover and distributed the following users: ○ A non-technical user guide for distribution to the building occupiers ○ A technical user guide for the premises facilities managers **Credit 1 and 2** • Relevant Contractor clauses in line with BREEAM requirements OR • Commissioning schedule. • Appointment letter or commissioning responsibilities schedule. **Credit 3** *Testing and inspecting building fabric* • Relevant Contractor clauses in line with BREEAM requirements OR A letter of commitment. **Credit 4** *Handover* • Relevant Contractor clauses in line with BREEAM requirements confirming that two BUG's will be developed prior to handover and distributed the following users: ○ A non-technical user guide for distribution to the building occupiers. ○ A technical user guide for the premises facilities managers. • Relevant Contractor clauses in line with BREEAM requirements confirming that there will be prepared two training schedules timed appropriately around handover and proposed occupation plans for the following users: ○ A non-technical training schedule for the building occupiers. ○ A technical training schedule for the premises facilities managers.
Man 05	Aftercare	3	3	0	Contractor, Client		**Status** **Evidence needed - RIBA stage 4 action** **Credit 1** *Aftercare support* • A signed and dated commitment letter from the client confirming the Aftercare support requirements. **Credit 2** *Commissioning – implementation* • Appointment letters or commissioning responsibilities schedule confirming the commissioning requirements. • A signed and dated commitment letter from the client confirming the Commissioning – implementation requirements. **Credit 3** *Post occupancy evaluation (POE)* • A signed and dated commitment letter from the client confirming the Post-occupancy requirements.
Management score (+exemplary/innovation)		**21 + 1**	**21**	**3**			
Health & Wellbeing							

Hea 01	Visual comfort	5 + 2	5	0	Sustainability Consultant, Architect, Electrical Engineer, Mechanical Engineer		**Status** **Stage 3 MEP report has been received showing the internal lighting arrangements (Credit 4)** **Evidence needed - RIBA stage 4 action** **Credit 1** *Control of glare from sunlight* • Relevant Architectural clauses in line with BREEAM requirements confirming the Glare control requirements. • Design drawings showing the glare control system. • A glare control assessment. **Credit 2** *Daylighting (building type dependent)* • Daylighting calculations. • Design drawings. **Credit 3** *View out* • Relevant Architectural clauses in line with BREEAM requirements confirming the View Out requirements. • Design drawings confirming the view out. • Windows schedule **Credit 4** *Internal and external lighting levels, zoning and control* • Relevant MEP clauses in line with BREEAM requirements confirming the Internal and external lighting levels • Design drawing showing the external lighting. • Manufacturer data sheets of external lighting.
Hea 02	Indoor air quality	4 + 1	4	0	Sustainability Consultant, Electrical Engineer, Mechanical Engineer, Architect, Contractor		**Status** *Indoor air quality report received (RIBA stage 2)* **Evidence needed - RIBA stage 4 action** **Credit 1** *Ventilation* Documentation showing the ventilation strategy, such as Ventilation Strategy Report and design drawings, confirming the following: • The building will provide fresh air into the building in accordance with the criteria of the relevant standard for ventilation • Ventilation pathways are designed to minimise the ingress and build-up of air pollutants inside the building • Where present, HVAC systems must incorporate suitable filtration to minimise external air pollution, as defined in BS EN 13779:2007 Annex A3. The specified filters should achieve a minimum Indoor Air Quality of IDA2 • Areas of the building subject to large and unpredictable or variable occupancy patterns have carbon dioxide (CO) or air quality sensors specified • In mechanically ventilated buildings or spaces: sensors are linked to the mechanical ventilation system and provide demand-controlled ventilation to the space • In naturally ventilated buildings or spaces: sensors either have the ability to alert the building owner or manager when CO levels exceed the recommended set point, or are linked to controls with the ability to adjust the quantity of fresh air, i.e. automatic opening windows or roof vents • For naturally ventilated or mixed mode buildings, the design demonstrates that the ventilation strategy provides adequate cross flow of air to maintain the required thermal comfort conditions and ventilation rates in accordance with CIBSE AM10. **Credit 2** *Emissions from building products* • Hea 02 Proforma OR A letter of commitment confirming the emission limits for all products types. **Credit 3** *Post-construction indoor air quality measurement* • Hea 02 Proforma
Hea 04	Thermal comfort	3	2	0	Sustainability Consultant		**Status**

							Evidence needed - RIBA stage 3 action **Credit 1** *Thermal modelling* Thermal Comfort report confirming the following: • Thermal modelling, measurements and evaluation results with confirmation that these are within the required limits • PMV/PPD data from the design team **Credit 2** *Design for future thermal comfort* Thermal Comfort report confirming the following: • Thermal modelling, measurements and evaluation results with confirmation that these are within the required limits for a projected climate change environment. • The PMV and PPD indices
Hea 05	Acoustic performance	3	3	0	Acoustician		**Status** **RIBA Stage 3 Acoustic report - received** **Evidence needed - RIBA stage 4 action** The following will need to be reviewed and developed during the next stage. Approach to internal ambient noise levels (IANLs) to be agreed with client and building control. Requirements for external glazing on facades directly facing external plant area; Review of all construction elements with acoustic performance requirements such as façade, external glazing, roof, internal partition, floors and ceiling; Requirement for internal window between AV Recording and the Main Hall; Develop acoustic details such as junction and penetration details, particularly in acoustically sensitive spaces such as music and drama spaces; Develop room acoustics strategies for all teaching and study areas including acoustic absorption specification. Particular attention will need to be paid to acoustically sensitive spaces such as music, drama and main hall; and Assess noise impact from external plant items.
Hea 06	Security	1 + 1	1	1	Architect		**Status** *Credit 1 Security of site and building awarded. (RIBA stage 2)*
Hea 07	Safe and healthy surroundings	2	2	0	Architect		**Status** **Evidence needed - RIBA stage 4 action** **Credit 1** *Safe access* • Relevant Architectural clauses in line with BREEAM requirements confirming the Safe access requirements • Design drawings showing the building safe access. **Credit 2** *Outside space* DMA have provided the drawing showing the external areas which includes outdoor learning space, external play space and garden space.
Health & Wellbeing score (+exemplary/innovation)		**18 + 4**	**17**	**1**			
Energy							

Ene 01	Reduction of energy use and carbon emissions	13 + 5	11	0	Sustainability Consultant		**Status** **Evidence needed** **Credit 1** *Energy performance* • A copy of the Energy modelling report and output documents generated by the approved software for the assessed building at the design stage.**- RIBA stage 3 action** **Credit 2** *Prediction of operational energy consumption* ***Meeting minutes re. Operational energy consumption received (RIBA stage 2)*** • A copy of the energy modelling report to generate the predicted operational energy consumption figures (these scenarios will consider: weather; operating hours for systems; occupancy hours and management factors). • Confirmation of suitably qualified energy modeller's qualifications and experience.
Ene 02	Energy monitoring	1	1	0	Electrical Engineer, Mechanical Engineer		**Status** **Stage 3 MEP report has been received** **More evidence needed - RIBA stage 4 action** **Credit 1** *Sub-metering of end use categories* • Design drawings showing the energy metering.
Ene 03	External Lighting	1	1	0	Electrical Engineer, Mechanical Engineer		**Status** **Stage 3 MEP report has been received** **More evidence needed: - RIBA stage 4 action** • Relevant MEP clauses in line with BREEAM requirements. • Luminaire schedule. • Design drawing showing the external lighting. • Manufacturer data sheets.
Ene 04	Low carbon design	3	2	0	Sustainability Consultant		**Status** *Low Carbon Design report received (RIBA stage 2)* **Evidence needed:** **Credit 1** *Passive design* • Credit Hea 04 is achieved. **Credit 2** *Low and zero carbon technologies* • Please provide evidence that An energy specialist completes a feasibility study by the end of the Concept Design. **Credit 3 - Free cooling** • Waiting for the final results from the full overheating assessment for the school.
Ene 06	Energy efficient transportation systems	2	2	0	Lift Engineer		**Status** **Evidence needed: - RIBA stage 4 action** **Credit 1** *Energy consumption* • Report or study of transport analysis or calculations.

							• BREEAM lift report. • Manufacturer's product details or formal letter of commitment from the system(s) manufacturer/supplier. **Status** **Credit 2** *Energy efficient features* • A copy of the Energy efficient features report. • Design drawings confirming the regenerative drives. • Manufacturer data sheets.
Ene 08	Energy efficient equipment	2	0	0	Architect, Electrical Engineer, Mechanical Engineer		**Status** **Evidence needed:** • Relevant MEP clauses in line with BREEAM requirements detailing the building's unregulated energy consuming loads. • Calculations identifying the building's unregulated energy consuming loads and demonstrate the reduction in the total annual unregulated energy consumption of the building • Manufacturer's technical details of the of the systems that are used to reduce the unregulated energy consumption.
Energy score (+exemplary/innovation)		**22 + 5**	**17**	**0**			
Transport							
Tra 01	Transport assessment and travel plan	2	2	0	Sustainability Consultant		**Status** *Travel Plan received (RIBA stage 2)* **More evidence needed:** • Written confirmation that the travel plan will be implemented post construction and be supported by the building's management in operation. • BREEAM Tra 01 calculator tool (to be completed by the BREEAM Assessor).

Tra 02	Sustainable transport measures	10	3	0	Architect		**Status**
							
							Evidence needed: - RIBA stage 4 action
							Credit 0 *Prerequisite*
							• Achieve Tra01 transport assessment and travel plan credits. The Travel Plan has been provided by JAW Consultancy.
							Credit 1 *Transport options implementation*
							The Travel Plan confirms that the Accessibility Index (AI) is 6.01 < 25.
							The school has Silver Level accreditation by the STARS (Sustainable Travel: Active, Responsible, Safe) programme. This is awarded for their achievements and commitment to road safety, reducing car use and working to increase the levels of walking, scooting, cycling and use of public transport for the journey to and from school.
							3 Sustainable Transport points are required to achieve 3 credits.
							• **Cycle Storage spaces (1 point)**: The Travel Plan confirms that the site currently has 10 on site cycle parking spaces. In addition to that, the existing site plan shows the location of the existing covered bicycle racks [ref.37]. Potential credit. The team to confirm that there are only two classes per year.
							• **Existing amenities (1 point):** The Travel Plan shows that the following amenities are within 500m.
							  ○ Food Outlet
							  ○ Bank/ Cash point

							○ Open space ○ Postal facilities ○ Pharmacy ○ GP or medical facility ○ Childcare • **Enhanced amenities (2 points)**: New outdoor play space will be provided. Please provide a completed and signed copy of Tra 02 Proforma. The proforma can be downloaded by clicking on Tra 02 issue, then on the bottom left corner of the window popped-up, click on Proforma.
Transport score		**12**	**5**	**0**			
Water							
Wat 01	Water consumption	5 + 1	3	0	Architect		**Status** **Evidence needed: - RIBA stage 4 action** **Credit 1** *Water consumption* • Please provide a completed and signed copy of Wat01 Proforma. The proforma can be downloaded by clicking Wat01 issue, then on the bottom left corner of the window popped-up, click on Proforma.
Wat 02	Water monitoring	1	1	0	Electrical Engineer, Mechanical Engineer		**Status** *Stage 3 MEP report has been received* **More evidence needed - RIBA stage 4 action** **Credit 0** *Prerequisite* • Relevant MEP clauses in line with BREEAM requirements confirming the specification of a water meter on the mains water supply to each building; this includes instances where water is supplied via a borehole or other private source. **Credit 1** *Water consumption* • Manufacturer's technical details of the water meter. • Domestic cold-water schematics confirming the existence of a water meter installed on the mains water supply and it's linked to BMS.
Wat 03	Water leak detection	2	2	0	Electrical Engineer, Mechanical Engineer		**Status** **Evidence needed - RIBA stage 4 action** **Credit 1 and 2** • Relevant MEP clauses in line with BREEAM requirements confirming the specification of the leak detection system which can detect a major water leak on the mains water supply within the building and between the building and the utilities' water meter is installed. • Design drawing showing the leak detection system to be installed as well as flow control devices that regulate the supply of water and sanitary components. • Manufacturer's technical details of the leak detection system and the flow control devices.
Wat 04	Water efficient equipment	1	1	0	Public Health Engineer, Mechanical Engineer, Architect		**Status** **Evidence needed - RIBA stage 4 action** **Credit 1** *Water efficient equipment*

							• Relevant MEP clauses in line with BREEAM requirements detailing all water demands from uses other than domestic-scale drinking and sanitary use components. • Design drawings showing the water efficient system installed. • Manufacturer's technical details of the of the water systems that are used to reduce the unregulated water demand.
Water score (+exemplary/innovation)		**9 + 1**	**7**	**0**			
Materials							
Mat 01	Environmental impacts from construction products - Building life cycle assessment (LCA)	7 + 3	5	5	Sustainability Consultant		**Status** *Credits awarded for RIBA Stage 2*
Mat 03	Responsible sourcing of construction products	4 + 1	3	1	Sustainability Consultant, Architect		**Status** **Credit 1 Enabling sustainable procurement** *JAW Sustainability have provided a copy of the Sustainable Procurement Plan (RIBA stage 2 action)* **Evidence needed: - RIBA stage 3/4 action** **Credit 0** *Prerequisite* • Written confirmation from the principal contractor or client that all timber will be sourced in compliance with the definition of Legally harvested and Legally traded timber or has certification that fulfils these requirements (e.g. FSC, PEFC). **Credit 2** *Measuring responsible sourcing* • Please provide a completed and signed copy of Mat 03 Proforma. Proforma can be downloaded by clicking Mat 03 issue and then on the bottom left corner click on Proforma. • BREEAM Mat 03 calculator. • Evidence of level of responsible sourcing achieved for each construction product. For example, certificates.
Mat 05	Designing for durability and resilience	1	1	0	Architect		**Status** **Evidence needed - RIBA stage 4 action** • A report confirming that the building incorporates suitable durability and protection measures or designed features/solutions to prevent damage to vulnerable parts of the internal and external building and landscaping elements and which are the measures proposed for the site. • Design drawings illustrating vulnerable areas or parts of the building. • Design drawings confirming the durability of the measures specified.
Mat 06	Material efficiency	1	1	1	Sustainability Consultant		**Status** *The credit can be awarded for Stage 2.* *Waiting also for the updated report during Developed and Technical stages.*
Materials score (+exemplary/innovation)		**14 + 4**	**10**	**7**			
Waste							
Wst 01	Construction waste management	5 + 1	4	0	Contractor		**Status**

							Evidence needed: **Credit 1** *Pre-demolition audit* - ***pre-demolition audit commitment letter received (RIBA Stage 2)*** • A Pre-demolition audit of any existing buildings, structures or hard surfaces (in case of demolition). - **RIBA stage 4 action** **Credit 2** *Construction resource efficiency* - **RIBA stage 4 action** • A copy of Resource Management Plan. • Please provide a completed and signed copy of Wst01 Proforma. Proforma can be downloaded by clicking Wst01 issue and then on the bottom left corner click on Proforma. **Credit 3** *Diversion of resources from landfill* - **RIBA stage 4 action** • Please provide a completed and signed copy of Wst01 Proforma. Proforma can be downloaded by clicking Wst01 issue and then on the bottom left corner click on Proforma.
Wst 02	Use of recycled and sustainably sourced aggregates	1 + 1	0	0			**Status** **Evidence needed:** **Credit 0** *Prerequisite* • A pre-demolition audit of any existing buildings, structures or hard surfaces (in case of demolition). **RIBA stage 4 action**
Wst 03	Operational waste	1	1	0	Architect		**Status** **Evidence needed - RIBA stage 4 action** **Credit 1** *Operational waste* • Relevant Contractor clauses in line with BREEAM requirements confirming provision and scope of dedicated facilities. • Design drawing showing the waste location and related area.
Wst 05	Adaptation to climate change	1 + 1	1	1	Sustainability Consultant		**Status** ***Credit awarded (RIBA stage 2).***
Wst 06	Design for disassembly and adaptability	2	2	0	Architect, Civil Engineer		**Status** *Stage 2 measures received within an email.* **Evidence needed - Updated report from Stage 3 onwards** **Credit 1** *Design for disassembly and functional adaptability- recommendations* • Disassembly and functional adaptability study. **Credit 2** *Disassembly and functional adaptability – implementation* • Disassembly and functional adaptability study. • Implementation plan report. • Building adaptability and disassembly guide.
Waste score (+exemplary/innovation)		**10 + 3**	**8**	**1**			
Land Use & Ecology							

LE 01	Site selection	2	1	0	Architect		**Status** *Plans showing the footprint of the old building and the new one's - received* **More evidence needed: - RIBA stage 3/4 action** **Credit 1** *Previously occupied land* • Letter confirming that at least 75% of the proposed development's footprint is on an area of land which has previously been occupied.

LE 02	Identifying and understanding the risks and opportunities for the site	2 + 1	2	0	Ecologist		**Status**
							
							Evidence needed: - RIBA stage 3/4 action
							
							Credit 0 *Prerequisite- Assessment route selection*
							• The completed GN34 BREEAM Ecological Risk Evaluation Checklist. The checklist will be completed by a project team member (Route 1 – GN 34) or Sustainability Qualified Ecologist (Route 2 - GN 40).
							• Relevant Contractor clauses in line with BREEAM requirements confirming that compliance is monitored against all relevant UK and EU or international legislation relating to the ecology of the site.
							
							Credit 1 *Survey and evaluation/Determining the site-wide outcome*
							Route 1
							• The completed GN34 BREEAM Ecological Risk Evaluation Checklist.
							Route 2:
							• Appointment of a Sustainability Qualified Ecologist.
							• Ecology Report showing the survey and the evaluation of the site.
							• GN40 BREEAM Ecological Risk Evaluation Checklist.
							Credit 2 *Determining the ecological outcomes for the site (Routes 1 and 2)*
							• Ecology report showing the following:
							  ○ Project team liaison and collaboration with relevant stakeholders
							  ○ General ecology focused topics
							  ○ Identification and selection of solution and measures

LE 03	Managing negative impacts on ecology	3	2	0	Ecologist		**Status** **Evidence needed: - RIBA stage 3/4 action** **Credit 0** *Identification and understanding the risks and opportunities for the site* • Relevant Contractor clauses in line with BREEAM requirements confirming that compliance is monitored against all relevant UK and EU or international legislation relating to the ecology of the site. • The LE 02 credits have been achieved. **Credit 1** *Planning, liaison and implementation* • Documents showing that the ecological outcomes for the site have been implemented (meeting minutes, letters of confirmation, reports, construction programme, responsibility matrix). **Credit 2** *Managing negative impacts of the project* • Ecology report showing the negative impacts from site preparation and construction works and how these have been managed.
LE 04	Change and enhancement of ecological value	4 + 1	2	0	Ecologist		**Status**

							Evidence needed: - RIBA stage 3/4 action **Credit 0** *Prerequisite- Identification and understanding the risks and opportunities for the site* • Relevant Contractor clauses in line with BREEAM requirements confirming that compliance is monitored against all relevant UK and EU or international legislation relating to the ecology of the site. • The LE 03 credits have been achieved. Including the following specific aims of this issue: o Roles and responsibilities have been clearly defined, allocated and implemented to support successful delivery of project outcomes. o Site preparation and construction works have been planned for and implemented at an early enough project stage to optimise benefits and outputs. **Credit 1** *Enhancement of ecology* **Route 1** • Design drawing and letter confirming that the solutions and measures based on recommendations from the Ecologist have been implemented. • Documentation showing that the data collected is provided to the local environmental records centres. **Credit 1** *Liaison, implementation and data collation* **Route 2** • Design drawing and letter confirming that the solutions and measures based on recommendations from the Ecologist have been implemented. **Credit 2** *Enhancement of ecology* • Calculation of the change in ecological value based on GN36.
LE 05	Long term management and maintenance	2	2	0			**Status** **Evidence needed: - RIBA stage 3/4 action** **Credit 0** *Roles and responsibilities, implementation, statutory obligations* • Relevant Contractor clauses in line with BREEAM requirements confirming that compliance is monitored against all relevant UK and EU or international legislation relating to the ecology of the site. • The LE 04 credits have been achieved. Including the following specific aims of this issue: o Roles and responsibilities have been clearly defined, allocated and implemented to support successful delivery of project outcomes. o Site preparation and construction works have been planned for and implemented at an early enough project stage to optimise benefits and outputs. **Credit 1** *Planning, liaison, data, monitoring and review management and maintenance* • Report from the Project Team showing the following: o Monitoring and reporting of on the ecological outcomes for site implemented at the design and construction stage o Monitoring and reporting of outcomes and successes from the project o Arrangements for the ongoing management of landscape and habitat connected to the project (on and, where relevant, off site) o Maintaining the ecological value of the site and its relationship or connection to its zone of influence o Maintaining the site in line with the any sustainability linked activities, e.g. ecosystems benefits (LE 02). o Remedial or other management actions are carried out which relate to those identified in LE 02, LE 03 and LE 04 • Confirmation from the client that a section on Ecology and Biodiversity is included as part of the tenant or building owner information supply. **Credit 2** *Landscape and ecology management plan (or similar) development* • Copy of the Landscape and ecology management plan.
Land Use & Ecology score (+exemplary/innovation)		**13 + 2**	**9**	**0**			
Pollution							

Pol 01	Impact of refrigerants	3	1	0	Electrical Engineer, Mechanical Engineer		**Status** **Evidence needed: - RIBA stage 4 action** ***Prerequisite*** • Written confirmation from the principal contractor or client that all systems with electric compressors comply with the requirements of BS EN 378:2008 and that refrigeration systems containing ammonia comply with the Institute of Refrigeration Ammonia Refrigeration Systems code of practice. **Credit 1** *Impact of refrigerants* • A letter from the contractor confirming that the system using refrigerants have Direct Effect Life Cycle CO2 equivalent emissions (DELC CO2e) of less than 1000 kg/CO2/kW cooling/heating capacity. • Manufacture's technical details.
Pol 03	Flood and surface water management	5	4	0	Civil Engineer		**Status** **Credit 1** *Flood resilience* ***Flood Risk Assessment received (RIBA Stage 2)*** *Credit 1 can be awarded once the prerequisite is confirmed.* **More evidence needed: - RIBA stage 3/4 action** **Prerequisite:** • Letter detailing the experience of the appropriate consultant appointed. **Credit 1** *Flood resilience* • Credit to be awarded once the prerequisite is confirmed. **Credit 2** *Surface water run-off* **Prerequisite**: Relevant Contractor's clauses in line with BREEAM requirements confirming that the Surface water run-off design solutions must be bespoke, i.e. they must take account of the specific site requirements and natural or man-made environment of and surrounding the site. • Calculation results for the pre-and post-development peak rate of run-off including an allowance for climate change. • Design drawing showing the drainage strategy. • Calculation results for the pre- and post-development volume of run-off. • Information showing the proposed drainage solution, system failure flood flow routes, potential flood ponding levels and ground floor levels. • Documentation showing that relevant maintenance agreements for the ownership, long term operation and maintenance of all specified Sustainable Drainage Systems (SuDS) are in place.
Pol 04	Reduction of night time light pollution	1	1	0	Electrical Engineer, Mechanical Engineer		**Status** **Stage 3 MEP report has been received** **More evidence needed - RIBA stage 4 action** • Relevant MEP clauses in line with BREEAM requirements confirming the external lighting design data. • Design drawings showing the external lighting layout. • Manufacturer data sheets containing the luminaire lumens per circuit Watt for each fitting type.
Pol 05	Reduction of noise pollution	1	1	0	Acoustician		**Status**

							Noise report received (RIBA Stage 2) **Evidence needed: - RIBA stage 3/4 action** **Credit 1** *Reduction of noise pollution* • Design drawings showing the following: • All existing and proposed noise-sensitive buildings local to, and within, the site boundary • Proposed sources of noise from the new development • Distance (m) from these buildings to the assessed development • A marked-up design plan highlighting the specification of the acoustician's attenuation measures • A formal letter confirming where relevant, that attenuation measures recommended by an appointed suitably qualified acoustician will be installed. • A formal letter confirming that a pre-completion testing will be undertaken at Post Construction of the installed and operating plant.
Pollution score		**12**	**7**	**0**			

Click down arrow to select CUNDALL Entity
Click down arrow to select CUNDALL Office Address

Asia Australia Europe MENA UK and Ireland
www.cundall.com

ONE PLANET LIVING | An initiative by Bioregional