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BREEAM OFFICES 2006 PRE-ASSESSMENT

246a-248 Kilburn High Road, London NW6

For Monument Properties

October 2006

1.0 Executive Summary

Julian Brooks Associates were appointed by Monument Properties to assist in the development of a robust and coherent sustainability strategy for their proposed mixed-use development at 246a – 248 Kilburn High Road.

The basement and ground floor element to the scheme is comprised of approximately 700m2 of commercial space and 68m2 of retail space. At present, the developer intends to complete these elements of the scheme to shell and core only. Therefore, all elements relating to the internal fit-out of the commercial space have not been decided upon and will be left for any future tenant to resolve. The scale of retail elements are considered too small to warrant a separate BREEAM assessment.

The commercial element of the scheme has been assessed using BREEAM Offices 2006 Pre-Assessment Estimator. However, it must be noted that the BREEAM assessment methodologies are ill-suited for use at the pre-planning stage of a scheme, particularly so for speculative developments where internal fit-out will be completed by future tenants.

This impacts on the assessment as it is only possible to consider approximately one third of the assessment criteria at this stage of design development. The main categories which can be considered address issues relating to site ecology, construction materials and transport links. This creates complications in the assessment of speculative schemes, and how best to predict their overall performance once all detail design and fit-out elements have been determined. It is possible to predict a rating based upon a pro-rata score of the credits achieved and those suitable for assessment at any given point in time. However, it is felt that this approach is overly complicated and would not produce reliable results.

Therefore it was decided in this instance to limit the assessment to the credits which can be accurately reviewed at this stage of the design development and consider the results in line with the final categorisations.

At present the scheme achieves a predicted score of 31.62%, which is the equivalent of a Pass rating. It is therefore contended that it is not unreasonable for the scheme to achieve an overall rating of Good during the detailed design phase (minimum threshold of 40%).

The scheme performs particular well in categories based on access to local public transport and amenities. This is in keeping with developments on urban sites. In addition to this, the use of an existing brownfield site is perceived as beneficial by limiting the impact on currently undeveloped land.

The development of the scheme on an existing site also means that the scheme performs relatively well in the Ecology category, although due to the limited space available there are no realistic options to design in positive enhancements to the site ecology. The proposed scheme includes the use of a significant proportion of sustainably sourced materials and construction techniques. This has the potential to minimise the embodied energy of the certain construction elements.

Finally, it should be noted that a fully sustainable commercial building is more complex to develop and deliver than housing. This is because for speculative commercial developments, the specific end-user group can not be identified until relatively late in the design development. Indeed, a significant majority of the truly successful sustainable commercial property developments have only been achieved where the end user/occupier is involved in the design development and procurement of the final building. With this in mind, it is suggested that the design team have addressed all of the key issues possible given the early stage of the design development and the speculative nature of the commercial elements to the scheme.

2.0 Introduction

BREEAM for Offices is the world's most widely used means of reviewing and improving the environmental performance of office buildings. It is one of the core assessment types developed by the Building Research Establishment to consider the environmental performance of the buildings that we use.

BREEAM assesses the performance of buildings in the following areas:

- Management:
- Overall management policy, commissioning site management and procedural issues
- Energy Use
- Operational energy and carbon dioxide (CO2) issues
- Health and Well-being
 - Indoor and external issues affecting health and well-being
- **Pollution**: Air and water pollution issues
- Transport
- Related CO2 and location-related factors
- Land Use
 - Greenfield and brownfield sites
- Ecology Ecological value conservation and enhancement of the site
- Materials
 - Environmental implication of building materials, including life-cycle impacts
- Water
 - Consumption and water efficiency

Developers and designers are encouraged to consider these issues at the earliest opportunity to maximise their chances of achieving a high BREEAM rating. Credits are awarded in each area according to performance. A set of environmental weightings then enables the credits to be added together to produce a single overall score. The building is then rated on a scale of PASS, GOOD, VERY GOOD or EXCELLENT, and a certificate awarded that can be used for promotional purposes.

BREEAM assessments are commonly used by clients, planners and development agencies and developers to consider the sustainability performance of their buildings in a way that is quick, comprehensive and visible in the marketplace. Property agents are also using it to promote the environmental credentials and benefits of a building to potential purchasers and tenants.

The assessment methodologies are also being used by design teams and managers to measure the performance of buildings in both the new build refurbishment sectors.

There are a number of benefits from considering BREEAM assessments of all building types ranging from enhanced environmental performance and fiscal incentives. Other benefits include:

- Demonstrating compliance with environmental requirements from occupiers, planners, development agencies and developers
- Environmental improvement: in support of a wider corporate strategy or as a standalone contribution
- Occupant benefits: to create a better place for people to work and live
- Marketing: as a selling point to potential tenants or customers
- Financial: to achieve higher rental incomes and increased building efficiency
- Best practice: to provide a thorough checklist or tool for comparing building

MANAGEMENT	CREDIT REQUIREMENT/PURPOSE	POINTS AVAILABLE	POINTS AWARDED	COMMENTS/SPECIFICATION
MOI	Where evidence provided demonstrates that an appropriate project team member has been appointed to monitor commissioning on behalf of the client to ensure commissioning will be carried out in line with the current Building Regulations,BSRIA/CIBSE guidelines and (where appropriate), best practice and where there are complex systems then a specialist agent or manager is appointed.	1.67	-	This item can not be assessed until detailed design stage
	Evidence should also be provided to show that seasonal commissioning will be carried out during the first year of occupation of the building.	1.67	-	This item can not be assessed until detailed design stage
	Where the project complies with either the Considerate Constructors scheme or an			
M04	alternative independently assessed scheme and where a firm commitment is made to achieve certification under the scheme to the following standards: • Better than Industry Standard OR • Best Practice	1.67 3.33	-	This item can not be assessed until detailed design stage
MOE	Milara ovidance domonatorias that			
MUS	2 or more items a-g listed below are achieved OR A of more items a-g listed below are achieved	1.67		
	OR	0.00		
	 6 or more items a-g listed below are achieved a) Monitor and report CO2 or energy arising from site activities. b) Monitor and report on water consumption from site activities. c) Monitor and report transport to and from site to enable CO2 emissions arising from transport to be calculated. d) Monitor construction waste on site. e) Sort and recycle construction waste on site. f) Adopt best practice policies in respect to air (dust) pollution. g) Adopt best practice policies in respect to water (ground and surface) pollution. 	5.00	-	This item can not be assessed until detailed design stage
	Where temporary timber is used on site during construction, this is from a sustainably responsible source OR re-used or recycled.	1.67	-	This item
MII	Where evidence provided demonstrates the provision of a simple guide that covers information relevant to the tenant/occupiers and non-technical building manager on the operation and environmental performance of the building.	1.67	1.67	The devloper is committed to providing this information, although the specific content can only address the elements related to the building context, and not the use of the internal mechanical systems.
	Total points carried forward	15.01	1.67	

HEALTH & WELLBEING	CREDIT REQUIREMENT/PURPOSE	POINTS AVAILABLE	POINTS AWARDED	COMMENTS/SPECIFICATION
HW01	Where at least 80% of net lettable office floor area is adequately daylit.	1.154	0	Basement area has limited daylight accessibility
HW02	Where evidence provided demonstrates that all desks are within a 7m radius of a window	1.154	-	This is a fit-out item and cannot be assessed.
HW03	Where evidence demonstrates that an occupant controlled glarre control system (eg internal or external blind) is fitted	1.154	-	This is a fit-out item and cannot be assessed.
HW04	Where evidence demonstrates that high frequency ballasts are installed on all flourescent and CFL fittings	1.154	-	This is a fit-out item and cannot be assessed.
HW05	Where evidence demonstrates that that all internal and external lighting, where relevant, is specified in accordance with the appropraite maintained illuminance levels (in lux) recommended by CIBSE	1.154	-	This is a fit-out item and cannot be assessed.
HW06	Where evidence demonstrates that lighting, in all occupied areas, is zoned to allow separate control	1.154	-	This is a fit-out item and cannot be assessed.
HW08	Where evidence demonstrates that external façade windows to all occupied areas are openable	1.154	1.54	The provided drawings indicate that all facades with glazing will have a proportion that are openable
HW09	Where air intakes serving occupied areas avoid major sources of external pollution and recirculation of exhaust air	1.154	-	This is a fit-out item and cannot be assessed until the internal arrangement has been determined
HW11	Where either: In the case of mechanically ventilated and air conditioned buildings, fresh air is provided at 121/second. OR In the case of naturally ventilated buildings, trickle vents are provided on the majority of windows, where the windows openable area is equivelent to 5% of the gross internal area of the building and the plan depth is no more than 15m otherwise extra ventilation is required.	1.154	-	This is a detailed design item that can not be assessed at this point in the scheme development. It is anticipated that areas of the basement level will require mechanical ventilation, and therefore the system design cannot be assessed at present
HW14	Where thermal comfort levels are assessed at design stage, this is used to evaluate appropriate servicing options, and appropriate thermal comfort levels are achieved.	1.154	-	This is a detailed design item that can not be assessed at this point in the scheme development.
HW15	Where evidence provided demonstrates that local control is available for temperature adjustment in each area to reflect differing local requirements.	1.154	-	This is a detailed design item that can not be assessed at this point in the scheme development. However, zoned temperature control is considered to be a minimum requirement, to reflect the zoning of the building with regard to occupation
HW16	Where evidence demonstrates that the risk of waterborne and airborne legionella contamination has been minimised.	1.154		This is a detailed design item that can not be assessed at this point in the scheme development.
HW17	Where the building design can be shown to achieve ambient internal noise levels as specificied below: C 35-40dB LAeqT in single occupancy, cellular offices •40-45 dB LAeqT I in medium sized, multi-occupancy open plan offices- ≤ 4 work stations ≤ 40m ² • 45-50 dB LAeqT in large multi-occupancy, open plan offices > 4 work stations > 40m ² Total points carried forward	1.154	1.54	This is a detailed design item that can not be assessed at this point in the scheme development.

HEALTH &	CREDIT REQUIREMENT/PURPOSE	POINTS AVAILABLE		COMMENTS/SPECIFICATION
F01	Where the building demonstrates a percentage improvement above the requirements			
EUI	for CO2 emissions as set out in the 2006 Building Regulations			
	• 1%	0.76		
	•+2%	1.52		
	• +4%	2.27		
	• +6%	3.03		
	• +8%	3.79		
	• +10%	4.55		The energy performance of the proposed building can not be assessed in
	• +12%	5.3	-	accordance with PART L2A at this stage due to the limited information available
	• +14%	6.06		regarding the heating and DHW systems, which will be developed during fit-out.
	•+18%	6.89		
	• +22%	7.57		
	• +30%	8.33		
	• +40%	9.09		
	• +50%	9.85		
	• +60%	10.61		
	• >70%	11.35		
E02	Where electricity sub-metering is provided for substantive energy uses within the building covering lighting and small power, and each of the following where present:			
	Computer Room			Machanical plant and electrical design for the scheme has yet to be completed
	Humidification Plant	0.76	_	Sub-metering should be included in the detailed design to reflect the probable
	Cooling Plant	0.70	-	use of the office space
	• Fans (Major)			use of the office space.
	• If a building has other major energy consuming items, they should be covered as			
	appropriate eg: catering facilities.			
				Tenancy sub-metering is recommended to reflect the number of tenants and
E03	Where evidence provided demonstrates sub-metering of energy use by tenancy/areas is	0.76	0	should be included during detailed design. However, at present, this credit can
	installed in the building.			not be assessed
E0/1	Where energy efficient external luminaires are specified and all light fittings are	0.76		This is a fit out item and can not be assessed
EV4	controlled for the presence of daylight.	0.78	-	
	Total points carried forward	13.63	0	

TRANSPORT	CREDIT REQUIREMENT/PURPOSE	POINTS AVAILABLE	POINTS AWARDED	COMMENTS/SPECIFICATION
TOI	Where good access is available to and from public transport networks for: • Commuting AND/OR • Devices travel	0.76	0.76	The proposed development is located on the Kilburn High Road, which is served by a number of regular bus services, and is in close proximity to London
	Business travel (These points are cummlative)	0.76	0.76	unaergrouna stations.
то2	Total Net CO2 emissions arising from transport to and from the building will be predicted based on location. Credits given are based on the scale below: • RURAL location with TYPICAL public transport links • EDGE OF TOWN location with TYPICAL public transport linls • SMALL TOWN location with TYPICAL public transport connections	0 1.52 3.03		
	CITY / TOWN CENTRE location with TYPICAL public transport connections	4.55		
	CENTRAL URBAN CONURBATION location with TYPICAL public transport connections	6.06	6.06	
	CLOSE TO MAJOR TRANSPORT NODE location with TYPICAL public transport connections	7.57		
	Where ouidence is provided to demonstrate that there is a degrate provision of sourced			
то5	Where evidence is provided to demonstrate that there is adequate provision of covered, secure and well lit cycle racks and showers. Compliant cycle storage facilities must be provided for a percentage of building occupants in accordance with the following figures: 10% of building occupants upto 500 PLUS 7% for building occupants for 501-1000 PLUS 5% for cuilding occupants for over 1001	0.76	0.76	There are 4 cycle storage spaces provided for the
	Where in addition to the above, information is provided to demonstrate that there is adequate provision of changing facilities and locakers for clothes or a dedicated drying space for wet clothes. (Points are not cumulative)	1.52	-	This is a fit-out item and can not be assessed at this stage
то8	tailored to the specific needs of the users of the assessed development			
	Walking			1
	Cycling Public Transport use of private car for travel to work mopeds/motorcycles reducing the need to travel visitors/customers deliveries	0.76	0.76	The commercial element of the development has provided sufficent cycle storage to accommodate 10% of the occupants. In addition to this, the commericial scheme is to be operated on a car-free basis, but has sufficient facilites to accommodate deliveries etc.
	Total points achieved to carry forward	11.37	9.1	

WATER	CREDIT REQUIREMENT/PURPOSE	POINTS AVAILABLE	POINTS AWARDED	COMMENTS/SPECIFICATION
WOI	Credits are awarded based on the improvement over standard specification of water fittings. A standard specification would include 6 litre flush toilets, urinals with no controls, a show that uses 12-15 litres per minute, standard taps with no flow restrictors. In a formal BREEAM assessment the predicted water consumption will be calculated using the BREEAM water calculator, as a guide the following can be used as a rough estimate of likely number of credits. Where some of the fittings use less water than standard fittings OR Where all of the fittings are low water or, where only some of the fittings are low water, rainwater or grey water systems are specified. OR Where water fittings are all low water and rainwater or grey water fittings have been specified. Note that these points are not cummulative .	0.83 1.67 2.5	-	This is a fit-out item and cannot be assessed at this stage.
W02	Where evidence is provided to demonstrate that a water meter with a pulsed output will be installed on the mains supply to each building.	0.83	0.83	Proposed for inclusion
W03	Where evidence is provided to demonstrate that a leak detection system is specified or installed	0.83	-	This is a fit-out item and cannot be assessed at this stage
W04	Where proximity detection shut off is provied to water supply for all urinals and WC's	0.83	-	This is a fit-out item and cannot be assessed at this stage
	Total points achieved to carry forward	4.99	0.83	

MATERIALS	CREDIT REQUIREMENT/PURPOSE	POINTS AVAILABLE	POINTS AWARDED	COMMENTS/SPECIFICATION
мwоı	Where evidence provided demonstrates that the major building elements specified have an A rating, as defined in the Green Guide to Specification. In a formal BREEAM assessment the number of credits will be calculated using the BREEAM materials calculator, but as a guide the following can be used as a rough estimate of the likely number of credits achieved. The following elements are considered:			It is anticipated that the detailed design development of the scheme will allow for the specification of systems that meet the requirements for an A rating as assessed by the Green Guide to Specification. Therefore these credits have been awarded.
	Where at least 80% of upper floor slab specification achieves an A overall rating Where at least 80% of external wall specifications achieve A rating overall Where at least 80% of roof specification achieves an overall A rating	0.83 0.83 0.83	0.83 0.83 0.83	
	Note: These points are cumulative	0.63	0.03	
MW03	Where carpets or other floor finishes are specified by the tuture occupant or, in tenant areas of speculative buildings, where carpets or floor finishes are installed in a limited show area only.	0.83	-	Fit-out item to be determined by tenant
MW05	Where at least 50% of the new buildings total façade comprises re-used façade and at least 80% by mass of the re-used façade comprises in-situ re-used material	0.83	0.83	It is believed that this credit will be achieved, although a detailed calculation will be required during detailed design phase.
MW06	Where evidence provided demonstrates that a design re-uses at least 80% of an existing primary structure and for part refurbishment and part new build, the volume of the re- used structure comprises at least 50% of the final structures volume	0.83	0	
MW07	Where significant use of crushed aggregate, crushed masonry or altenative aggregates (manufactured from recycled materials) are specified for 'high grade' aggregrate use (such as building structure, ground slabs, road, etc)	0.83	-	To be determined during detailed design in accordance with recommendations from structural engineers. Therefore, this credit can not be assessed at this time.
MW08	Where materials used in structural and non-structural elements are responsibly sourced For timber products this requires third party certification to show that the timber has come from a sustainably managed source and for non-timber products that the materials have EMS certification at either the process stage or thr process adn extraction phase.	2.5	2.5	The developer is keen to ensure that the contractor, when appointed appreciates the environmental benefit of sourcing materials in a responsible fashion and incorporates this into their procurement methodologies
	Where the presence of central dedicated storage space tor recyclable materials either			
MW12	within the building or on site skips are provided with good access for collections (2m2 per 1000m2 of floor area, upto 10m2 max)	0.83	0.83	Sufficent recycling storage has been provided with reasonable access for collection
	Total points achieved to carry forward	9.97	7.48	

LAND USE	CREDIT REQUIREMENT/PURPOSE	POINTS AVAILABLE	POINTS AWARDED	COMMENTS/SPECIFICATION
LE01	Where the site has previously been built upon or used for industrial purposes within the last 50 years.	1.5	1.5	The site houses existing builfings.
LE02	Where evidence is provided to demonstrate that the land used for the new development has, prior to development, been defined as contaminated and where adequate remedial steps have been taken to decontaminate the site prior to construction	1.5	0	It is believed that the site has not previously been defined as contaminated.
LE03	Where evidence is provided to demonstrate that the construction zone is defined as land of low ecological value and all existing features of ecological value will be fully protected from damage during site preperation and construction works.	1.5	1.5	The existing site is considered to be of low ecological value.
LEO4	Credits are awarded based on the degree of negative impact the new development has on a sites existing ecology. In a formal BREEAM Assessement the ecological impact of the development is calculated based on the area of habitat and number of floral species displaced, usinf BREEAM ecological value calculator. As a guide, the following can be used to estimate the likelt number of credits: No credits can be awarded where the new development will displace a significant majority of the existing sites ecological habitat types and areas. Where a majority of a sites existing ecological habitat types and areas are not displaced as a result of the new development. Where either the development displaces none of the existing sites ecological habitat types and areas. Or, where there is no, or very limited existing site ecology, for example the new development is a refurbishment, or it is on contaminated land or brownfield ladn that has been derelict/unoccupied for less than one year	1.5 3	3	There is no existing site ecology that will suffer following redevelopment of the site.
	Note that these points are not cumulative.			
LEO5	Where evidence is provided to demonstrate that the design team (or client) has i) appointed a professional to advise and report on enhancing and protecting the ecological value of the site; AND ii) implement the professionals recommendations for general enhancement and protection for site ecology OP	1.5	_	There are no ecological features to protect and therefore these credits can not be
	Where in addition to the above, evidence is provided to demonstrate a positive increase in the ecological value of the site of up to (but not including) 6 species OR Where in addition to the above, evidence is provided to demonstrate a positive increase in the ecological value of the site of 6 species or greater Note: These points are not cumulative .	3 4.5		assessed
LEO6	Where evidence is provided to demonstrate that the client has committed to achieving the mandatory requirements listed below and: At least two of the additional requirements OR At least four of the additional requirements. Note: These points are not cumulative	1.5 3		

15	6	
		Therefore, these credits can not be assessed.
	-	new habitat areas.
		features to protect, nor is there sufficient space within the scheme to provide for
		These credits can not be assessed at this stage. The site has no ecological
	,	- - -

POLLUTION	CREDIT REQUIREMENT/PURPOSE	POINTS AVAILABLE	POINTS AWARDED	COMMENTS/SPECIFICATION
P01	Where evidence provided demonstrates that use of retrigerants with a global warming potential (GWP) of less than 5 or where there are no refrigerants specified for use in building services.	1	-	This is a fit-out item and can not be assessed at this stage.
P02	Where evidence provided demonstrates that refrigerant leaks can be detected or where there are no refrigerants specified for use in the building or development.	1	-	This is a fit-out item and can not be assessed at this stage
	provision of automatic refrigerant pump down is made to a heat exchanger (or dedicated storage tanks) with isolation valves. <i>Note: these points are cumulative</i>	ı	-	This is a fit-out item and can not be assessed at this stage
P04	Where evidence provided demonstrates that the specification fo insulating materials avoids the use of substances with a global warming potential of 5 or more in either manufacture or composition	1	1	The design team and developer are keen to ensure that no insulation materials with a GWP greater than 5 will be used in the scheme.
P06	Where evidence provided demonstrates that the maximum dry Nox emissions from delivered space heating energy are: · ≤100 mg/kWh (at 0% excess O2). · ≤70 mg/kWh (at 0% excess O2). · ≤40 mg/kWh (at 0% excess O2). Note these points are not cumulative.	1 2 3	-	This is a fit-out item and can not be assessed
P07	Where evidence provided demonstrates that the assesses development is located in a zone defined as having low annual probability of flooding OR	2	2	A lcomplete flood risk assessment has not been completed. However, investigation of the Environment Agency Flood Risk Map, does not indicate that the area is within a zone of concern, and given that the site is less than 1 ha in area, a detailed assessment is not required. Therefore these credits can be awarded.
	Where evidence provided demonstrates that the assessed development is located in a zone defined as having a medium annual probability of flooding and the ground level of the building, car parking and access is above the design flood level for the sites location.	١	-	
	Note: These points are not cumulative			
	Where evidence provided demonstrates that Sustainable Urban Drainage techniques are specified to minimise the risk of localised flooding, resulting from a loss of flood storage on site through development	١	0	There are no SUDS techniques proposed for the site.
P08	Where evidence provided demonstrates that on site treatment such as oil seperators/interceptors or filtration have been specified for areas at risk from pollution ie vehicle manoeuvring areas, car parks, waste disposal facilities, delivery facilities or plant areas.	۱	1	It is understood that these will be specificied during detailed design stage by below ground drainage consultant
P11	where evidence provided demonstrates that:	I		1

	A feasibility study considering renewable and low emission energy has been carried out and the results implemented. OR In addition to the above, 10% of total energy demand for the building/development is supplied from local renewable or low emission energy, sources. OR In addition to the above and 15% of total energy demand for the building/development is supplied from local renewable or low emission energy, sources. NOTE: These point scores are not cumulative, simply award the appropriate points score corresponding to the predicted level of achievement.	1 2 3	1	The scheme includes the provision of photovoltaic panels, which have been included to provide 10% of the enerfgy requirement for the residential element of the scheme. Therefore, 1 credit has been awarded on the basis that the feasibility study has been completed.
P12	Where evidence provided demonstrates that the external lighting design is in compliance with the guidance in the Institution of Lighting Engineers (ILE) Guidance notes for the reduction of obtrusive light. 2005	1	-	This is a detailed design element and can not be considered at this stage.
	Points to be carried Forward	14	5	

CATEGORY	MAXIMUM CREDITS AVAILABLE	CREDITS AVAILABLE FOR ASSESSMENT*	TOTAL POINTS ACHIEVED IN CATEGORY
MANAGEMENT	15.0	1.7	1.7
HEALTH & WELLBEING	15.0	1.5	1.5
ENERGY	13.6	0.0	0.0
TRANSPORT	11.4	9.9	9.1
WATER	5.0	0.8	0.8
MATERIALS	10.0	7.5	7.5
LAND USE	15.0	6.0	6.0
POLLUTION	14.0	9.0	5.0
	100.00	36.4	31.6

* This reflects the number of maximum number of credits available in category, where not all questions can be addressed in category due to stage of design development the assessment has been completed at.

FINAL RATINGS	OVERALL %
PASS	25
GOOD	40
VERY GOOD	55
EXCELLENT	70