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# Recycling, Waste Management, and Indoor Environment Report

**Szencorp Building**  
**40 Albert Road**  
**July 2009**

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### APPENDIX ONE – WASTE & RECYCLING AUDIT DATA

### APPENDIX TWO – NABERS INDOOR ENVIRONMENT QUANTITATIVE AUDIT

This report is prepared solely for the use of Szencorp. While all care has been taken in its preparation, the content of this report is based on information provided to Great Forest Australia Pty Ltd by other parties. For this reason, Great Forest Australia Pty Ltd cannot guarantee the validity or accuracy of information or recommendations herein, and, although it acts in all good faith, Great Forest Australia Pty Ltd cannot in any way be held to be liable for any action arising from this report.

## 1. EXECUTIVE SUMMARY

Comprehensive audits of landfill waste and recycling generated at the Szencorp Building were carried out by Great Forest Australia over two periods, 20th April to 1st May 2009, and 1st to 15th of June 2009.

The audits were conducted in accordance with the NABERS methodology and involved weighing and measuring the following waste streams:

- Office Paper
- Fully Commingled Recycling (including glass, metal, and plastic containers, liquid paperboard, and paper)
- Food Organics
- Cardboard

The purpose of the audit was to evaluate the Szencorp Building's waste management and recycling systems as part of a full environmental review of the building, to assess any areas of the current program that could be improved, and to collect data for a NABERS Waste rating application. For the NABERS rating, results from the second audit only were used.

A total of 124.42 kg of waste from building tenants was recorded over the 10 days of the audit period, comprising:

- 95.56 kg of materials separated for recycling (76.34% of all waste)
- 28.86 kg of materials sent to landfill (23.66% of all waste)

Of the material being collected for recycling, the average contamination rate was less than 1%, which is an excellent result, indicative of highly effective recycling systems in place throughout the building.

Per capita waste generation rates, based on the building's population of 41 occupants at the time of the audit, were as follows:

- Total Materials Generation (landfill + recycling) = 303.46 grams/person per day
- Recycle/Reuse = 231.66 grams/person per day

Again, these results indicate a relatively high level of environmental awareness by building occupants, and sound recycling/reuse systems in place.

## 2. AUDIT METHODOLOGY

Building waste was audited in the following way:

1. The four different waste streams detailed above were weighed before being placed in bins for disposal
2. For the three recycling streams, contaminants (as defined in writing by the recycling contractor) were removed and weighed
3. Data was recorded and overall recycling rates and material generation was calculated (Appendix 1)

The building's cleaner assisted our auditor by ensuring all waste was separated by stream and the bags of material tagged accordingly (i.e. by waste stream and date).

For the purposes of the audit, the categories measured were defined as follows:

Paper

White office paper including copy paper and envelopes, but excluding other paper products such as those detailed under Fully Commingled Recycling

Fully Commingled Recycling

Aluminium and steel cans, glass bottles, plastics bottles and containers numbered 1-7, milk and juice cartons, and lower grades of paper such as tissues, magazines, phone books, newspapers, and paper coffee cups and lids

Food Organics

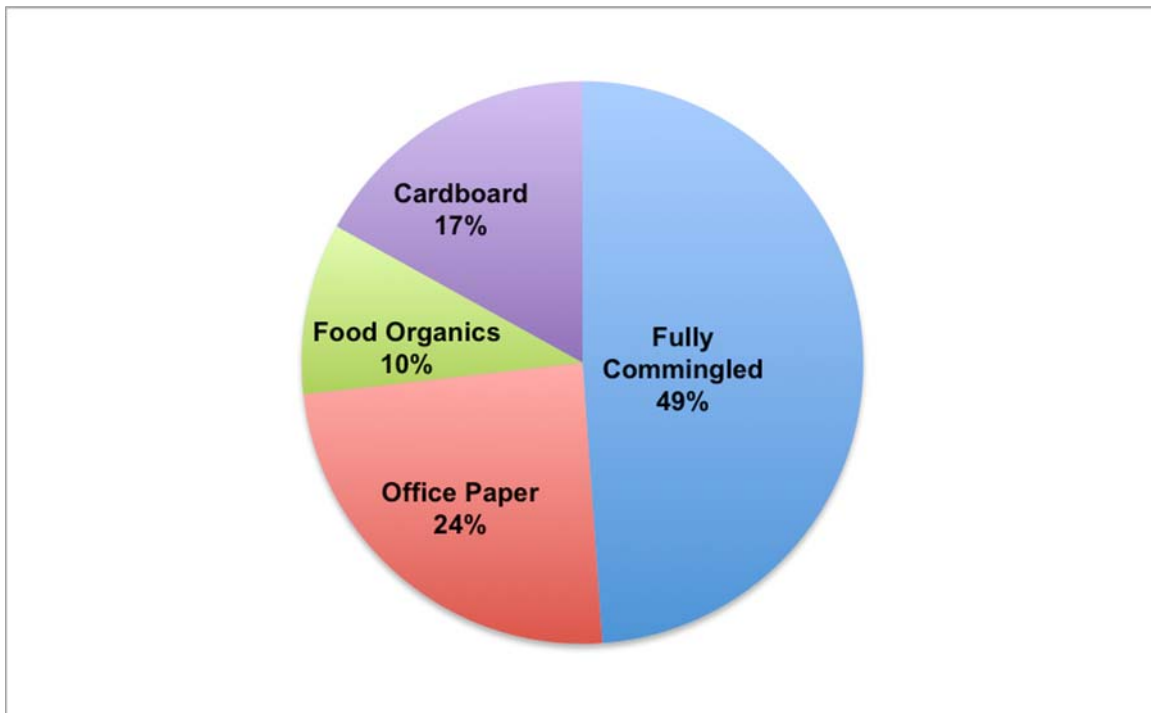
Food scraps, tea bags, coffee grounds, etc.

Landfill Stream

Styrofoam, plastic bags, shrink wrap, plastic strapping, confectionery and take-away food packaging, aluminium foil, plastic/waxed food wrap, broken glassware/crockery

### 3. AUDIT RESULTS

During the audit period, 95.56 kg of material was collected for recycling, and 28.86 kg of material waste was sent to landfill, resulting in an overall recycling rate of 76.34%. The chart below shows the relative proportions, by weight, of the recyclable waste stream:



Analysis

Little or no contamination was recorded in any of the building's recycling streams, other than some take-away packaging in the food organics stream (in the first audit only). Based on data provided by KS Environmental, the maximum allowable rates of contamination for each stream are as follows:

Material	Tolerance
Paper, Cardboard	<3%
Commingled	<5%
Organics	<5%

#### 4. NABERS WASTE RATING

Based on the result of the second audit, the building would receive a NABERS Base Building Waste rating of 4 stars.

#### 5. WASTE MANAGEMENT COSTS

The table below outlines the building's current waste management and recycling costs:

Service	Equipment	Schedule	\$/Unit	Monthly Cost
Landfill Waste	2 x 240-litre bins	Weekly	\$8.99	\$71.92
Fully Commingled Recycling	2 x 240-litre bins	Weekly	\$7.35	\$58.80
Paper Recycling	2 x 240-litre bins	Weekly	\$7.35	\$58.80
Organic Recycling	1 x 240-litre bin	Weekly	\$9.64	\$38.56
Cardboard	Bale & frame	Weekly	\$13.10	\$52.40
Bin Rental	7 x 240-litre bins	Monthly	\$3.26	\$22.82
<b>TOTAL CURRENT MONTHLY COSTS:</b>				<b>\$303.30</b>
<b>TOTAL CURRENT ANNUAL COSTS:</b>				<b>\$3,639.60</b>

These costs are quite high for a building of this size, which reflects the comparatively expensive prices for food organics collection relative to landfill disposal, and the level of service provided by KS Environmental. Cutting back cardboard collections to fortnightly, as the cardboard bale was less than half full at the end of each week of the waste audit, would reduce these costs by around \$300 per annum.

#### 6. IMPROVEMENT RECOMMENDATIONS

Although the building's current resource recovery programs are functioning well, we recommend taking the following actions to further reduce waste and increase the proportion of material being recycled at the Szencorp Building:

1. Arrange for regular (e.g. quarterly) third party waste audits to be carried out and provide feedback to stakeholders on the results, and also thanking them for their contribution to the program's success
2. Send regular updates and communications to tenants' staff to ensure that all building occupants are aware of which materials can and cannot be recycled
3. Periodically review signage in office areas to ensure it accurately reflects the actual waste streams being separated
4. Encourage building tenants to further minimise waste and reduce environmental impacts through such initiatives as:
  - Printing documents only when necessary and/or printing double-sided
  - Eliminating subscriptions to magazines that are not being read
  - Switching to re-usable cups, food containers, and cutlery
  - Establishing collections for batteries, electrical/electronic items etc.
  - Purchasing recycled content office paper and stationery
  - Reusing office supplies where possible in preference to purchasing them

## **7. INDOOR ENVIRONMENT ISSUES**

The following recommendations are based on our observations during the NABERS Indoor Environment (IE) audit, discussions with Healthy Buildings International (HBI) and our knowledge of the building and its Building Management System (BMS). HBI's IE Quantitative Testing Report can be found in Appendix 2.

The BMS was not operational at the time of the IE audit and we believe that this was partly responsible for the building receiving a lower rating than expected. The following recommendations and comments are intended to address some of the issues uncovered during the audit, in particular:

### **Thermal Comfort**

One of the findings of the IE audit was that staff on Level 1 were manually overriding the air conditioning system. This may have contributed to a relatively low rating for the Thermal Comfort section of the IE rating. Using the BMS to control air temperature will result in a more stable average temperature throughout the building.

### **Air Quality**

The IE audit found slightly elevated particulate (dust) levels, which could indicate that unfiltered air is entering the building. There may have been a dust-creating process taking place outside the building at the time of the audit. Cleaning outside air filters should be done on a regular basis and dampers should be used to regulate outside airflows and ensure correct pressurization of the building. These processes can also be controlled through the BMS.

### **Lighting**

Although the building scored 13 out of a possible 15 points in the Lighting category of the Occupant Satisfaction Survey, it received only 19 points out of a possible 30 in the quantitative rating obtained through the on-site audit.

This was due to the building's indoor lighting levels not meeting the required standard (AS1680) in the areas surveyed. In many cases overhead lights were turned off and staff relied on natural light: the occupancy survey showed that 66 percent of staff were satisfied with the existing levels of natural light.

These results show an apparent conflict between energy saving practices – i.e. switching off lights when natural lighting is adequate for work tasks – and maintaining defined levels of light intensity for the sake of gaining a higher NABERS quantitative rating.

### **Acoustic Comfort**

The building scored 14 out of 15 points in this category in the Occupant Satisfaction Survey, but only 22 out of 30 in the quantitative rating, again indicating an apparent discrepancy between reported and 'ideal' indoor comfort levels in the NABERS IE rating scheme.

### **Recommendations**

- Restore BMS to full operational status to control thermal comfort and outside air intake
- Control or prevent staff from manually overriding the air conditioning system
- Ensure air filters are being cleaned regularly
- Address inconsistencies within NABERS rating scheme with NSW DECC

## APPENDIX ONE – WASTE & RECYCLING AUDIT DATA

Materials Generated – Landfill & Recycling Streams (kg/day)								
Audit Day	Date	Landfill	Commingled Recycling	Paper Recycling	Organics Recycling	Cardboard Recycling	Gross Recycling	Total Materials
1	1/06/09	3.94	10.10	4.18	1.30		15.58	19.52
2	2/06/09	1.94	2.22	1.04	0.56		3.82	5.76
3	3/06/09	2.48	5.24	1.08	0.40		6.72	9.20
4	4/06/09	4.68	3.28	2.68	0.94		6.90	11.58
5	5/06/09	3.86	7.30	4.40	0.62		12.32	16.18
6	9/06/09	3.78	2.94	1.86	1.46		6.26	10.04
7	10/06/09	1.48	1.80	2.70	1.06		5.56	7.04
8	11/06/09	1.86	2.78	1.66	1.06		5.50	7.36
9	12/06/09	2.66	9.12	2.34	1.44		12.90	15.56
10	15/06/09	2.18	1.92	1.30	0.58	16.20*	20.00	22.18
<b>TOTAL</b>		<b>28.86</b>	<b>46.70</b>	<b>23.24</b>	<b>9.42</b>	<b>16.20</b>	<b>95.56</b>	<b>124.42</b>

\* 10 days of cardboard recycling was measured once at the end of the audit period

Contamination – Recycling Streams (kg and %)										
Audit Day	Date	Commingled Contam.		Paper Contam.		Organics Contam.		Cardboard Contam.		Total Contam. kg
		kg	%	kg	%	kg	%	kg	%	
1	1/06/09	0.12	1.19%	0.01	0.14%	0.00	0.00%	0.00	0.00%	0.13
2	2/06/09	0.00	0.18%	0.01	0.48%	0.00	0.00%	0.00	0.00%	0.01
3	3/06/09	0.04	0.76%	0.02	1.85%	0.00	0.00%	0.00	0.00%	0.06
4	4/06/09	0.01	0.15%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.01
5	5/06/09	0.04	0.55%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.04
6	9/06/09	0.09	2.89%	0.01	0.27%	0.00	0.00%	0.00	0.00%	0.09
7	10/06/09	0.01	0.28%	0.01	0.19%	0.02	1.89%	0.00	0.00%	0.03
8	11/06/09	0.04	1.44%	0.02	1.20%	0.02	1.89%	0.00	0.00%	0.08
9	12/06/09	0.04	0.44%	0.06	2.56%	0.00	0.00%	0.00	0.00%	0.10
10	15/06/09	0.01	0.52%	0.03	2.31%	0.00	0.00%	0.00	0.00%	0.04
<b>TOTAL</b>		<b>0.39</b>	<b>0.84%</b>	<b>0.15</b>	<b>0.90%</b>	<b>0.04</b>	<b>0.38%</b>	<b>0.00</b>	<b>0%</b>	<b>0.58</b>

**TOTAL MATERIALS GENERATED** 124.42 kg

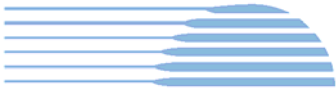
**TOTAL MATERIALS (GRAMS/PERSON/DAY)** 303.46 kg

**MATERIALS RECYCLED/REUSED** 231.66 kg

**RECYCLING RATE** 76.34%

(Gross recycling minus contamination, divided by total materials generated)

## APPENDIX TWO – NABERS INDOOR ENVIRONMENT QUANTITATIVE AUDIT



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**40 ALBERT RD  
MELBOURNE VIC**

**GREAT FOREST AUSTRALIA  
NABERS QUANTITATIVE  
TESTING REPORT  
APRIL 2009**

Date April 2009

Client Great Forest Australia

## EXECUTIVE SUMMARY

Building 40 Albert Road

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Healthy Buildings International Pty Ltd was commissioned by **Great Forest Australia** to monitor and report on Indoor Air Quality Parameters of **40 Albert Road, Melbourne VIC**, during the month of **April 2009**.

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**1.0 INTRODUCTION**

Healthy Buildings International Pty Ltd was commissioned by **Great Forest Australia** to monitor and report on Indoor Air Quality Parameters at **40 Albert Road, Melbourne VIC**, during the month of **April 2009**.

The objective of the inspection was to measure the amounts of particulate, gaseous and microbial contamination present within the occupied areas. This was conducted as part of the National Australian Built Environment Rating System (NABERS) scheme for indoor air quality.

Samples collected were submitted for analysis to laboratories staffed by technicians trained and experienced in the required procedures. Analytical procedures were carried out in accordance with the National Association of Testing Authorities (NATA) of Australia.

**2.0 ENVIRONMENTAL TESTING**

This section contains descriptions, analysis and results of tests carried out in the occupied areas and the air supply systems.

Laboratory analysis results appear in Section 3, Laboratory Analysis.

**2.1 Airborne Particulate**

**OBJECTIVE** To assess the concentrations of respirable sized particles (RSP) in the occupied areas.

**METHOD** Particulate Matter – PM10  
 Particulate Size Range 0.01 -10 $\mu$ m  
 Measurement Range 0.01 – 100mg/m<sup>3</sup>  
 Resolution  $\pm$ 1%

- PM10 as mg/m<sup>3</sup> shall be recorded
- For the whole building rating tools PM10 is measured at a height of 1.1 metres above the floor

**RESULTS**

Sample		Particle weight ( $\mu$ g/m <sup>3</sup> )	
No	Location	Morning	Afernoon
1	Outside	33	33
2	Reception	25	29
	West Open Plan	23	33
3	East Reception	92	34
	West Open Plan	94	41

**2.2 Carbon Dioxide Monitoring**

**OBJECTIVE** To assess the adequacy and efficiency of ventilation throughout the building using carbon dioxide as a surrogate indicator.

**METHOD** Carbon Dioxide  
 Range -3000ppm  
 Accuracy  $\pm 3\%$  over the range of 0 to 1500ppm  
 Resolution 1ppm

The measurement protocol involves:

- Carbon dioxide concentration shall be in parts per million (ppm)
- In tenanted office areas carbon dioxide concentration is measured at a height of 1.1 metres

**RESULTS**

Sample		Carbon Dioxide (ppm)	
No	Location*	Morning	Afternoon
1	Outside	348	354
2	Reception	830	1075
	West Open Plan	808	1061
3	East Reception	561	557
	West Open Plan	611	565

### 2.3 Carbon Monoxide Monitoring

**OBJECTIVE** To measure levels of this gas in the building and detect any significant indoor sources.

**METHOD** Carbon Monoxide  
 Range 0-200ppm  
 Accuracy  $\pm 3\%$  over the range of 0 to 10ppm  
 Resolution 0.1ppm

- Carbon monoxide concentration shall be in parts per million (ppm)
- For each major HVAC system selected the carbon monoxide level is measured at the outdoor intake of the corresponding air handling unit (up to a maximum of 4 points). Where there is no HVAC system in the building, the measurement will be done outdoors in the vicinity of the air ingress points

### RESULTS

Sample		Carbon Monoxide (ppm)	
No	Location*	Morning	Afternoon
1	Outside	0	0
2	Reception	1	1
	West Open Plan	1	1
3	East Reception	2	0
	West Open Plan	2	0

**2.4 Temperature Monitoring**

**OBJECTIVE** To confirm that ambient room temperatures fall within standards likely to be found satisfactory by the majority of building users.

**METHOD** Air Temperature  
 Range 0-50°C  
 Accuracy  $\pm 0.5^\circ\text{C}$   
 Resolution 0.1°C

The measurement protocol for hand held instruments involves:

- Air temperature at a height of 1.1 metres above the floor shall be recorded as °C
- Air temperature is measured at least 1 metre from the external perimeter walls
- The equipment must be allowed to equilibrate in the tenanted office building for at least thirty (30) minutes prior to any measurements being undertaken
- Then measurements are done at each designated location at both of two time periods; 10am to 12noon and 2pm to 5pm. The equipment is allowed to further equilibrate and stabilise at each sample location for fifteen minutes and then the average reading over a five (5) minute period is recorded

**RESULTS**

Sample		Temperature (°C)	
No	Location*	Morning	Afternoon
1	Outside	26.0	25.3
2	Reception	21.0	21.7
	West Open Plan	22.7	22.5
3	East Reception	23.1	23.2
	West Open Plan	23.4	23.8

**2.5 Relative Humidity Monitoring.**

**OBJECTIVE** To confirm that relative humidity levels fall within standards likely to be found satisfactory by the majority of building users.

**METHOD** A hand held instrument that allows multipoint logging of different parameters is recommended. Such an instrument should have the following minimum requirements.

Relative Humidity

Range 5-95%RH

Accuracy  $\pm 3\%$

Resolution 0.1%RH

The measurement protocol for hand held instruments involves:

- Relative humidity at a height of 1.1 metres above the floor shall be recorded as %RH
- Relative humidity is measured at least 1 metre from the external perimeter walls
- The equipment must be allowed to equilibrate in the tenanted office building for at least thirty (30) minutes prior to any measurements being undertaken

**RESULTS**

Sample		Relative Humidity (%)	
No	Location*	Morning	Afternoon
1	Outside	35.5	38.7
2	Reception	40.9	43.1
	West Open Plan	39.3	40.9
3	East Reception	41.5	42.6
	West Open Plan	41.2	41.6

**2.6 Air Speed Monitoring****OBJECTIVE** To assess air movement within the occupied areas

**METHOD** Air Speed  
 Range -30m/s  
 Accuracy  $\pm 1\%$   
 Resolution 0.001m/s

Air speed at a height of 1.1 metres above the floor shall be recorded in metres per second.

**RESULTS**

Sample		Air Speed (m/s)	
No	Location*	Morning	Afternoon
1	Outside	N/A	N/A
2	Reception	0.03	0.03
	West Open Plan	0.01	0.02
3	East Reception	0.01	0.01
	West Open Plan	0.01	0.02

**2.7 Noise Level Monitoring**

**OBJECTIVE** To assess the noise levels emitted at each location.

**METHOD** A level 1 or level 2 sound level meter as described by AS1259 is used to measure sound levels. The meter should be set to read on the "A" scale to record in dbA. The following minimum requirements apply:

Sound level  
 Range 30 – 100 dB  
 Accuracy  $\pm 1$ dB  
 Resolution 1dB

The measurement protocol involves:

- Ambient sound is measured in dB on the A scale
- In tenanted office areas the sound level is measured at a height of 1.1 metres above the floor

**RESULTS**

Sample		Noise Level dB(A)			Noise Level dB(A)		
		Morning			Afternoon		
No	Location*	Max	Min	Ave.	Max	Min	Ave.
1	Outside	N/A			N/A		
2	Reception	55.1	51.2	53.15	52.9	50.3	51.6
	West Open Plan	56.9	53.2	55.05	52.3	46.1	49.2
3	East Reception	60.1	52.9	56.5	58.2	37.9	48.05
	West Open Plan	38.6	48.6	43.6	38.7	52.8	45.75

**2.8 Light Level Monitoring**

**OBJECTIVE** To assess the light levels at each location.

**METHOD** Light intensity measurements are made with a portable light meter in accordance with AS1680.1 Appendix B. The equipment must be NATA calibrated. The device must have been calibrated within the last twelve (12) months. The following minimum requirements apply:

Illuminance

Range 0 – 2000 lux

Accuracy  $\pm 5\%$  over the range 1-1000 lux

Resolution 1 lux

The measurement protocol involves:

- Measurements are recorded in lux
- Light readings should not be taken within ten (10) days of more than 50% of lamps in an area being replaced
- The general lighting system should be operated on the day of measurements for at least two (2) hours prior to measurements to allow the light output to stabilise. This can be confirmed by the assessor during the preliminary walk through inspection on the day of the assessment
- Measurements are undertaken at workstations in the horizontal plane and vertical plane. The person who is taking the measurements should sit at the workstation in the normal manner as the occupant (or have the occupant remain at the desk if this is not inconvenient) to record the measurement even if this results in a shadow on the lux meter. The horizontal measurement is done either on the keyboard or between the keyboard and monitor if there is sufficient space. The vertical plan measurement is done with the lux meter against the computer monitor (reading the light hitting the monitor or the location where a monitor would be)

**RESULTS**

Sample		Illuminance (lux)											
		Morning						Afternoon					
No	Location*	Horizontal			Vertical			Horizontal			Vertical		
1	Outside	N/A						N/A					
2	Reception	130	133	240	73	80	100	125	180	123	87	130	100
	West Open Plan	143	221	152	107	116	112	171	260	381	124	134	312
3	East Reception	225	220	270	108	138	126	271	184	430	118	87	198
	West Open Plan	312	180	256	183	156	165	386	314	268	245	202	202

**3.0 LABORATORY ANALYSIS**

Various samples of air, water and/or building fabric may have been taken for subsequent laboratory testing. All analytical work including routine or fungal spore identification was carried out in chemical or microbiological laboratories, qualified and accredited where required, to perform such tests by technicians, trained and experienced in accepted procedures. Wherever possible, analytical procedures were carried out in accordance with the National Association of Testing Authorities (NATA) of Australia. The specific methods used are referenced where appropriate.

**3.1 Microbiological Monitoring**

**OBJECTIVE** To confirm that relative humidity levels fall within standards likely to be found satisfactory by the majority of building users.

**METHOD** Airborne microbials as a total of airborne viable mould and airborne viable bacteria is determined using the principle of the inertial impactor as described by “NIOSH 0800 Bioaerosol Sampling (Indoors)”. Different culture media was required for mould and bacteria. 25 l/min of air is drawn over the culture media for a sample time of 5 minutes.

The measurement protocol involves:

- Airborne microbials is reported as colony forming units per cubic metre (cfu/m<sup>3</sup>)
- For both the tenant and whole building rating tools indoor airborne microbials is measured at a height of 1.1 metres from the floor.
- A NATA accredited laboratory with experience in analysing culture media for mould and bacteria is required. Incubation of culture media was done at room temperature. Total airborne microbials at a given location is the sum of the airborne mould and airborne bacteria at the same location.

**RESULTS**

Sample		Total Bacteria (cfu/m <sup>3</sup> )	Total Mould (cfu/m <sup>3</sup> )	Total Airborne Microbials (cfu/m <sup>3</sup> )
No	Location*			
1	L4 West Open Plan	186	429	609
2	L1 West Open Plan	550	314	864
3	Outside	293	571	864

### 3.2 Volatile Organic Compounds (VOCs)

**OBJECTIVE** Sampling and analysis of volatile organic compounds.

**OBJECTIVE** To estimate the amounts of any volatile organic compounds present in the building air.

**METHOD** The required methodology is an analytical approach involving active sampling onto a sorbent cartridge. To make this measurement as cost effective and readily available as practical the methodology of "ISO 16200-1 (200) Workplace air quality sampling and analysis of volatile organic compounds by solvent desorption/gas chromatography, Part 1: Pumped sampling method" has been adopted.

The measurement protocol involves:

- Total VOC concentration is reported as mg/m<sup>3</sup>
- At each location is placed both a charcoal and XAD-7 sorbent cartridge
- Individual air samplers are prepared at each location for the separate collection of non-polar VOC (charcoal cartridge; eg SKC 226-01) and polar VOC (XAD-7; eg SKC 226-95).
- A NATA accredited laboratory with experience in analysing sorbent cartridges should be used to determine the VOC concentration. Analysis must involve gas chromatography with flame ionisation detection or gas chromatography with mass selective detection. The detection limit with either analytical method should be at least 0.01 mg/m<sup>3</sup>.
- Non-polar VOC is quantitated as a total by reference to toluene for all chemical species with a retention time between hexane and hexadecane inclusive. Polar VOC is quantitated as a total by reference to methanol for all chemical species with a retention time between hexanol and hexadecanol.
- Total VOC at a given location is the sum of the non-polar VOC and polar VOC at the same location.

### RESULTS

Sample		Polar VOC (mg/m <sup>3</sup> )	Non-polar VOC (mg/m <sup>3</sup> )	Total VOC (mg/m <sup>3</sup> )
No	Location*			
1	L4 West Open Plan	ND	ND	ND
2	L1 West Open Plan	ND	0.1	0.1

*ND – Not Detected*

### 3.3 Formaldehyde Monitoring

**OBJECTIVE** To estimate the amounts of any volatile organic compounds present in the building air.

**METHOD** The required methodology is an analytical approach involving active sampling onto a sorbent cartridge. The methodology follows “ISO16000-3 (2001) Determination of formaldehyde and other carbonyls – Active sampling method”.

The method protocol involves:

- Formaldehyde concentration is reported as mg/m<sup>3</sup>
- An air sampling pump with a dinitrophenylhydrazine-coated silica gel cartridge (eg SKC-226-119) is located on a stable surface with the inlet of the cartridge at a height of 1.1 metres from the floor. Air should be sampled at a rate of 0.1 to 0.5 litres per minute over a five (5) hour period during the day (between 10am to 5pm).
- A NATA accredited laboratory with experience in analysing sorbent cartridges should be used to determine the formaldehyde concentration. Analysis must involve high performance liquid chromatography with ultraviolet detection and having a detection limit of at least 0.001 mg/m<sup>3</sup>.

### RESULTS

Sample		Formaldehyde (mg/m <sup>3</sup> )
No	Location*	
1	L4 West Open Plan	ND
2	L1 West Open Plan	0.03

*ND – Not Detected*

