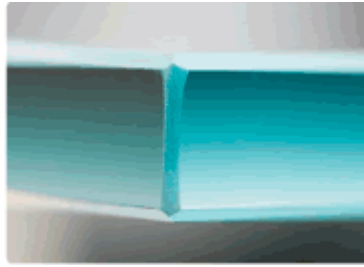


Ska rating

Fitting Out Benchmark
& Assessment Tool



Pilot Assessments

S

Skansen

FABER MAUNSELL | AECOM

 RICS



[Corporate Occupier 2] offices fit-out – ‘Ska’ Rating & Benchmarking Pilot

Handover Report

Skansen

February 2008

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1 Introduction

1.1 Project background

Having completed a Scoping Study as part of a “Research programme on the environmental impact of the fitting out of premises in the commercial sector”, Faber Maunsell has been commissioned by Skansen to undertake a number of Pilot Environmental Benchmarking assessments of office fit-outs. This report sets out the process, outcomes and lessons learned from the second Pilot assessment. The Pilot was carried out as part of Skansen’s fit-out of suites 1 & 2 on the 7th floor of [Pilot Building 2], London, for [Corporate Occupier 2].

The key expected outcome of the overall research programme is the production of “a practical benchmarking tool that can be used by the industry to assess the environmental impact of the fit-out process”. Associated guidance for tenants, landlords and their advisors on reducing the environmental impact of office fit-out would also be produced. The Scoping Study aimed to define the scope and possible methodology of an environmental benchmarking tool for office fit-out.

1.2 Aims and methodology of the Pilots

Following the Scoping Study the assessment and benchmarking methodology is now to be piloted by Faber Maunsell on a number of Skansen’s fit-out projects.

The intended process proposed for each pilot is as follows:

1. Hold an introductory meeting and gather information about the proposed fit-out.
2. Feed back suggested good practice measures to the designers, and the client via the Skansen project manager.
3. Visit the site during the works both to verify site practice and identify additional good practice opportunities.
4. Attend a post-project meeting to present feedback on the environmental assessment of the fit-out.

1.3 Background to benchmarking

Demand for improved environmental performance of buildings arises from a number of drivers. The precise detail and relative priority of these drivers is constantly changing. However the three broad types of drivers are well summarised in the title and content of a report, “Reputation; Risk and Reward” by the Sustainable Construction Task Force:

- Reputation
Positive publicity; enhanced corporate image; competitive advantage; increased appeal to customers and investors.
- Risk
Better management of environmental risks; fewer fines or breaches of regulation; preferential insurance premiums and reduced liabilities; “future-proofing” against changes in legal and other requirements.

- Reward
Reduced operating costs (and capital costs in some circumstances); more satisfied staff and better retention; some suggestion of improved productivity; better community relations.

Benchmarking is an important tool for encouraging improved environmental performance. Increasing effort is being invested to improve the environmental performance of new buildings e.g. through energy efficient, low carbon design, water efficiency, selecting materials with high-recycled content and low environmental impact, requiring contractors to adopt good on-site practices, etc. However, the fit-out process is often overlooked, potentially squandering the benefits of environmental measures incorporated during design and construction of the shell and core.

An environmental benchmarking method offers many potential benefits, including:

- Driving improvement in environmental performance on individual fit-out projects by identifying the good practice opportunities, feeding these into the design and construction process along with relevant guidance, and providing a mechanism for verifying implementation.
- Providing a vehicle for developing and recognising good practice and encouraging its adoption in the industry.
- Enabling environmental improvements to be demonstrated and communicated to customers and shareholders.
- In the medium term, encouraging environmental improvements across the industry through competition by enabling project comparisons (e.g. through the development of benchmarking profiles).

The Skansen and RICS scoping study, the emerging benchmarking methodology, and the Pilot benchmarking assessment described in this report are important steps towards realising these benefits for the industry.

1.4 Outline of this report

The following sections of this report cover:

- Section 2: [Pilot 2] overview
- Section 3: Benchmarking results
- Section 4: Feedback
- Section 5: Benchmark scoping, scoring and rating
- Section 6: Pilot 2 – Lessons Learnt.

A number of annexes present further information that will aid understanding of the contents of the main report, as follows:

- Annex A Scope of [Pilot 2] fit-out
- Annex B Good Practice measures applicable to [Pilot 2] fit-out
- Annex C Good Practice Measures Summary Tables

2 [Pilot 2] overview

2.1 The building

The second pilot undertaken was the fit-out of suites 1 & 2 on the 7th floors of [Pilot Building 2], London, on behalf of [Corporate Occupier 2].

2.2 Initial meeting

An initial meeting held on the scope of the fit-out project at [Pilot Building 2] established that the design and development were quite far progressed. Therefore, a pre-assessment briefing would not be possible for this project.

2.3 Scope of pilot

Do to the late stage in the fit-out process it was agreed that the assessment would focus on assessing the design and practices of the fit-out as they stand and there would be little opportunity to inform the process to improve the environmental performance.

The scope of the [Corporate Occupier 2] pilot was to include the trialling of the credits developed at the scoping stage on a real fit-out project.

2.4 Scope of [Pilot 2] fit-out

Suites 1 & 2 on the 7th floor of [Pilot Building 2] are being fitted out by Skansen.

For Suite 1 the landlord has already completed the Category A fit-out. Skansen are doing the tenant fit-out.

For Suite 2 Skansen are doing both the Category A fit-out and the tenant fit-out. The Category A fit-out has to be completed to the Landlord’s requirements.

The fit out of the two suites comprised the following elements:

	<u>Suite 1</u>	<u>Suite 2</u>
Strip out	No	Yes
Ceiling	No	Replaced
New Air conditioning	No	Yes
lights and controls	No	Yes: new fittings and controls
Windows	Handles replaced and frames re-sprayed	
Blinds	Yes	Yes
raised floor	No	Yes
floor finishes	No	Yes
partitions	Yes	Yes

2.5

Construction site visit

An on site team meeting was attended on 30 May 2007. A site walkover was undertaken following the meeting and the following elements of the fit-out were reviewed:

- waste management practices;
- general observations of the early stages of the fit-out process.

Data requests in order to complete the environmental benchmarking of the project were discussed during the site walkover and issued to the team following the walkover / meeting.

3 Benchmarking results

This sections sets out the results of the benchmarking assessment. The Pilot assessments are a learning process. The scoring and rating system is still developing and criteria are not fully developed in all areas. Interpretation of the benchmarking results for the Pilot assessments should take this into account.

A benchmarking label or certificate would present the information shown in sections 3.1 and 3.2.

3.1 Benchmark Rating & Label



Office location: **[Pilot Building 2]**
Central London

Client **[Corporate Occupier 2]**

Project team: **Skansen**

Benchmarking: Faber Maunsell



Status: **Verified at Handover**

Rating: **Typical**

	n/a	T	?
Assessment Stage	Initial (Design)	Final (Handover)	Post -occupancy

3.2 Benchmarking of specific issues

The table below shows the number of good practice measures implemented in the assessment against each environmental issue relative to the number of good practice measures applicable to the project scope (i.e. the maximum number which could have been implemented).

Environmental issues	Good practice measures			
	Total in pool	In scope	Pilot score	% achieved
Energy	17	10	4	40%
Waste	13	4	0	0%
Water	14	0	0	
Materials	24	19	2	11%
Pollution	8	6	1	17%
Wellbeing	14	7	2	29%
Transport	3	0	0	
Other	4	0	0	
Total	97	46	9	20%

4 Feedback

4.1 Notable environmental achievements

The key features of the fit-out which deliver environmental benefits are as follows:

- The specification of insulants with zero ODP and GWP potentials;
- The installation of occupant controlled blinds;
- The installation of an energy efficient lighting system.

4.2 Opportunities for future improvement

Key areas where the fit-out could have been improved are as follows:

- Demolition and waste – the production of demolition and waste management plans, and placing a requirement on the waste contractor to recycle all waste rather than send it to landfill
- Materials selection – great environmental gain is achievable through consideration of the following in the selection of materials to be incorporated as part of the fit-out:
 - Life cycle impact / Green Guide rating;
 - Recycled content.
- The specification of energy efficient lamps

5 Benchmark scoping, scoring and rating

5.1 Scoping and Credit Selection

Based on review of information received and scope of the fit-out a tailored list of applicable Credits to assess [Pilot 2] were selected.

The selection process can be summarised as follows:

- Start with all Core Credits which are expected to be applicable to most fit-outs of any type;
- Add all additional Default Credits, which are expected to be applicable to most fit-outs of that particular type;
- Add any remaining Pool Credits that are judged to be applicable;
- Remove any Default Credits that are judged not to be applicable. (With the restriction that the total number of credits must be greater than the number of Core + Default Credits. This is to ensure a minimum number of credits in assessments for a given fit-out type. There might also be a limit on the number of Default Credits that can be removed to ensure a certain level of comparability between assessments.

The credit selection process leading to scoring is summarised in figure 5 below.

Annex A provides a short list of credits applicable to [Pilot 2].

5.2 Assessment

Using the data received from the design team, information gathered from the design team meetings and observation made during the site visit credits were awarded where good practice was observed in terms of the following aspects of the fit-out:

- Products selected and incorporated into the fit-out design;
- Equipment selected and incorporated into the fit-out; and
- Measures adopted and incorporated into either the construction or for use in the operational phase.

5.3 Scoring

The diagrams on the following pages illustrate the scoring and rating process.

NOTE: The alpha numeric codes in the boxes in the diagrams relate to the ID numbers for good practice measures, which can be found in Annex B and Annex C.

1. Start with the full list of good practice measures applicable to office fit-outs...

Complete pool of good practice credits

D1	D2	D3	D4	D5	D6	D7	D8	D9	D10
D11	D12	D13	D14	D15	D16	D17	D18	D19	D20
D21	D22	D23	D24	D25	D26	D27	D28	D29	D30
D31	D32	D33	D34	D35	D36	D37	D38	D39	D40
D41	D42	D43	D44	D45	D46	D47	D48	D49	D50
D51	D52	D53	D54	D55	D56	M1	M2	M3	M4
M5	M6	M7	M8	M9	M10	M11	M12	M13	M14
M15	M16	M17	M18	M19	M20	E1	E2	E3	E4
E5	E6	E7	E8	E9	E10	E11	E12	E13	E14
E15	E16	E17	E18	P1	P2	P3			

The pool has 97 credits



2. Determine which are applicable to the scope of the fit-out being assessed...

Fit-out of office space between tenancies

D1	D2	D3	D4	D5	D6	D7	D8	D9	D10
D11	D12	D13	D14	D15	D16	D17	D18	D19	D20
D21	D22	D23	D24	D25	D26	D27	D28	D29	D30
D31	D32	D33	D34	D35	D36	D37	D38	D39	D40
D41	D42	D43	D44	D45	D46	D47	D48	D49	D50
D51	D52	D53	D54	D55	D56	M1	M2	M3	M4
M5	M6	M7	M8	M9	M10	M11	M12	M13	M14
M15	M16	M17	M18	M19	M20	E1	E2	E3	E4
E5	E6	E7	E8	E9	E10	E11	E12	E13	E14
E15	E16	E17	E18	P1	P2	P3			

This specific Pilot assessment has 46 Available Credits

- D3** pool credits included in this assessment
- D1 pool credits not included during scoping



3. This gives the shortlist of available credits (see Annex B)...

Fit-out of office space between tenancies

Available Credits

D2	D3	D5	D6	D8	D10	D11	D16	D17	D19
D20	D22	D23	D24	D27	D28	D29	D30	D31	D32
D33	D37	D47	D48	D56	M3	M5	M6	M7	M8
M9	M11	M11	M12	M13	M15	M16	M17	M18	M19
E4	E5	E6	E7	E8	P2				

This specific Pilot assessment has 46 Available Credits

4. Identify the gateway credits. A minimum number of gateways will be needed to achieve each level of performance rating...

Fit-out of office space between tenancies

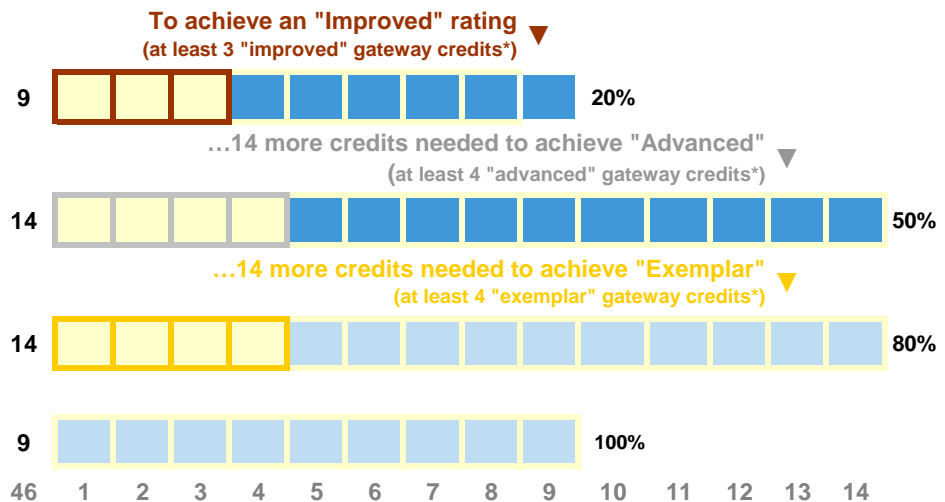
Gateway & Other Credits

D2	D3	D5	D6	D8	D10	D11	D16	D17	D19
D20	D22	D23	D24	D27	D28	D29	D30	D31	D32
D33	D37	D47	D48	D56	M3	M5	M6	M7	M8
M9	M11	M11	M12	M13	M15	M16	M17	M18	M19
E4	E5	E6	E7	E8	P2				

in this example there are 9 improved, 6 advanced and 13 exemplar gateway credits

- 9** improved gateway credits
- 6** advanced gateway credits
- 13** exemplar gateway credits
- 18** other credits

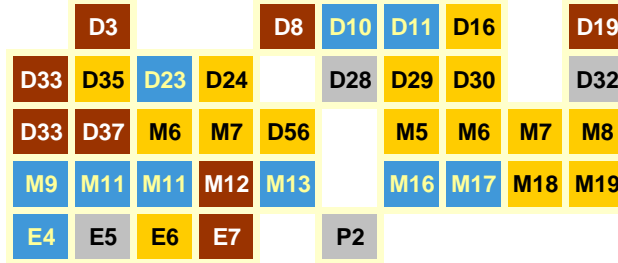
5. Determine the number of gateway and other credits needed to achieve each rating. The boundaries are based on a percentage of the available credits...



6. Assess and score the fit-out based on information collected during the project and determine the rating achieved...

Fit-out of office space between tenancies

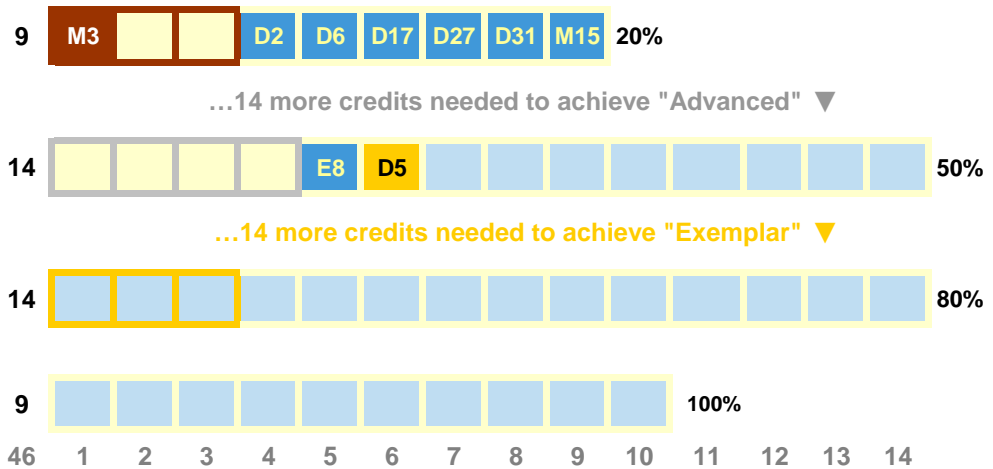
[Pilot 2] actual scoring



46 available credits including: 9 improved, 6 advanced and 13 exemplar gateway credits

- 1 improved gateway credits
 - 0 advanced gateway credits
 - 1 exemplar gateway credits
 - 7 other credits
- 9

"Improved" rating NOT achieved ▼



* freedom to substitute "better" gateway credits to be decided later (currently allowed)

[Pilot 2]	Good practice measures			
	Total in pool	In scope	Pilot score	% achieved
Total	97	46	9	20%
Rating	T – Typical			

NB. There are likely to be changes to the benchmark scoring, rating and labelling systems as a result of the pilots. All presentation formats, rating boundaries, and results are provisional. Pilot ratings are not intended to be comparable with ratings under the final benchmarking system adopted. Stakeholders should take account of the aims of the pilot process when interpreting these benchmark results.

6 Pilot 2 – Lessons Learnt

6.1 General Points

The following lessons were learnt from this second pilot project which can be used to inform and improve the environmental benchmarking methodology and the future pilots:

1. Hold meeting earlier in process to inform design – Providing input into the design process is within the scope of the pilots, but in this case Faber Maunsell’s involvement started a little too late to influence the design. It would be of benefit on future projects to undertake an early meeting with the design team to highlight areas where their specification could be altered to achieve environmental improvements;
2. Undertake early kick-off meeting and development of information checklist - There would be considerable benefits to undertaking an early kick-off meeting with the design team. At this meeting the information requirements for the project could have been discussed and timescale for delivery of data set. As results of this pilot we recommend that a checklist of information requirements is prepared and distributed to the team at this first kick-off meeting. Responsibility and timescales for delivery could then be set to ensure a smoother transfer of information.
3. Waste Management – There was no documented evidence of waste management, although some segregation of waste was observed during the site visit, and it was stated that Skansen always recycles metal from the construction waste as standard practice. Skansen could develop a standard waste management strategy that would be applicable to all sites and this could form part of their contract with the waste contractor. This could include the requirement to recycle construction waste rather than send to land fill.

A demolition salvage plan should also be written prior to the start of demolition
4. Specification of products from the Energy Technology List (ETL) - The Government provides enhanced capital allowances for products that they deem be energy efficient. Of the elements assessed in this pilot two components were assessed as to whether they were on the ETL, as a means of demonstrating that they are energy efficient. These were: 4-pipe fan coil units for suite 1 and the lighting system, lamps, fittings and controls. At the design stage it may be possible to specify that the products selected will be from the ETL list.

This is the end of the main report. The following annexes set out supporting information generated during the scoping study.

Annex A Scope of [Pilot 2] fit-out

The fit out categories and definitions from the British Council for Offices Office Fit-out Guide were used as the basis for scoping. This defines:

- Shell and Core,
- Category A, and
- Category B works.

The scope of the benchmarking tool is intended to correspond to Category B or “Bespoke fit-out works”. The following diagram shows the scope of [Pilot 2] fit-out:

		Pilot 2: [Corporate Occupier 2]				
		Suite 1			Suite 2	
Fit-out item ID	Fit-out item	Fit out by:	Tenant		Tenant	
		Type of fit-out:	Change of tenant	notes	Change of tenant	notes
A1	finishes to cores		n		n	
A2	fully fitted out WCs		n		n	
A3	suspended ceilings		n		y	
A4	raised floors		n		y	
A5	office carpet		n		y	
A6	basic mechanical and electrical services		n		n	
A7	distributed power to each floor (but not to floor boxes/grommets)		n		n	
A8	functional life safety infrastructure		n		n	
B1	upgrade to core finishes		n		n	
B2	enhanced WC provision		n		n	
B3	suspended ceiling upgrades/modifications and special area fitting out		n		n	
B4	adaptation of raised floor systems		y		y	
B5	office carpet		y		y	
B6	furniture fixtures		y		y	
B7	installation of internal partitioning		y		y	
B8	office equipment		n		n	
B9	floor finishes		n		n	
B10	decoration and branding		y		y	
B11	mechanical and electrical services tailoring and upgrades		y		y	
B12	installation of below-floor power and data cabling to user accessible termination		y		y	
B13	other systems, plant and equipment		y		y	
B14	adptation of life safety systems		n		n	
B15	installation of safety signage systems as required		y		y	

Annex B Good Practice measures applicable to [Pilot 2] fit-out

The following good practice measures were judged to be applicable to [Pilot 2] fit-out and form the basis for the benchmarking. This is a subset of measures relevant to office fit-out. The full list is included in Annex C.

This table shows the measures and how they were assessed.

Measure ID	Good practice measure	Implemented?	Suite 01 assessment comment Cat A & B	Suite 02 assessment comment CAT B
D2	Tenancy Sub-Metering	Y	Section 1.0 , in Mittal Steel Electrical Spec, May 2007.	as for suite 1
D3		N		
D5	High Frequency Lighting*	Y	see luminaire schedule.xls - all luminaires have HF control gear	as for suite 1
D6	Lighting Zones / Lighting controllability*	Y	Cellular Offices: The Services Contractor shall supply and install new luminaires within the new cellular offices, as shown on the tender drawings. All rooms shall be controlled from PIR sensors with a manual override on/off wall switch. [Electrical specification, section 2] The lighting installation is controlled via a programmable control system	as for suite 1 (although most of the controls are already existing)
D8	HVAC system (efficiency)	N	new 4-pipe fan coil units being provided (mechanical specification) but insufficient info provided to be able to assess them on the ETL	not applicable as office already fitted out
D10	Demolition salvage plan prepared prior to site work	N	no information provided	
D11	Waste minimisation study undertaken	N	no information provided	
D16	Use of recycled materials	N	no information supplied	
D17	Insulant ODP & GWP (CFC and HCFC free insulants)	Y	Section 2.3.9.9, page 31 in Mittal Steel Mechanical Spec 10 May 2007, states that all insulation for mechanical services will have a GWP of less than 5. Section 2.3.9.10 states that it will also be free of CFC and HCFC	

Measure ID	Good practice measure	Implemented?	Suite 01 assessment comment Cat A & B	Suite 02 assessment comment CAT B
D19	Use of refrigerants with a GWP of less than 5 or no refrigerants	N	no information supplied: note this credit may not be in scope if the chilled water for the air con units is provided from central chillers, but this is not clear from the information provided	
D20	All refrigerants to have an ODP of zero or no refrigerants	N		
D22	Automatic refrigerant leak detection or no refrigerants	N	as above	
D23	Refrigerant Recovery	N	as above	
D24	Noise generation (e.g. plant)	N	as above	
D27	Daylight Glare Control	Y	there are occupant controllable blinds - see site visit notes	as for suite 1
D28	Electric Lighting Design / Lighting Levels	N	no information supplied	
D29	Thermal Zoning / Room temperature control	N	no information supplied	
D30	Air Supply Ductwork	N	no information supplied	
D31	Tenant Exhaust (e.g. for printing / photocopy rooms)	Y	see Section 4.2.17.4 of mechanical specification	
D32	Thermal comfort assessment / modelling undertaken	N	no information supplied	
D33	Volatile Organic Compounds	N	no information supplied	
D37	Ventilation Rates / Air Change Effectiveness	N	insufficient information	

Measure ID	Good practice measure	Implemented?	Suite 01 assessment comment Cat A & B	Suite 02 assessment comment CAT B
D47	Materials Specification (based on Green guide for materials specifications LCA)	N		
D48	Sustainable Timber	N	no information supplied	
D56	Ceilings	N	no information supplied	
M3	insulation	Y	Section 2.3.9.9, page 31 in Mittal Steel Mechanical Spec 10 May 2007, states that all insulation for mechanical services will have a GWP of less than 5. Section 2.3.9.10 states that it will also be free of CFC and HCFC	
M5	hard floor coverings	N	no information supplied	
M6	soft floor covering - carpet	N	no information supplied	
M7	sub structural floor systems - raised floor	N	no information supplied	
M8	glazed partitions	N	no information supplied	
M9	paints	N	no information supplied	
M11	direct finished ceiling	N	no information supplied	
M11	suspended ceiling systems	N	no information supplied	
M12	chipboard, hardwood, MDF, plywood, softwood	N	no information supplied	
M13	hard wall covering	N	no information supplied	
M15	blinds/curtains	Y	At the site visit 30/5/07 it was confirmed that occupant controlled blinds would be fitted	
M16	doors	N	no information supplied	
M17	kitchen cupboards & worktops	N	no information supplied	
M18	desking	N	no information supplied	
M19	partitions	N	no information supplied	

Measure ID	Good practice measure	Implemented?	Suite 01 assessment comment Cat A & B	Suite 02 assessment comment CAT B
E4	HVAC zone controls	N	no information supplied	
E5	lighting - controls	N	See luminaire schedule.xls. The lighting comes from the following manufacturers: Riegens, Concord, MID, Se'lux, Fagerhult and Genesis. Of these manufacturers, the following are on the ETL website: Riegens, Concord, Fagerhult. As they are not all on the website this credit cannot be awarded	
E6	lighting - fittings	N	See luminaire schedule.xls. The lighting comes from the following manufacturers: Riegens, Concord, MID, Se'lux, Fagerhult and Genesis. Of these manufacturers, the following are on the ETL website: Riegens, Concord, Fagerhult. As they are not all on the website this credit cannot be awarded	
E7	lighting - lamps	N	See luminaire schedule.xls. The lighting comes from the following manufacturers: Osram, Concord: marlin, MID, Se'lux, Fagerhult and Genesis. Of these manufacturers, the following are on the ETL website: Concord, Fagerhult. As they are not all on the website this credit cannot be awarded	
E8	pipework insulation	Y	Section 2.3.5.1, page 29 in Mittal Steel Mechanical Spec 10 May 2007 list the BS standards documents that will be followed for insulation. This lists BS5422 (2001).	
P2	Waste quantity recycled	N	no information supplied	

Annex C Good Practice Measures Summary Tables

The following table lists all the environmental good practice measures currently considered applicable to the full range of office fit-out types. A subset of these measures will be applicable to any one fit-out project. There are four types of good practice measure:

1. Design and construction – process, design, and performance specification measures;
2. Materials – measures relating to product selection covering embodied lifetime environmental impacts of materials;
3. Equipment – measures relating to product selection covering in-use environmental impacts, which are usually energy and water use;
4. Performance – actual observable or recorded environmental performance outcomes (energy & water used, waste recycled)

The spreadsheet used as part of the benchmarking process includes notes of the evidence collected, details of the assessment criteria applied and also shows for each good practice measure whether it is a:

1. Quick win,
2. High impact credit,
3. Default credit (for each possible fit out type).

Complete "pool" of Good Practice Measures for office fit-out (061214)			
Credit ID	Issue (short)	Good practice measure	Type of Measure
D1	Energy	Electrical Sub-Metering	Design & construction
D2	Energy	Tenancy Sub-Metering	Design & construction
D3	Energy	Efficient lighting system / Lighting Power Density	Design & construction
D4	Energy	Daylighting*	Design & construction
D5	Energy	High Frequency Lighting*	Design & construction
D6	Energy	Lighting Zones / Lighting controllability*	Design & construction
D7	Energy	Water heating system (efficiency)	Design & construction
D8	Energy	HVAC system (efficiency)	Design & construction
D9	Waste	Recyclable Waste Storage	Design & construction

Complete "pool" of Good Practice Measures for office fit-out (061214)			
Credit ID	Issue (short)	Good practice measure	Type of Measure
D10	Waste	Demolition salvage plan prepared prior to site work	Design & construction
D11	Waste	Waste minimisation study undertaken	Design & construction
D12	Waste	Site Waste Management Plans SWMPs	Design & construction
D13	Water	Sanitary Supply Shut Off	Design & construction
D14	Water	Major Leak Detection	Design & construction
D15	Water	Fire System Water Consumption	Design & construction
D16	Materials	Use of recycled materials	Design & construction
D17	Pollution	Insulant ODP & GWP (CFC and HCFC free insulants)	Design & construction
D18	Pollution	Avoidance of CFCs and halons	Design & construction
D19	Pollution	Use of refrigerants with a GWP of less than 5 or no refrigerants	Design & construction
D20	Pollution	All refrigerants to have an ODP of zero or no refrigerants	Design & construction
D21	Pollution	Reduction of Light Pollution	Design & construction
D22	Pollution	Automatic refrigerant leak detection or no refrigerants	Design & construction
D23	Pollution	Refrigerant Recovery	Design & construction
D24	Pollution	Noise generation (e.g. plant)	Design & construction
D25	Wellbeing	DHW Legionellosis	Design & construction
D26	Wellbeing	View out & view of the sky	Design & construction
D27	Wellbeing	Daylight Glare Control	Design & construction
D28	Wellbeing	Electric Lighting Design / Lighting Levels	Design & construction
D29	Wellbeing	Thermal Zoning / Room temperature control	Design & construction
D30	Wellbeing	Air Supply Ductwork	Design & construction
D31	Wellbeing	Tenant Exhaust (e.g. for printing / photocopy rooms)	Design & construction
D32	Wellbeing	Thermal comfort assessment / modelling undertaken	Design & construction
D33	Materials	Volatile Organic Compounds	Design & construction

Complete "pool" of Good Practice Measures for office fit-out (061214)			
Credit ID	Issue (short)	Good practice measure	Type of Measure
D34	Wellbeing	Avoidance of legionella from cooling towers	Design & construction
D35	Wellbeing	All fresh air filtered to grade EU5 / Internal Air Pollution	Design & construction
D36	Wellbeing	Indoor Noise / Sound insulation / Sound absorption	Design & construction
D37	Wellbeing	Ventilation Rates / Air Change Effectiveness	Design & construction
D38	Wellbeing	Carbon Dioxide Monitoring and Control	Design & construction
D39	Transport	Cyclist Facilities: sheltered, secure locking points	Design & construction
D40	Transport	Cyclist Facilities: showers	Design & construction
D41	Transport	Cyclist Facilities: lockers	Design & construction
D42	Wellbeing	Indoor Plants	Design & construction
D43	Other	Considerate Constructor Scheme CCS (voluntary)	Design & construction
D44	Other	Tenancy Fit-out Commissioning / Commissioning Clauses / Commissioning Agent	Design & construction
D45	Other	Commissioning - Tenancy Fit-out Tuning / Seasonal Commissioning	Design & construction
D46	Other	Tenant Guide / Building User Guide	Design & construction
D47	Materials	Materials Specification (based on Green guide for materials specifications LCA)	Design & construction
D48	Materials	Sustainable Timber	Design & construction
D49	Waste	Floor Finishes	Design & construction
D50	Waste	Workstations	Design & construction
D51	Waste	Walls and Partitions	Design & construction
D52	Waste	Chairs	Design & construction
D53	Waste	Tables	Design & construction
D54	Waste	Storage	Design & construction
D55	Waste	Joinery	Design & construction
D56	Waste	Ceilings	Design & construction
M1	Materials	blocks	Materials

Complete "pool" of Good Practice Measures for office fit-out (061214)			
Credit ID	Issue (short)	Good practice measure	Type of Measure
M2	Materials	bricks	Materials
M3	Materials	insulation	Materials
M4	Materials	screed	Materials
M5	Materials	hard floor coverings	Materials
M6	Materials	soft floor covering - carpet	Materials
M7	Materials	substructural floor systems - raised floor	Materials
M8	Materials	glazed partitions	Materials
M9	Materials	paints	Materials
M10	Materials	polishes, stains & varnishes	Materials
M11	Materials	direct finished ceiling	Materials
M11	Materials	suspended ceiling systems	Materials
M12	Materials	chipboard, hardwood, MDF, plywood, softwood	Materials
M13	Materials	hard wallcovering	Materials
M14	Materials	wallpaper	Materials
M15	Materials	blinds/curtains	Materials
M16	Materials	doors	Materials
M17	Materials	kitchen cupboards & worktops	Materials
M18	Materials	desking	Materials
M19	Materials	partitions	Materials
M20	Materials	storage	Materials
E1	Energy	automatic monitoring and targeting	Equipment
E2	Energy	boilers - condensing economisers	Equipment
E2	Energy	boilers - flue gas economisers	Equipment
E2	Energy	boilers - gas fired condensing water heaters	Equipment
E2	Energy	boilers - heat recovery from boiler blowdown	Equipment

Complete "pool" of Good Practice Measures for office fit-out (061214)			
Credit ID	Issue (short)	Good practice measure	Type of Measure
E2	Energy	boilers - hot water boilers up to 400kW	Equipment
E2	Energy	boilers - optimising controllers	Equipment
E2	Energy	boilers - retrofit burner control systems	Equipment
E2	Energy	boilers - sequence controls	Equipment
E3	Energy	heat pumps - air source: gas engine driven split & multisplit (incl VRF)	Equipment
E3	Energy	heat pumps - air source: single duct	Equipment
E3	Energy	heat pumps - air source: packaged "double duct"	Equipment
E3	Energy	heat pumps - air source: split and multisplit (incl VRF)	Equipment
E4	Energy	HVAC zone controls	Equipment
E5	Energy	lighting - controls	Equipment
E6	Energy	lighting - fittings	Equipment
E7	Energy	lighting - lamps	Equipment
E8	Energy	pipework insulation	Equipment
E9	Water	flow controllers - flow restrictors	Equipment
E9	Water	flow controllers - control devices	Equipment
E10	Water	meters - flow meters	Equipment
E11	Water	meters - water management software	Equipment
E12	Water	leakage detection - data loggers	Equipment
E13	Water	leakage detection - leak warning devices	Equipment
E14	Water	leakage detection - pressure reducing valve controller	Equipment
E15	Water	efficient toilets - low flush toilets	Equipment
E16	Water	efficient toilets - urinal with integral controls	Equipment
E16	Water	efficient toilets - urinal controls	Equipment
E17	Water	efficient taps - spray	Equipment
E18	Water	efficient taps - automatic shut off	Equipment

Complete "pool" of Good Practice Measures for office fit-out (061214)			
Credit ID	Issue (short)	Good practice measure	Type of Measure
E18	Water	efficient taps - electromagnetically operated	Equipment
P1	Energy	Energy in use / CO2 Emissions	Performance
P2	Waste	Waste quantity recycled	Performance
P3	Water	Water Consumption (including water efficiency devices / technologies and non-potable water)	Performance

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[Corporate Occupier 2] offices fit-out – ‘Ska’ Rating & Benchmarking Pilot

Rev No	Comments	Date
1	First Draft	7/01/2008
1.2	Final Pilot Report	11/2/08
2	Public Pilot Report	7/3/08

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